



# PROOF OF CONCEPT

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*Editors: Anna Meroni, Ana María Ospina Medina, Beatrice Villari*

# ServDes.2018

*Service Design Proof of Concept  
Proceedings of the ServDes.2018 Conference*

**Editors:**

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## ABOUT SERVDES . 2018

Service Design can no longer be considered an ‘emerging discipline’. Though recent and in continuous evolution, it is now consolidated enough to be assessed and reviewed in terms of effectiveness and impact on economy and society: how far has the logic of services (and of Service Design culture) influenced the different domains of innovation and value creation? How much has this been truly integrated into the innovation process of private and public sectors? How effectively has this been understood, evaluated and discussed? How far have digital technologies and media been influencing service design and delivery?

Initially, Service Design mainly concentrated on the paradigm shift from designing the materiality of objects to focusing on immaterial experiences, interfaces, interactions, and strategies. Thus, for some decades attention has been paid to the changing role and competencies of the designer, and to the establishment of Service Design as a discipline in its own right, despite its multi-disciplinary approach which includes management, ethnography, sociology, and organizational studies, to mention but a few.

The ServDes.2018 conference aimed at validating, discussing and reviewing the models, processes and practices developed and used in the service design ecosystem, from its academic community to practitioners, companies and organizations at large.

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## *Track 1: Learning and practicing*

Today's organisations are increasingly taking advantage of approaches from the design field to nurture, re-frame and manage their innovation strategies. Design "thinking", in the broader sense, is adopted by public and private organizations with the aim of transforming both the processes and the outputs of a variety of human-centred activities, including the management of human resources. Service design, in particular, is increasingly used to build internal competencies and/or collaborate with service design agencies. This is largely due to its intrinsic focus on interaction and user experience, its transformative perspective on people's behaviours and its problem solving approach.

As a consequence, a number of business consultancies are expanding their skills into the service design field. In a situation where design competencies are diffused and everybody can access the 'tools for designing', the need to redefine the role of service designers naturally emerges. Their professional value and competencies require resetting as against other practitioners working within services and innovation.

This track aims to explore the evolution of the skills a service designer must acquire and which education is expected to provide. It will reflect on:

- The role of service designers in different sectors and organizations and the related challenges, in particular with regard to their relationship with other design experts and the broader ambit of application of design thinking.
- The new skills that need to be taught in order to tackle the challenges of the service design practitioner and expert.

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## Learning and practicing in service design

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### Abstract

The paper analyses the contributions to the “learning and practicing” track of “ServDes.2018 Proof of Concept” and categorises them by identifying convergences and defining six emerging topics. As a result, new roles and responsibilities emerge. They can be summarised in a few directions: 1) beyond learning - where more and more, service designers are explicitly or implicitly requested to play the role of educators within organisations; 2) beyond human centred design – where the need to better understand the role of and the interaction with ‘non-human agents’ emerges; 3) beyond organisational change – where the transformational role of design seems to expand from within organisations to the relationships that organisations establish with external actors.

**KEYWORDS:** service design, learning, designer skills, stakeholders, big data, impact, emotional intelligence

### Introduction

The ‘learning and practicing’ track of “ServDes.2018 Proof of Concept” Conference was designed with the ambition to investigate two apparently traditional topics, coming out with new ideas and trajectories. This was done in the first place by putting the topics together, in order to investigate their interplay within a context of fast change in the role of a service designer. The risk, for a track that explicitly aimed to “... explore the evolution of the skills a service designer must acquire and which education is expected to provide”, was to tie learning and practicing respectively to education and professional practice, ending up with two disconnected sets of papers, focused on the one hand on the formal training of designers and on the other hand on the new skills of practitioners. In reality, in most of the contributions, the two concepts have been interpreted as intertwined.

In our view, this is not only grounded in the established idea that design as practice can be learnt only through practicing, but also in a powerfully emerging interest in the transformational role of service design, both at the individual and at the collective, organisational and network level. In this perspective, the papers confirm that learning stands

at the core of the design process (Beckman & Barry, 2007) and that service designers operate in interconnected flows of ‘knowledge building’ and ‘knowledge using’ (Owen, 2006), but at the same time they document an implicit and explicit transformational role (Yee, Jefferies & Michlewski, 2017) of service design, rising upwards from individuals to organisations, communities, networks and society as a whole.

Moreover, learning is interpreted in a multi-dimensional and multi-directional mode, which means that service design creates and transfers knowledge across different projects and across diverse actors and stakeholders that take part in its practice, including the designers themselves. Contrary to Owen’s idea that “producing works” (i.e. designing) is a matter of exploiting existing knowledge, in contemporary service design learning and practicing seem to occur in a continuum in which knowledge flows back and forth.

The papers overall show a transversal co-design and human-centred perspective, which implies the involvement of a significant number of non-designers in the design process. Here, a subtle transition from engaging non-designers in design to introducing design to non-designers seems to emerge, which calls for a better understanding of the interaction between expert and diffuse design (Manzini, 2015), as well as between design knowledge and functions, and other forms of knowledge and functions. This brings us to the incorporation of design into organisations, a phenomenon which has already been described in its recent evolution (Muratowski, 2015), and which seems to occur both implicitly, in a bottom-up fashion, establishing an internal design culture through projects (Deserti & Rizzo, 2014), and explicitly, creating new dedicated functions in organisations that are traditionally quite distant from design: managerial consultancies, big corporations and, more recently, public bodies. Even though these organisations may be interested in different design capabilities, service and interaction design emerge as the most powerful engines of the expansion that is taking place.

At the same time, it seems that both the scope of single projects and that of single organisations are too narrow to render the current complexity of service design learning and practicing: learning occurs across projects, and networks are playing an increasingly important role, with particular reference to service design, where co-creation and co-production have become the norm rather than the exception (Akaka, Vargo & Lusch, 2012; Stickdorn et al, 2017, Patrício, Figueiredo de Pinho, Grenha Teixeira & Fisk, 2018). In addition, we can notice this happening at an unprecedented scale, which often implies iterative and complex processes, where the flow of data and people engaged and produced is massive (Meroni, Selloni & Rossi, 2018).

The need to co-create and interact with a multiplicity of subjects, from different cultures, (within organisations) sub-cultures and disciplinary backgrounds, is calling for a deep change in the skill set of service designers. The “T-shaped” model of design skills (Madhavan & Grover, 1998; Heeseok & Byounggu, 2003; Kelley, 2006) is somehow confirmed by the papers, but there seems to be an emphasis both on the vertical stack of capabilities that are relevant to service design (in a broad sense and with reference to specific domains of application), and on the horizontal or transversal set of capabilities which are connected with those soft skills that hark back to empathic design (Mattelmäki, Vaajakallio & Koskinen, 2014) and emotional intelligence. More precisely, after a period in which the emphasis was placed on expanding horizontal skills, now the focus is on strengthening the vertical stroke and clarifying what is essential in the horizontal one. In some of the papers the acquisition and management of empathic skills is introduced in a problematic perspective, while others are more focused on the need to renovate and expand the “traditional” ability of service designers to facilitate work across organizational or knowledge silos and somehow to “train and educate” the people in the organisations.

Finally, the question of how to deal with complexity seems to be powerfully re-emerging from the era of cybernetics and to inform the debate on new challenges for service design and on the shift from user- to human-centred design. This has broadened views on

stakeholders and contexts far beyond traditional UCD (User Centred Design), embracing the co-design perspective and recognising that co-design typically involves a multiplicity of subjects that may have different and, sometimes, conflicting views and objectives. In the light of the arguments that we have briefly outlined, we tried to categorise the contributions under this track, identifying convergences and similarities among them and defining emerging topics, which led us to the following clusters:

- Service design as a means for learning and transformation;
- Service design as an epiphany that impacts on organisations;
- Service design and broadened views on stakeholders and context;
- Service design and new ways of gathering, using and making data accessible;
- Service design as a way to impact on communities and cultures;
- Service design in relation to emotional intelligence and empathy.

In the following, we will briefly introduce these emerging topics one by one, trying to describe the underlying idea that connects the different papers and draw a few conclusions.

## Service Design as a Means for Learning and Transformation

Design thinking, in the broader sense, is adopted by public and private organisations with the aim to transform both processes and outputs of a variety of human-centred activities, including the management of human resources. Service design, in particular, is increasingly used to build internal competencies and/or collaborate with service design agencies, in order to deliver on the promise of service design thinking. How the learning process occurs, and how service design can stimulate learning is a practice-based process that passes through real-life experimentation. This experiential learning occurs when people are not just told about the benefits of design, but also engage in design activities as a way of learning.

This creates an impact beyond successful implementation of projects: Cipolla (2018) presents a comprehensive perspective on impact that looks beyond project implementation, to focus on 'broader systemic impact'. Lima and Sangiorgi (2018) address this topic too and focus on the 'disseminative capacity' of the knowledge source, mostly a designer, and the 'absorptive capacity' of the receiver in an organisation. The framework the paper proposes combines recipients' absorptive capacity (the ability of a firm to recognise the value of external information, assimilate it, and apply it) with the knowledge sources' disseminative capacity (to make design capabilities relevant and operable), to understand how the best knowledge transfer can occur. This also takes into account how different knowledge receivers might be prepared to adopt and explore the same design capabilities in different ways.

Holmlid and Malmberg (2018) focus on how design helps organisations in the public sector to change through the integration of design in the organisations and the development of design capability. The paper considers integrating design into an organisation to be a cumulative process, giving rise to the formation or transformation of communities of practice within the organisation. These new communities need to acknowledge and appreciate the practices within which design has been integrated in a specific way, to avoid watering down and losing the power of design as it spreads through the organisation.

Becermen, Grøndal and De Götzen (2018) analyse the client-designer relationship with a focus on the briefing process in service design projects. The authors explore this perspective through a specific use case. They reflect on how a collaborative design process fits three general but crucial points of client-consultant relationships: the fit between client needs and consultant skills, a good interpersonal fit and agreement on some ground rules. These points indicate what service design consultants should be aware of and cannot escape from, but can make their own. It demonstrates that also service designers have some experiential learning to do if they act as consultants.

In industry, among clients of service design agencies, the “demand” for learning service design skills is becoming more explicit, as the growth of service design masterclasses and professional courses demonstrates. Design schools and service design agencies offer more and more training to professionals and clients. Previously, in the first ten years of service design, most clients outsourced entire projects and despite being part of workshops and fieldwork, they did not really engage in learning service design skills internally. This has changed as organisations start to see the strategic and also permanent importance of service design. This changes the role of service designers, who have now started to take on a role as educators too.

## Service Design as an Epiphany that Impacts on Organisations

The idea that (service) design, in a practice-based or in a strategic view, may impact on organisations and call for their transformation, is today well established (Junginger & Sangiorgi, 2009; Buchanan, 2015).

While the explicit quest for the introduction of design thinking is growing and sometimes assumes the characteristics of a managerial fad, it seems that service design is being introduced into organisations through side or back doors. This process moves from an initial understanding of service design to its more comprehensive adoption throughout the organisation, in which we can observe both its transversal diffusion and its upward climb to higher levels of engagement.

Budd, Della Maggiora and Vollmer (2018) present an academic/industry partnership in which service design was used to explore the impact of online shopping on brick-and-mortar retailers. This case is the prototypical example of what we would call a “service design epiphany”: both parts (the school and the company) benefitted from the collaboration beyond their original expectations, which led to unexpected organisational transformation. In particular the company, which was not formally exposed to the new methodologies corporate-wide, began incorporating aspects of the service design language and approaches in their cross-functional conversations without realising it. In the authors’ view, the positive uptake demonstrates the hunger and willingness for older technology companies to consider new customer-experience focused methods to rethink innovation and go to market more quickly. Beyond the aspects connected with the innovation of the offering and of the forms and channels of relationship with the customers, the paper underlines that the collaboration led to internal process improvements, and that it emerged that Service Design can help expedite internal change management initiatives.

Prendiville (2018) introduces an interesting exploration of design’s contribution to science and technology innovation services (STI), which is of peculiar interest in a moment in which STI policy making is looking at co-creation and at design-led processes to expand the engagement of society in science and innovation beyond consultation. The paper introduces The Satellite Applications Catapult, a UK Government’s science and technology innovation centre established in 2013 with the objective of supporting economic growth through the exploitation of space with the application of satellite technologies. This sector is emerging with activities focused ‘downstream’ on developing digital services, which involve people, technology, artefacts and organisations to be configured in a human centred and business orientated way, to achieve economic and social value. The paper highlights that to co-ordinate this complexity, there needs to be a high level of co-creation of knowledge between different actors, in which service design can play a significant role. In particular, the paper locates design practices on three conceptual levels within the organisation, in line with extant models of the evolution of design knowledge (e.g. the Danish Design Ladder), progressively enabling learning and transformation towards a human centred organisation that maximises its knowledge sharing capability: i) visualisation and communication activities, coupled with the review of innovation processes, to consolidate a human centred design approach across

the organisation and make its working practices more agile; ii) learning-by-doing through co-design activities, extending design practices and processes across the organisation, and externally with clients, to enable knowledge flows in both directions; and iii) facilitation of strategy through visualisation and the identification of priority areas that may be market- or technology-focused within different projects. This helps the organisation to think about how they plan their business and how to organise and prioritise their work in a way that allows it to adapt and respond.

## Service Design and Broadened Views on Stakeholders and Context

The diffusion and expansion of the notion of co-design seem to have been playing a significant role in broadening the traditional focus of service design on the end-users. Indeed, the very essence of co-design is to shift the focus from a specific actor to an action and attitude that can be transversally applied to the whole system of actors taking part in the design process, including service employees (Steen, Manschot & De Koning, 2011). Analysis of the transition from user- to human-centred design has already recognised this (van der Bijl-Brouwer, 2016), but recent evolutions seem emphasise organisations as something more than just ordered groups of people. In this perspective, the papers that we have gathered under this topic form a continuum with those dealing with transformational learning and organisational transformation.

Herfurth and Sinclair (2018) illustrate the results of an ethnographic research engagement in which a researcher from the Glasgow School of Art inquired into the practice of FutureGov, a public sector service design agency, shadowing its activities, conducting interviews and drawing implications for service design education. The paper suggests going beyond the user- and human-centred design focus, to place attention on a wider range of stakeholders involved in service design, implementation and delivery, and on aspects connected with organisational transformation. The paper highlights challenges and opportunities for service designers when operating in a context of organisational transformation, and proposes four ways of extending current studio design education practices, which are actually already integrated in many curricula, even though not always in combination: i) Simulating the designer-client relationship, exposing students to client interactions; ii) Integrating specialised and sector-specific knowledge alongside studio design education; iii) Extending studio teaching with internships, placements and live projects; iv) Organising collaborative courses with other university faculties, such as business schools.

Komatsu Cipriani and Rossi (2018) reflect on the ongoing transformations of the object of service design, the spaces in which it is conducted, the actors involved, the stages in which it operates and the value it delivers. The paper proposes an initial prototype of a skill framework, organized around the different aspects of contemporary complexity, to guide service designers in preparing themselves to deal with complex challenges. Overall, the paper describes a mix of transversal and vertical skills that service designers should possess, in line with the T-shaped knowledge perspective. At the same time, it underlines the need to strengthen vertical skills in connection with the peculiar context/sector/industry in which the designer operates, going back to a focus on the output rather than the process.

Santamaria, Escobar-Tello and Ross (2018) investigate how a better understanding of the cultural context could support service designers in identifying opportunities and developing strategies to scale up solutions. The paper underlines their context-dependency, and suggests applying a sociocultural lens through which to make sense of the relationship between value propositions, users and the culture they are immersed in. The paper suggests an early

adoption of this approach, to avoid the emergence of ill-defined services or start-ups that struggle to be self-sustainable. Moreover, it suggests the shift from a user- to a context-centred approach to enhance the strategic skills of service designers and build stronger capability, in order to leverage the acceptance and diffusion of innovations.

## Service Design and New Ways of Gathering, Using and Making Data Accessible

The design profession is changing as much as most other professions in the context of varying working methods and the growing role of technology in the workplace. Three papers apply this general understanding to the role of designers in service design. The changes concern traditionally specific design skills, such as many types of visualising, as well as giving rise to new skills that designers must develop, such as working with big data when designing services. Other general skills that are not specific to designers, such as collaborating with experts in other disciplines, are changing too. Several papers express this, and point to education as the locus where the changing design practice should be shaped as much as in the professional world.

Costa, Patrício and Morelli (2018) state that some of the key principles of designerly thinking, namely collaboration and visual thinking, are paramount in understanding, discussing and sharing evidence gathered from fieldwork in service design. Designerly thinking is a way of reasoning and making sense of things in a collaborative manner. The analysis that the authors perform indicates that a designerly qualitative research approach better supports the identification of relevant actors, enables a more intuitive data triangulation, and is strong at triggering collaborative and multidisciplinary discussions. Visualisation tools play a crucial role in all of this. They are not only used to communicate data with other people and organisations, but also help to draw conclusions in service design research and proceed to the creation of hypotheses, sketches or models that represent possible future services and interactions people have with them.

De Götzen, Kun, Simeone and Morelli (2018) wonder what kind of data literacy is needed to equip a service designer in this era of “living services” that digest big amounts of data to predict what will happen next. Two perspectives of data literacy in education are proposed. Firstly, students must be equipped with the tools needed to understand, analyse and transform data; they will also require tools with which to design with this data, informing the process at every step. Secondly, data must be seen as a resource for design, sometimes openly available as a commons. The intersection of those two perspectives creates a new working area, in which we must define new tools and practices that raise the level of data literacy among students and can give rise to a higher, more purposeful integration of data into the design of services.

Roxburgh and Irvin (2018) explore what visual skills designers need to develop for service design. Visual skills seem to be taken for granted in service design, and are seldom explicitly addressed beyond the general importance of making things visible and tangible. Some de facto industry standards have emerged, like the stakeholder map and journey map and the ubiquitous 2-by-2 diagram, without paying much attention to the aesthetics of these artefacts. They seem to be considered mainly functional tools, as they are mostly sketched roughly on a whiteboard rather than delivered as carefully crafted artefacts. This certainly empowers everyone, since anyone can engage in these very basic visualisations. However, it

also constitutes a missed opportunity: designers know that carefully crafted visualisations can express deeper meanings and raise more intricate questions.

Photography and film are another good example (Raijmakers, Miller et al. 2016). Generally, they are considered to be indispensable in service design, but the material that is shot, edited and presented is mostly point-and-shoot or over-stylised concept films all with similar music. It seems a much broader view on the visual in service design is needed. Education is a good arena to explore what is important, possible and desirable, to then raise the bar for service designers accordingly.

## Service Design as a Way to Impact on Communities and Cultures

How service design can impact and transform communities and cultures is an emergent topic in the debate around the role of designers in the contemporary social landscape. This largely focuses on design for social innovation, but not only, and touches upon concepts such as activism, behaviour change, and cultural shift.

Ostergaard (2018) discusses whether there is evidence that a service designer could effectively act as an “Agent of the Community” addressing social challenges with a focus on the environment, social innovation and sustainability. In fact, according to the authors, despite the diffuse practice and discourse about design, social issues (including design for social innovation) and the distributed character of agency by individuals or organisations (Haxeltine et al, 2016), a number of scientists believe that designers do not have the skills required to address big, multidisciplinary societal challenges, because their curricula lack adequate competence in social sciences. This calls not only for the introduction of social sciences in education, but also for a more systematic involvement of social-science related skills in network-based forms of collaboration in the civil sector.

Part of the expertise called for to support designers when acting on communities, is a basic knowledge of behaviour change theory. In order to meet today's social challenges, Mahamuni, Khambete and Mokashi-Punekar (2018) acknowledge the need to influence and change user behaviours at individual and society level by bridging this gap in theoretical knowledge. This could lead to an approach shared by both service design and behaviour change. In so doing, a set of method and tools could be developed to guide service conception, taking into account psychological mechanisms right in the core elements of a service (Kahneman, 2011). While the discourse about integrating these two disciplines is increasing in importance, there has so far been little experimentation of a joint approach. However, according to the authors, the foundation for the professionals to venture into service design for behaviour change is in place.

In the research and practice of design for social innovation, reflection about the impact of design in support of social innovation processes is a key point. Cipolla (2018) discusses the design approach adopted by the Labs of the DESIS Network - Design for Social Innovation and Sustainability. Cipolla argues that DESIS uses service design to: i) scale out social innovations, by understanding social innovations as services and using design to promote their dissemination as new service models; ii) scale profound social innovations through services that work to change relationships and cultural values as social innovations do; iii) explore how to scale up processes and the transformative changes they bring about. As a conclusion, the author advances a proposal for a theoretical service framework, inspired by the cultural values of social innovation, to design services with higher relational and interpersonal qualities and based on collaborative principles.



Therefore, when looking at the actual impact of service design in transforming communities in relation to wicked problems, including environmental and social sustainability, reflection inevitably regards broadening expertise to include social and behavioural sciences. This integration of the curriculum could help designers to better tackle complex societal challenges and to design services that purposefully nudge people in the direction of more sustainable and relational behaviours.

## Service Design in Relation to Emotional Intelligence and Empathy

When the activity of service designers extend into social and psychological areas, the importance of developing emotional intelligence becomes evident, as the horizontal part of the “T-shaped” knowledge model previously mentioned. A designer may require emotional intelligence for two main purposes: to design services that are more sensitive to the circumstances and to the health, comfort and happiness of their users; to increase awareness of the well-being of all those implicated in a project, including the designers themselves. With reference to the framework proposed by Goleman, (2006), the emotional intelligence components of self-awareness and self-regulation, empathy and social skills require particular attention.

Self-awareness and self-regulation, meaning the ability to recognize and understand personal moods and emotions, and their effect on others, and therefore to control or redirect disruptive impulses and moods, are particularly important in the perspective introduced by Dhir (2018). The author discusses well-being in service design: moving from the observation that service design often has to tackle sensitive issues (from young people in care to mental health, unemployment, homelessness, overcrowding, crisis and domestic violence, to name but a few). Dhir emphasises the importance of adapting normal project practice to protect the mental health and well-being of all those involved in a project, designers included, and not overlooking these aspects. As a conclusion, the author suggests creating project rituals to look after the participants, which requires a cultural shift, valuing mental health and well-being and seeking to reduce staff stress and trauma.

A lot has already been discussed in the service design community with regard to the importance for service designers of developing empathy (another component of the emotional intelligence framework). The ability to understand the emotional makeup of other people and treat them accordingly is, in fact, a paramount skill for designers for many purposes. Santos, Muller Garcia, Carneiro Alves and Lima Silveira (2018) present a tool, Bodystorming, which helps designers to deal with the multiple interactions that occur throughout a service and the complexity of bringing together the perspectives of various stakeholders. In this technique, designers and other stakeholders use their bodily expression to create or represent ideas about the interactions and configurations around a given experience. Bodystorming helps to develop empathy and leverage it to design a service, because it increases the effectiveness of the ideation process and the pre-evaluation of a service experience, by helping the designer to put him/herself in the role of other stakeholders. Resonating with the tradition of the Forum Theatre (Boal, 1974) it falls into the category of “enacting” tools (Brandt, Binder and Sanders, 2012), which facilitate participation in the work-in-progress of design projects and seems particularly relevant for service design projects, where time and interaction are key elements.

Finally, social skills (another pillar of emotional intelligence) can be mentioned here as a way to bring together the previous considerations of self-awareness and empathy in service design. In fact, proficiency in managing relationships and building networks, and the ability to lead change are preconditions for an effective use of design thinking to improve the quality of the experience and the well-being of all those serving in and served by

organisations. In such a vision, service design could contribute to the reform of organizational culture (Buchanan, 2015).

## Conclusions

Over the last decade and a half, wherein the profession of service designer has become a recognised practice, we can see how the related profile and role have emerged and got configured in the relationship with different organisations, companies, public bodies and communities.

As a result, new roles and responsibilities emerge. These can be summarised in a few directions that open also research opportunities:

Beyond learning: more and more, service designers are explicitly or implicitly requested to play the role of educators within organisations, acting to transform not only services, but also (and sometimes mainly) how people work and their motivation to act.. This sheds light on designers' capability to train other people, to disseminate design and to spur people to action. As such, this implies for the designer the acquisition of new skills and of a collaborative mindset that often must bridge different worlds.

Beyond human centred design: from many perspectives, the need to better understand the role of and the interaction with 'non-human agents', from the planet to A.I.s, seems to emerge. In fact, enlarging the scope of the design action implies considering concepts, entities, things and "values" that transcend the individual, to comprise bigger ecosystems, communities and networks aggregated in new bio-socio-technical systems.

Beyond organisational change: the transformational role of design seems to expand from within organisations to the relationships that organisations establish with external actors. Service design seems to primarily operate through networks establishing new connections within a "co-" paradigm, which leads to transformations that go beyond the borders of the single organisation and involve entire networks. These networks may initially take shape for a specific scope (project) but often live in an evolutionary way beyond a single project.

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## The briefing process: Examining the client-consultant relationship through a case

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### Abstract

This paper presents the outcome of a Master thesis in Service Design done at Aalborg University and it examines the client-designer relationship in the briefing process of service design projects, in order to highlight the importance of this crucial but often overlooked part of the design process as a whole. The authors explore this perspective through a specific case developed in collaboration with the Royal Library of Denmark.

Besides the case, further insights from professional practitioners are discussed to provide recommendations for how service design consultants and prospective clients alike may approach the service design briefing phase from both sides of the table.

**KEYWORDS:** briefing process, service design consulting, client-consultant relation

### Introduction

Service design is rapidly being established as an approach to problem-solving and it is expanding as a field of research. With several international conferences and networks of professionals, a growing amount of literature and multiple dedicated higher education programmes, the field gathers interest from industry, the public sector and academia alike. The approach is a way to new opportunities, where ownership is replaced with access, users are recognised as part of the value-creation process and understanding of experience is a driver for innovation. Plenty of successful cases highlight the usefulness of the approach (for example the Service Design Awards<sup>1</sup> and the Danish Design Awards<sup>2</sup>), and the process and tools have been well-described (Stickdorn & Schneider, 2011; Polaine et al., 2013; Sangiorgi & Prendiville, 2017; Klaar, 2015).





But how does the process of a service design project start? In this paper the authors set out to explore the briefing process and the client-designer relationship of a service design project

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<sup>1</sup> <https://www.service-design-network.org/award-about>

<sup>2</sup> <http://danishdesignaward.com/en/categories/>

The Royal Library of Denmark is a cultural institution involving university library, national library, and culture house. The SC of the library had as a main objective to improve the experience of the students that spend every day studying at the library, and as a sub-objective to create more attention around the institution. The authors worked on the development of a new service offering for students and used this specific case to investigate how a service design project actually start up, what kind of briefing is needed for fruitful collaboration between the client and the service designer and what client-designer relationship can then be established. The exploration of these topics is important to better understand how the actual practice of service design can be initiated, shared, and outcomes maximised (Boyer et al., 2013).

BRIEFING PROCESS					
	PRE-PROJECT	DISCOVER			DEFINE
 Consultants					
 Client	First Meeting Second Meeting	Introduction to Office	Staffer /Student worker Interview Staffer Interview Staffer Meeting Staffer Interview	Project Team Lunch Staffer Interview Staffer Meeting Staffer Interview	Process Update Doc 1 Brainstorm with Staffer 2 Brainstorm with Staffer 1 Project Direction Meeting 1
 Users (Students)		Student Interview	Student Interview Student Interview Student Interview Student Interview	Workshop with students	
 Experts			Experts Interview Experts Interview	Experts Interview	

Besides the learning from the case, insights from professional practitioners were gathered through interviews and presentations in Denmark (3), Norway (1), and The Netherlands (1) (Table 1). As an outcome, this research presents tentative recommendations on how to deal with the briefing process from both sides of the table.

#	Region of Operation	Position of the Participant	Research Method
1	The Netherlands	Founder & CEO	Phone Interview
2	Denmark	Founder & Designer	Phone Interview
3	Denmark	Service Design Consultant	Presentation & Discussion
4	Norway	Studio Lead	Phone Interview
5	Denmark	Designer & Strategist	Presentation & Discussion

**Table 1: Field research overview: 5 different practitioners participated to the research.**

In the following sections, both *design briefing* and the subsequent *client-consultant relationship* will be introduced and the case will be presented with some reflections. This will be followed by a discussion of the client-consultant relationship in the briefing process and, in conclusion, recommendations will be represented.

## Client Relationship & Briefing Process

In recent years there has been several publications on methods deployed in service design processes (Blomkvist et al., 2010), whereas not much has been written about what the practice of service design requires of the client relationship. Some reports and papers have explored the actual deployment of service design (Akama, 2009; Kimbell, 2009) and some publicly funded projects were meant to make the benefits of service design available by outlining how to approach external agencies (Thoenen et al., 2015; Sangiorgi et al., 2015). These publications provide various degrees of insights into the process of working with service design, such as the general relationship-types Parallel, Collaborative and Integrated (Sangiorgi et al., 2015).

A parallel relationship is characterised by a traditional expert-client relationship, where the designers are hired for a job, which they then execute in parallel, or away, from the client, only to come back with a solution. A collaborative relationship is characterised by the designers leading the process after being hired, but still maintaining a very transparent workstyle. The process is of a more agile nature, which relies not so much on a final, polished deliverable, as on recurring reviews of progression with the client. An integrated relationship relies not so much on the execution of designers' skills as the presence of them in the client organisation. This relationship is seen when the overall objective is to transfer the designers' mode of working to the client organisation.

These kind of descriptions are no doubt helpful in understanding what type of relationship might fit in a given context, but few insights are provided about more concrete critical factors in the client-consultant relationship. Looking into the management consulting field of research might offer some hints. In their article "Consultant and client - working together?" Fullerton & West refers to a summary of three critical factors in client-consultant relationships (1996). These are:

1. The fit between consultant skills and client needs. This is crucial to get to the best possible solution;
2. Interpersonal fit. This denotes the conduct and general likability of both sides;



3. Ground rules. This factor refers to how mutual expectations to the consultancy process should be aligned from the beginning, with a clear explanation of the consultants' approach.

As an extension of the first point, which also hints back at the relationship-types outlined above, Williams (2001) point out that knowledge is not so much transferred as it is negotiated and framed as a story. This aspect of consulting aligns very well with the co-creational mindset of service design (Sanders & Stappers, 2008; Stickdorn & Schneider, 2011), which tells a believable, relatable story, rather than lecturing.

For this research, while examining client-service design consultant relationship, the authors choose to focus on the briefing process as the first step on the road to realising a project owing to the fact that ill-structured briefing process can result in unusable work, waste of money and demotivated designers and clients. In their book *Managing the Brief for Better Design*, Blyth & Worthington defines briefing as

*“an evolutionary process of understanding an organisation’s needs and resources and matching these to its objectives and its mission. It is about problem formulation and problem-solving. It is also about managing change. Ideas evolve, are analysed, tested and gradually refined into specific sets of requirements.” (2001, p.3).*

In some cases, the term briefing might be confused with a brief; hence, it is important to distinguish between these terms (Field, 2003). Blyth & Worthington makes this distinction by stating briefing is a process that begins without pre-conceived solutions, where options are reviewed and requirements articulated. Whereas a brief is a product of that process that formalises the key decisions and instructions in the project (2001).

The perception of briefing shifted from a process of discrete steps where design could not begin until the briefing stage completed, to articulating the aspirations of the client, and stimulating the design team (ibid.). When the authors look into the service design field from a process perspective, service design is an iterative, complex and ongoing process (Stickdorn & Schneider, 2011; Moritz, 2005). This matches well with the processual understanding of design briefing, and which will be discussed this later.

## Involving the client in the process of service design: a case study

The case project was initiated when the SC of the Royal Library of Denmark enquired about a thesis project at the institution, because the SC was interested in trying to work with service design. This open starting point of the project makes it a compelling case to examine the briefing process through. The Finnish service design agency Hellon has identified two client archetypes, the solver and the advocate, which are characterised by their aim with soliciting a collaboration with service design professionals (Einiö et al., 2016). The solver is focused on a specific task at hand, while the advocate is trying to introduce the approach to the organisation. The SC was identified as an advocate early on, and they were a tremendous help in involving staff in the process, which is a crucial activity to ownership and common purpose when working with service design (Akama, 2009).

The SC initially asked for research about students as users of the library, as they had some assumptions on why students are using the library but they did not have any research about the target group, and any idea or strategy on how to improve the service offering.

At the beginning, two meetings were done with the SC to clarify expectations around the project, and this was a crucial period in establishing the open-ended design process over

concrete outcomes. The suggested timeline for the project was presented, as well as the intended approach by outlining the phases of the double diamond framework (Design Council, 2007). Before starting the research, the authors built a blog<sup>3</sup> to share the key issues regarding the process with the different stakeholders.

Because of the very open brief, the inquiry started quite widely and it focused on qualitative research that could define the direction of the project and help to ask better and more relevant questions going forward. The main source of data was in-depth interviews with various stakeholders. Interviews were conducted with students from BA to PhD level about their habits around library usage and how they study and learn. Furthermore, interviews were set up with staff in both library and culture departments of the Royal Library of Denmark, and several library subject matter experts (SME) were interviewed.

This data was analysed by mapping current offerings, finding patterns of users, defining tangible problems and value constellations (Figure 2). Through the interviews and observations, it was clear that there were a handful of diverse problems which could all be solved with small, focused projects. Since the client did not have any research about the target group, the research validated some of the problems that the library staff was aware of. The client was initially focussed on touchpoint improvements, but they quickly realised that this project was an opportunity to introduce a new kind of user-focused approach into the organisation. To explain this reframing, a new value constellation was presented to the client. The multi-level service design-model by Patricio & all (2011) provided an accessible way to put into words what the research meant in terms of organisational impact. (Figure 3).

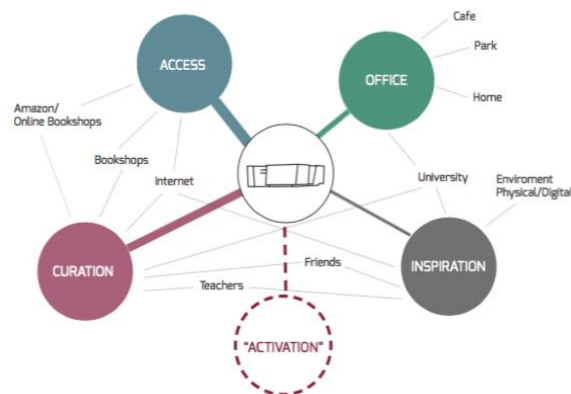


Figure 2: The value constellation map of the main values the library is offering.

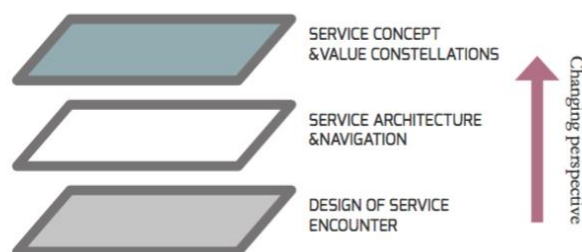


Figure 2: Multi-level service design-model (adapted from Patricio et al., 2011)

<sup>3</sup> <http://www.libraryinnovation.tumblr.com>

During the research phase, the small tangible problems that referred to the level of the service encounter were easily mapped out and were very important to suggest solutions that could create a dialogue with the client - enabling the team to move toward a more holistic customer-centred strategy (Reason et al., 2016; Thoelen et al., 2015).

This way of looking at organisations through different layers can be likened to looking at it through what Reason & al (2016) calls customer lifecycles or what Normann (2001) calls the difference between inherent and positional value. In this context, the latter refers to how the value that the library provides increases if it can position itself in the context where it means the most to users. This approach was used to continuously align with the client on which level possible interventions would have the most impact, and it helped to begin looking outside the organisation to understand the value constellation of which is part. These points are discussed in the following section.

During the reframing, the focus was on the improvement of the students' experience while attracting attention to the library and giving particular consideration to their role as paying future audience of the events at the Culture House. The research showed that students were using the library either as an office space or as a place for accessing electronic materials, indicating that the library was used and seen mostly as a silo to access rather than a platform of learning. So the question became about what kind of offerings the library could provide to support this shift.

When the project direction was clarified, the authors shared the first one-page process update document. During the design process, the client was regularly updated about the findings and the process through specific update documents. Furthermore, the client was involved in the ideation-brainstorming, design critique, testing, and final evaluation of the project. As a final outcome of the project, a service concept was created. The final deliverables were a video of the concept<sup>4</sup> and a report<sup>5</sup> detailing the concept with an implementation plan and an idea catalogue, which gathered all the ideas generated during the co-design sessions.

## Discussion of the Client-Designer Relationship through Briefing

Building on the case described in the previous section, there are several issues worth reflecting on.

The process was of a collaborative nature as described by Sangiorgi & all (2015) since the authors were leading the project but kept the SC and other relevant stakeholders very close through the process. The relationship-type was further underlined by the way the authors did not present a finalized deliverable, but rather made a point of enabling the department to go forward with testing instead of going directly to implementation. This kind of agility and hand-over support is essential in a collaborative relationship, and it was something that improved the process as it allowed for a flexible and open-ended briefing process.

### Client-Designer Relationships in Service Design

In the following section, the process of the case will be examined through the lenses of three crucial points regarding client-consultant relationships: skill-need fit, interpersonal fit and ground rules.

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<sup>4</sup> <https://www.youtube.com/watch?v=YbcBPukrrPE>

<sup>5</sup> [https://issuu.com/begumbecermen/docs/thesis\\_product\\_report\\_final](https://issuu.com/begumbecermen/docs/thesis_product_report_final)

## Skill-Need Fit

There was a good fit between what the client expected from authors, and what the service design approach could deliver. In particular, the fact that the process relied on an open-ended discovery, made it a very apt approach for the original client request. This stands in stark opposition to general management consultancy, which relies on expertise within a given field and is supposed to generate answers fast (Bloch, 1999). In addition to this point, general consultancy is often portrayed with a guru-like expert, who is paid to share their knowledge (ibid.). The service design approach, on the other hand, requires the client not to be passive, and to get involved in several stages of the process. For example, in the way clients have control over information of use, which has to be drawn out and applied in a co-creational fashion (Han, 2009). To act on this point during the briefing process, it is essential to be clear about available information and discuss the limits this might pose to the project early on.

The original request was very open-ended, and this provided a good context to get the maximum value out of a service design process. First and foremost, the authors were able to ground their ideation in a good understanding of the context, the organisation and of end-users. This was an essential part of the fit between skills of the authors as designers and the client's needs and was apparently a deliberate choice on the side of the SC. This meant that the authors were asked to investigate and ask questions but had no agenda to live up to.

The relevancy of the holistic aspect of the service design approach became clear as the collaborative consultant position allowed the authors to question everything and to rediscover the organisation with new eyes, using novel tools to visualise it. The client's feedback echoes the following point "Sometimes you are so 'deep' into the service or organisation you wish to reform, that you are blind to the outside world." (Thoelen et al., 2015).

These factors enabled the authors to come up with a solution that made sense to the organisation, but which they would not have come up with themselves. Coming in from the outside allowed the design team to ask questions across boundaries and make suggestions uninhibited by organisational do's and don'ts. Especially if the authors had not gone through the library research, they would not have seen the culture department in light of learning, because learning was not a discourse the client had used at all. Building on these premises, the authors brought fresh eyes and took a solution that has worked in other sectors and framed it for a new context.

## Ground Rules And Transparency

Although the authors attempted to be clear about how they would approach the project from the beginning, it was realised that it had been insufficient. When the authors interviewed the SC about their experience of the process, it was surprising to hear that they would have liked to see the double diamond-model at an earlier stage, to have an overview of the approach. One way the authors might have done this better was to visually merge the double diamond-model and their timeline, instead of splitting out the convergent-divergent dynamics of the approach.

Another point to be highlighted about how to support the briefing process in terms of transparency is the way the authors shared semi-formal project updates. These updates underline the processual dimension of briefing, as opposed to one final brief to be taken home. The updates are in a sense regular invitations to discuss the project as it evolves in the early stages. Akama (2009) also points out how including the director of the organisation in the twists and turns of the project, is very valuable to gain trust. These one-page project process update reports were the attempt of the authors at doing this and contributed discussions on directions as the design process unfolded.

As it has been mentioned before, the SC was a valuable advocate of the project within the organisation and for this reason they were continuously kept in the loop with material about the process with the aim of empowering them. In addition to the short update reports, the authors continuously specified recent progress as well as next steps and shared thoughts on the project along the way through the blog, which client staff was encouraged to check from time to time. To support the SC's advocacy in a stronger way it could have been useful to share more anecdotes and method outcomes, so they would have concrete examples of potential value. The way in which the SC was involved in the process was satisfying and helped to explain not only the final concept but also the different qualitative methods deployed throughout the process. This carries a crucial co-creational point about engaging stakeholders in a way that is about more than only exploiting their knowledge of the organisation, and it points to the necessity for the service designers to gauge expectations towards the co-creational aspects of the project early on.

Another crucial point has been the setting up of the project in the beginning. The SC revealed that it had been difficult for the supervisor's approval because of the fear of the "exploratory phase" of the collaboration, where the authors had to go through "a problem-finding phase". The organisation had apparently been wary of "being found out", and what would happen with the problems that might be uncovered. Would they get published and hurt the brand or their positions? Looking back the authors should have been focusing more on the positive qualities of exploring an opportunity space. In this vein, the SC had been framing the project internally as a way to create loyalty and attract more customers, which is the kind of relatable outcome managers appreciate. In terms of the briefing process, this carries an important lesson with regards to framing the project in positive terms for the client and maintaining this perspective even as the scope might change through research and synthesis.

Furthermore, the process started by listening to client concerns and it laid them out as the research confirmed them - even though the authors could see there was room for generating more value, than simply fixing the lower-level, more tangible issues. This approach was confirmed in interview #1 (See Table 1); the interviewee also sometimes gets a brief focussed on one deliverable, which is then reframed through service design tools such as customer journeys, to enable them to commence the higher-level or strategic, design processes. When the authors look back to the case, this reframing was achieved through the multi-level service design model and present and future value constellations.

## Briefing as a Process for Service Design

The briefing is a process, not a finished document. This point is especially relevant in a service design context because the approach is open-ended, and since it is fundamentally a human-centred design discipline, it should be based on research which can inform choices. But what does this mean in practice? In the case portrayed, some ground rules had been laid out at the beginning of the process, by having a meeting in the pre-project-phase where a timeline with the methodology and key milestones was shown. Nonetheless, the processual perspective acknowledges that the outcome is not clear in the beginning. However, embracing this perspective is easier said than done, because service designers will often need to show early on what it will be done and when it will be done, like the authors saw with the SC's persuasion of their supervisors. Having a clear story with cases ready can help to show when outcomes tend to be reached, and what kind of insights had to be acted on: the way processes are presented make a big difference. Instead of focussing primarily on solutions and outcomes, more could be done to prime the clients to look more forward to the research phase than to the solution's outcome.

On the other hand, designers may get caught up in the research and not be able to move past insights. Openness is essential to the design process, and according to the interviewee #4 (See Table 1), the ideal briefing process allows for questions rather than answers. However, there is a balance to be struck because freedom is both a blessing and a curse. The

interviewee #2 (See Table 1) also related how long time they sometimes spend in the pre-project finding out what the actual problem was. They did this by asking “why?” and “what does that mean?” to get to the bottom of the client’s problem. The authors felt something akin to this in the process because there was no yardstick to measure ideas. Another practitioner #3 (See Table 1) clarified that asking for key performance indicators (KPI) and even asking the client to do research to uncover KPIs was crucial. Conversely, if consultants are too closed in the request, they might not allow for the proper questioning of the premise of the project. However, if consultants achieve higher buyer competency (Interview #4) (See Table 1), they may shorten the pre-project phase substantially. Buyer competency refers to the client’s ability to understand the process they are procuring, and what they may expect of it. In the case of service design, it may refer to an understanding on the client-side: research into current practices and attitudes is crucial to understand which problem to solve, and then how it might be solved best.

From this perspective, the ideal service design process may be said to see the service designer having a say in the whole design process. However, this requires substantially trust, as there are significant barriers to lay out the entire process from the beginning. Considerations about implementation cannot be meaningfully undertaken before the actual concept outline is in place. Thoelen & all (2015) suggest that public organisations which have little experience with service design, should not start with a too complex project even though the potential impact is large. Starting with a modest project would show the organisation what they can achieve, regarding solving problems or finding new opportunities with service design. After having a successful experience, and the service design approach is recognised, the organisation can be equipped to work with more ambitious, large-scale service projects. In the use case, it was the first time that the client had service design consultancy. Together with the client, the authors chose to go forward with a concept which was not too complicated, to keep it implementable, taking into account the context of budget cuts and resource requirements. Following this, an outline and cost structure for the further implementation of the concept idea was also provided. The responsibility of service designers in terms of implementation is an entirely different discussion, but one point to draw from the case in this thesis is the value of having meetings planned, which emphasises transparency of the past process as well as setting the scope for future actions.

A skill of the service designer relating to this point which comes to light is the ability to steward divergence (Boyer et al., 2013; Service Design Network, 2015). Specifically, this is the ability to give direction to a process when designers do not know where they are going to end. Stewarding also implies a more collaborative relationship, which is fundamental to a co-creational design process, as opposed to the artistic inspiration of a more traditional understanding of design.

Going back to the discussion about briefs versus briefing, the static brief might be said to be a remnant of a traditional understanding of design. This is because a previously common request would be based on a petition for a solution for a problem outlined in brief. #5 mentioned how many clients still ask specifically for solutions such as a website or an app without any exploration of whether or not the supposed solution fits the presumed problem. The real value potential is unlocked in the exploration and validation of problems through the discovery phase in the design process and through methods such as prototyping.

In this case, the design process was characterised by briefing as a process; as shown in Figure 4 it stretched from the pre-project clarification meetings through the define phase. The process was grounded in diverse stakeholder input, so a relevant problem statement was developed.

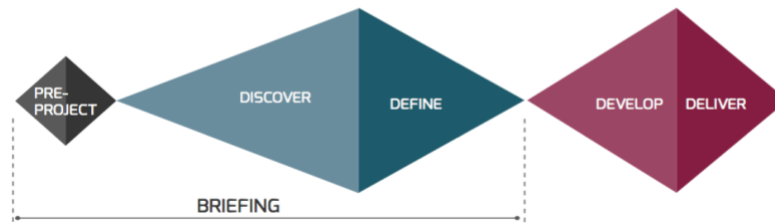


Figure 4: Briefing process of the project showed on a stretched Double Diamond to fit the actual project timeline (Design Council, 2007).

## Conclusion

In this paper, a service development project with the Royal Library of Denmark has been used as a case to focus on the service design briefing from both client and consultant perspectives.

The potential implications of service design in terms of both organisational structure and user experience demand that the initial posed questions should not be too specific, as their specificity would narrow the opportunity space unnecessarily. Rather, a process might be initiated with an open-ended request to explore a given business area and choosing how to approach the briefing and relationship building can support this process.

Looking back at how the authors approached the client's expectations with the multi-level service design model (Patricio et al., 2011), it was clear that the different levels of service design interventions were not taken explicitly into account when the request was made. The level on which the project should/will be conducted is difficult to determine from the beginning, as the process is based on research, and therefore inherently needs to open up and explore the field first. In the process, it was clear that initially there was a misalignment between how the authors talked about the project and how the client was framing it. Yet by approaching briefing as a process, the open-endedness of the service design approach was productively achieved.

The authors have drawn the following recommendations as an outcome of the research. It may benefit service design consultants and prospective clients alike, to get the most effective service design processes started up smoothly. These points are divided into what service design consultants should be aware of, and what could be said to guide clients through the process of a service design project.

A service designer should:

- Talk about opportunities and not problems. Have a more constructive conversation from the start;
- Be clear about continuously explaining the fuzzy back end of the design process and showing what happens when would ease the communication;
- Address explicitly the client's fears and doubts to build a trustful relationship.

A client that is opening up to the design for services approach should:

- Be prepared for an open process, but have in mind how the outcomes might be measured;
- Provide basic facts and data;
- Be ready to be involved in the process and

- Acknowledge that briefing is a process that has to be embraced by the organisation from the very start.

To conclude with the designer perspective, as the head of the international service design network Birgit Mager has stated, “We shouldn’t let ourselves be put into too limited a briefing, or we should reframe the briefing so it guarantees the opportunity to design valuable interventions.” (Newhouse, 2015).

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# Desis Network strategies to advancing systemic social innovation through service design

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## Abstract

DESI Network (Design for Social Innovation and Sustainability) is composed by more than 40 Labs, based in design schools all over the world. This study aims to present the service design approach adopted by DESIS Network and its impact in support of social innovation processes. Although not exhaustive (not covering theories and practices developed in all labs), the study covers two main aspects: (a) the service, developed by a DESIS Lab, that have attained the larger impact in terms of systemic change over time and (b) the service design theory that have been largely developed among network members. The study, based on social innovation theories, concludes that DESIS uses service design to *scale out* social innovations (by understanding social innovations as services and using design for services to promote their dissemination as new service models) and to *scale deep* social innovations through the services derived from them (services that work to change relationships and cultural values, as social innovations do). A challenge faced by DESIS is to frame how its service design practices could increasingly contribute to *scale up* social innovations and the transformative changes they carry out.

**KEYWORDS:** service design, design for service, design for social innovation, design education, design networks

## Introduction: Desis Network and service design

DESI is an acronym for “Design for Social Innovation and Sustainability”. This association describes itself as a network of design schools or design-oriented schools in universities, called DESIS Labs, which aims “to use design to trigger, enable and scale-up social innovation through design thinking and design knowledge.” (DESI Network, 2014).

About social innovation, it means: to enhance its potential; to raise its visibility; to facilitate its transferability; to increase its synergy and to stimulate new initiatives. It means to co-create, with local, regional and global partners, socially relevant scenarios, solutions and communication programs related to social innovation that are equal to the enormous challenges of contemporary society (DESIS website, 2014).

In design schools, the network finds a significant driver for the development of the theory and practice of design for social innovation. DESIS members are committed to promoting design education towards this mission, i.e., to educate students to lead and support to social change by using design skills to develop new alternatives and new social practices with social groups. It includes support existing social innovation cases or developing new ones.

“DESIS intends to identify and empower diffused creativity in the society. This societal creativity is expressed for example in the grassroots innovations from below (social innovations) which anticipate possible and alternative futures, but it also includes other experiments and solutions developed collaboratively. Here, the design schools (DESIS Labs) have a role, being opened to the society, participating and empowering this diffused creativity and performing an actual role (developing projects that effectively promotes change, also at local level). These projects simultaneously promote change and divulge and consolidate new design knowledge and practices. Society is a large laboratory of creativity and change, which requires centres (labs, solutions) that enable this creativity to flourish and develop. Design schools (DESIS Labs) aims to participate and empower these processes, being one of these centres or by being connected with other existing centres. In this, DESIS Labs, being based in universities have the flexibility to explore and consolidate new frontiers, but at the same time stimulates universities to be open to society”. (Cipolla et al., 2015b, p.6).

The DESIS network promotes that based on four pillars: • Students - educate them to promote change; • Paradigmatic projects – projects that indicates that it is possible to operate the shift towards new ways of living and doing; a new design knowledge – able to help individuals, communities, institutions and companies to design feasible, solutions and take part in a complex social learning and creative process towards sustainable changes; International networking – to intensify the above-mentioned processes, to improve reputation at local level (DESIS Labs) and to enable joint initiatives between DESIS Labs (Cipolla et al., 2015b).

The contribution of the DESIS Labs activities to the service design theory and practices deserves a comprehensive analysis. Service design is an activity that has been defined as a confluence of design research activities and practices, such as interaction design, design for sustainability, strategic design and experience design (Meroni & Sangiorgi, 2011). This study concerns the developments in research on service design inherited from design for sustainability, or more specifically, in DESIS Network, which has been focusing on the identification, empowerment and development of social innovations, which are considered as working prototypes of sustainable ways of living, organized by people who have moved outside mainstream models of production and consumption (Manzini 2005) or organized by DESIS Labs themselves (Corubolo & Meroni, 2015).

This study presents an analysis on how service design is being practiced in DESIS Network in its relation to social innovations.

## Theoretical framework

### Social Innovation as service innovation

Social innovations were defined as ‘new ideas (products, services and models) that simultaneously meet social needs and create new social relationships or collaborations. In other words, they are innovations that are both good for society and enhance society’s capacity to act’ (Murray et al. 2010: 3). Such innovations are developed by public, private, or third sectors, as well as by users and communities. However, ‘some innovation developed by these sectors does not qualify as social innovation because it does not directly address major social challenges’ (Harris & Albury 2009: 16). That is, as Djellal and Gallouj (2012) argue, social innovations change the way consumers’ needs (functions) are satisfied, in that they entail new services that have been developed by transitioning from formal (i.e. services provided by an external service provider) to what the author calls ‘informal’ modes of satisfaction”.

Djellal & Gallouj (2012) open a call to stimulate “a dialogue between social innovation studies and service innovation studies.” (p.129) to bridge the “mutual ignorance” between the scientific perspectives on “the economics and socio-economics of services” and to meet the challenge of “making ‘invisible innovation’ visible” (Franz et al. 2012, p. 9).

The focus on ‘invisible innovations’ has been one of the key aspects on design for social innovation theory and practices, and convergent with the “silent” type of design suggested by Gorb and Dumas (1987), which is practised by groups of people, i.e., non-expert designers (Manzini, 2015). The ‘design action on existing social innovations is to consider each case as a service, that may be designed by expert designers, but also by non-expert designers. When non-expert designers are involved, design activity is considered “a multi-faceted cognitive skill, possessed in some degree by everyone” (Cross, 2009, p. 115).

The founder of DESIS Network stated a definition of design for social innovation as the basis for DESIS lab activities “everything that expert design can do to activate, sustain, and orient processes of social change towards sustainability.” (Manzini, 2015, p. 62).

This definition of (design for) social innovation is convergent with Cajaiba-Santana (2014, p. 44) who states that (a) social innovations are defined as “new ideas manifested in social actions leading to social change and proposing new alternatives and new social practices for social groups” (Cajaiba-Santana, 2014, p. 44).; and (b) social innovations are non-material: their material outcomes are solely a supplementary result, and they focus not on needs but on asset building’ (Neumeier, 2012 p. 55).

The processual character of social innovation brings DESIS Network activities in services closer to the definition of designing for services, which, for Kimbell (2011) “is seen as an exploratory process that aims to create new kinds of value relation between diverse actors within a socio-material configuration” (p. 42). The author, echoing Manzini (2011), suggests that “what is being designed is not an end result but rather a platform for action with which diverse actors will engage over time” (Kimbell 2011 p. 45). This is the “enabling” solution definition (Manzini, 2015), extensively developed by the DESIS Network founder, which includes different features (an assemblage of different services, places, tools) and co-design tools and methodologies to conceive and develop these solutions in a collaborative way (Manzini, 2015, p.168).

A relational approach to social innovation is adopted by DESIS with the recognition of the interlinked dynamics between different elements: socio-material context, institutional dynamics, network formation, new social relations (Haxeltine et al. 2017, p.9) that are considered in the process of designing for services. It results that definitions used by DESIS members as “collaborative services” and “relational services” (Jegou & Manzini, 2008 and others) are, in fact, enabling solutions, designed to nurture and supports social innovation processes, with particular focus in the interpersonal relations between participants.

## Social innovations: scaling processes and systemic change

Scalability is a key aspect of the practice of design for social innovation, and framed among the aims of DESIS Network itself, that uses “design to trigger, enable and scale up social innovation” (DESI website, 2014), because “to effect large system change, ‘niche’ or local-level innovations must span spatial and institutional scales to achieve broader systemic impact” (Riddell, Moore & Vocisano, 2015, p. 67).

Literature defines three levels of scalability for social innovation: *scale up*, *scale out* and *scale down* (Westley et al. 2014, Riddell, Moore & Vocisano 2015) as presented in figure 1.

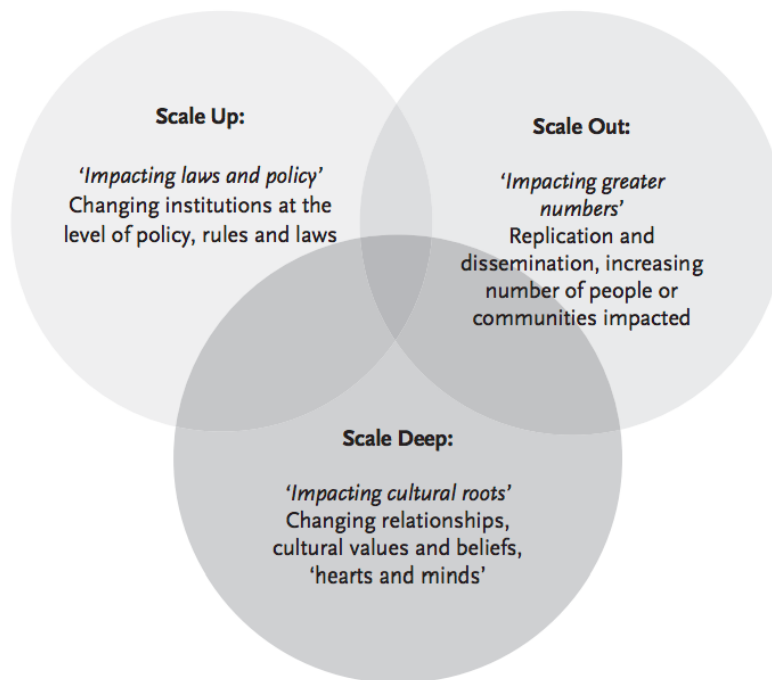


Figure 1: Scaling out, scaling up and scaling deep for social innovation (from Riddell, Moore & Vocisano, 2015)

Westley et al. (2014) described two kinds of scaling: ‘scaling out’ and ‘scale up’ as synthesized and complemented by the concept of ‘scaling deep’ by Riddell, Moore & Vocisano (2015). These authors state that the process of scaling social innovations to achieve systemic impacts involves these three different types of scaling and “large systems change (LSC) is likely to require a combination of these types” (p. 69). The table 1 below presents the types of scaling and their main strategies

Table 1: Types of scaling and their main strategies  
(Riddell, Moore & Vocisano, 2015, p. 67)

	Description	Main strategies
Scaling out:	<b>Impacting greater numbers.</b> Based on the recognition that many good ideas or initiatives never spread or achieve widespread impact	<b>Deliberate replication.</b> Replicating or spreading programmes geographically and to greater numbers while protecting the fidelity and integrity of the innovation <b>Spreading principles.</b> Disseminate principles, but with an adaptation to new contexts via co-generation of knowledge, leveraging social media and learning platforms: 'open scaling'
Scaling up:	<b>Impacting law and policy.</b> Based on the recognition that the roots of social problems transcend particular places, and innovative approaches must be codified in law, policy and institutions	<b>Policy or legal change efforts.</b> New policy development, partnering, advocacy
Scaling deep:	<b>Impacting cultural roots.</b> Based on the recognition that culture plays a powerful role in shifting problem-domains, and change must be deeply rooted in people, relationships, communities and cultures	<b>Spreading big cultural ideas</b> and reframing stories to change beliefs and norms. Intensively share knowledge and new practices via learning communities, distributed learning platforms and participatory approaches <b>Invest in transformative learning,</b> networks and communities of practice
Cross-cutting		Seek alternative resources Build networks and partnerships Broaden the problem frame

The use of these terms is under discussion. For example, the term 'scaling up' has been used extensively in the social innovation literature, but Haxeltine et al. (2015b) for example argue that it may be misleading: "Firstly it implies a solid hierarchical structure, when actually scale in the social context is co-produced and there are opportunities for social actors (e.g. strategist in social innovations) to resist or subvert or otherwise 'play' with the ways that 'scale' relationships are co-produced. Secondly, in processes of 'scaling up' the social innovation itself may be altered in significant ways. Indeed some social innovations may perceive this as a threat and resist 'scaling up' activities, while others may realise too late that they have lost something important in the process of scaling up. We can further hypothesise that some social innovations may realise the dangers of 'scaling up' processes but find ways to 'subvert' them" (p.77). Other terms have also been reframed or criticised. However, for this study, these definitions are useful to frame a preliminary analysis on how DESIS Network is relating design knowledge and practices to social innovation processes.

## Methodological framework

This study was carried out within the framework of the TRANSIT Project (Transformative Social Innovation Theory – EC-FP7) project which aims to study how social innovation can bring about empowerment and societal transformation. It included an exploratory research and an embedded qualitative in-depth case study conducted over DESIS Network and four of its Labs between 2014-2016. Specifically, in this study, one of the DESIS Network projects was selected and constitute the main unit of analysis.

The data collection encompassed: semi-structured interviews with three members of 4 (four) DESIS Labs (Italy, Brazil (2) and Portugal); participant observation; document review: the main writings of the core team and secondary sources (until 2016). It also included a literature review about service design for social innovation practices in DESIS Network.

The data collected was interpreted in what regards its consequences in service design and in social innovation processes, through the theoretical framework adopted, in which three levels of scalability for social innovation were defined *scale up*, *scale out* and *scale down* (Riddell, Moore and Vocisano, 2015), as described in the table 1.

## Results

This study frames the beginnings of DESIS Network on 2007, when the book “Creative communities” (Meroni, 2007) was published. It was followed by the book “Collaborative Services” (Jègou & Manzini, 2008), both results of the research EMUDE – Emerging User Demands for Sustainable Solutions, coordinated by Ezio Manzini at Politecnico di Milano. This project gathered a network of design schools to develop a design approach to social innovation and inspired the foundation of DESIS Network, which was informally established in 2009 (Cipolla et al., 2015a).

The study also considers the difference between the *process* dimension and the *output* dimension of social innovation. Hubert et al. (2010) propose that the process dimension “implies that new forms of interaction are established” and the output dimension “refers to the kind of value or output that innovation is expected to deliver: a value that is less concerned with mere profit, and including multiple dimensions of output measurement” (p.26). The analysis placed its focus in the *output* dimension, which is related to services in terms of what designers can observe (in existing social innovation processes) or enable (in new social innovation processes). The next lines present how members of DESIS Network are considering the new interaction patterns present in social innovation cases as services and embedding it in the service design field (as theories and practices).

### DESIS theoretical approach to service design: *scaling deep* social innovations

Studies and projects on design for social innovation and sustainability were influences on the development and consolidation of service design research (Sangiorgi, 2011).

Social innovations are expressions of socially diffused creativity (Meroni, 2008) and a society in which “everybody designs” (Manzini, 2015) that gets expressed in services developed by grassroots communities. Therefore, service design research that focuses on services investigates their specific features. DESIS Lab members have identified in social innovations the constitution of new service models, with interactions based on local cultural values and social networks. This work pulled together research activities and projects that, for example, coined the terms collaborative (Meroni, 2007; Jegou & Manzini, 2008; Manzini &

Stazkowski, 2013; Manzini, 2015), relational services (Cipolla & Manzini, 2009) and Community Centred Approach (Meroni, 2008).

The first notion came to light when research on design for social innovation (Manzini, 2007) identified types of service interactions that have been called collaborative services in social innovation cases (Manzini, 2008). The term ‘collaborative’ emerged from the fact that the qualities of interpersonal interactions were far removed from those of a delivery approach to services in which participants, including frontline employees (representing the organisation) and clients/users, have predefined roles (i.e., employees are active; clients are passive). These social innovations deconstructed the delivery approach to services, creating new collaborations and transforming all participants into active co-producers of commonly recognised benefits. They also gave rise to a special form of interpersonal interaction in services labelled as ‘relational’ services (Cipolla and Manzini, 2009), where participants needed not only to be operationally active and collaborative, but also intentioned and willing to relate to, and interact with, one another in an intensely interpersonal way. Based on Buber’s (1996; 2006) theoretical framework, these findings led to the definition of experiential versus relational services as polarities by which to identify the interpersonal qualities of services.

Meroni (2008) framed the ‘Community Centred Approach’, on which is proposed that the focus of attention shifts from the individual user to the community as the new subject of interest for design practices. Sangiorgi (2011) cites Meroni (2007) when observes that a “shift seems to be happening as services are no longer conceived of as an end in themselves, but are increasingly considered as an engine for wider societal transformations. Services are less discussed as a design object, but now more as means for supporting the emergence of a more collaborative, sustainable and creative society and economy. Particular emphasis has been given to collaborative service models and co-creation” (p. 30).

The analysis of the services produced by groups and communities in social innovation processes were not extensively covered by the service management and service marketing researcher activities. Scholars working in the “basis of the pyramid” (Gebauer & Reynoso, 2013) paved the way for studies on service innovations in emerging countries (Reynoso et al., 2015) and both began to consider the emerging social dynamics and new interactions patterns embedded in social innovations with focus on these countries.

DESIS Network members are highlighting emerging service architectures, developed by social innovators, and bringing them to the development of the service theories. They are also contributing to the development of service design, by embracing interactional patterns and dynamics from social innovation cases that are driving the development of specific approaches (e.g. Community Based Design) or the inclusion of unexpected theoretical frameworks (e.g. Martin Buber) in the effort to define what may be the specific design approach to services (Cipolla, 2004, Cipolla and Manzini, 2009).

These developments indicate how members of DESIS Network are contributing to scaling *deep* social innovations by bringing them to compose the design culture and by making ‘invisible innovation’ (social innovations) visible (Franz et al. 2012) to service theories. It is shifting problem-domains in the service sector and is recognizing in its service theories that change “must be deeply rooted in people, relationships, communities and cultures” (Riddell, Moore & Vocisano, 2015, p. 67).

DESIS is also investing in “transformative learning” (Riddell, Moore & Vocisano, 2015, p. 67): the network is composed by design schools that diffuse the knowledge produced, which is continuously embedded and reinterpreted in the DESIS Labs. The Labs are composed by teachers and students, that create new ideas inspired by new service theories and social innovation cases, which include the development of new service ideas (Manzini and Stazkowski, 2015), visions and storytelling (Bertollotti, et al., 2016).



## Service Design practices in DESIS: scaling *out* social innovations

Perspectives on the design of collaborative services, with different levels of interpersonal relational qualities between participants, have been explored by the DESIS Labs, applied to issues such as migration, to foster new relations between migrants and local communities (Pillan & Suteu, 2015) to avoid exclusion (Hillgren, 2015); new housing solutions, based on new collaborations between residents (Ferri & Condit, 2008; Staszkowski, Brown & Winter, 2015), urban planning, to promote a new identity of the neighbourhood and to strengthen the social fabric (Jégou et al., 2015), aging, to promote new relations between older people themselves and other actors to improve the quality of later life (Lee and Moore, 2015); food to foster direct relations between consumers and producers in new food chains (Meroni, Simeone & Trapani, 2008; Baek, Meroni & Simeone, 2014); and the development of new relationships between people themselves and the state (Manzini & Staszowski, 2015).

All these different projects and activities have taken the form of experiments or effective services, that nurtured the service design theories developed by DESIS members themselves in a practical way. However, one project in particular, is running long enough to exemplify how a Lab operating under the DESIS approach can scaling *out* social innovations through service design and foster system change.

The example is the development of co-housing in Italy. Politecnico di Milano (a research group in a previous version of the Polimi DESIS Lab) identified cases in the housing sector, in the form of cohousing initiatives. The Project “Cohousing.it”, was set up in 2007. At that time, there were no diffused cohousing initiatives in Italy and the challenge was to design a service – inspired in the process and interpersonal interactions of existing co-housing initiatives - to promote the practice. Manzini (2015) described the process: “starting up and co-designing process have been enabled by creating a dedicated digital platform and a set of services (to support the meetings of the potential cohousers, the building of the community, and the co-designing of services to be shared)” (p. 57). The service enabled the first co-housing initiative in Italy (Milan) in a process started in 2007.

Seven years later it was possible to observe for this study (Cipolla et al., 2015a) and confirm that cohousing was widespread in Italy, with many different actors involved, including those from the industrial sector that recognised the emerging demand for products and appliances for shared services. The co-housing principles were being also used to solve challenges in the social housing sector in Italy. The role of the Italian DESIS Lab, as part of the international network, in diffusing co-housing initiatives was highlighted: “Certainly the fact that it is an international network gives the possibility of dissemination, the possibility to get to know other similar opportunities around the world, this is a great advantage. If you need to know who’s doing the same things, or similar things that can be integrated” (Promoter of co-housing initiatives in Italy, interview 7, quoted in Cipolla et al., 2015a). This same partner indicated that service design activities in this field would be increasingly needed; for example, there is significant work (and opportunities) at the local level, to set up a whole new set of services to reinforce the urban social fabric. The focus on the local level, specifically on the neighbourhood, was highlighted (Cipolla et al., 2015a).

These developments indicate how a member of DESIS Network contributed to scaling *out* a social innovation at a local level by recognizing the role of the importance of design thinking and practices “to spread social innovation initiatives and achieve widespread impact” by the co-design of a collaborative service that “disseminate the principles of the original idea but “with an adaptation to a new context via co-generation of knowledge”. This process included also the development the Cohousing.it as a “distributed learning platform” (Riddell, Moore & Vocisano, 2015, p. 67) that helped the communication of the cohousing idea in Italy.

An essential aspect in scaling *out* social innovations is a careful consideration on how to protect the “fidelity and integrity” (Riddell, Moore & Vocisano, 2015, p. 67) of the original idea, and this was the case in the replication process in Italy as fostered by the Italian DESIS

Lab. A key aspect of the DESIS Network process is to learn about the interpersonal relational qualities from social innovations cases and develop solutions that spread these qualities. The DESIS Lab co-designed a process and tools for community building and co-design activities as a service to enable participants to define their co-housing condominiums and related shared services and to form a local community. It is not possible to affirm in this study if the interpersonal relational qualities have been effectively preserved, but it is acknowledged the importance given to this aspect in the design process.

Manzini (2015), DESIS Network founder, synthesizes the lessons learned in the co-housing case, as designed by the DESIS Lab, and the design role in the process: “to promote social innovation, design experts must use their design skills and competencies to recognize promising cases when and where they appear and to reinforce them. That is, to help them to be more accessible, effective, lasting, and replicable” (p. 58).

## Conclusions

The DESIS Network members uses design thinking to scale *out* social innovations by understanding social innovations as services and using design thinking to promote their dissemination as new service models, such as Cohousing.it, and to scale *deep* social innovations through the service theories derived from this process by proposing a service theoretical framework that works to change relationships and cultural values, as social innovations do. This includes:

- Rethink and explore new service interactions, by designing for services based on an active and collaborative role for participants to co-produce a commonly recognized result;
- Contribute to the development of service design by developing theoretical frameworks able to cope with the transformative values and interpersonal qualities of social innovations processes;
- Foster transformative learning, by embedding all this knowledge in the design practices and design education in the DESIS Labs.

DESIS therefore already have experiences in scaling *out* and *deep* social innovations through service design.

The activities of DESIS members in scaling *deep* social innovations through service design is testified by different publications and is more intensive, considering the characteristics of the network itself, composed by design schools involved in research and educational processes, as mentioned in the previous paragraphs.

Scaling *out* social innovation ideas happens through present and past experiences in the more than 40 DESIS Labs, but the impact is still to be analysed and verified. However, DESIS Network itself works to support this process by fostering the exchange of knowledge between the Labs and by providing international reputation (as members of a large international design network) to the local Labs.

A challenge for DESIS Network is to explore how its service design practices could increasingly interact and influence scale *up* processes and the transformative changes they carry out. An evidence was found in Manzini and Stazkowski (2015), who have explored the intersection between design, social innovation and public policies, including implications and recommendations for policymakers, derived from the service design practices described. This study traced some evidences of effective impact of the activities of a DESIS Lab in local policies, but this is still to be better investigated.

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# Learning to design in public sector organisations: A critique towards effectiveness of design integration

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## Abstract

There has been a surge the last decade in the public sector to strive for transformation processes driven by design, to integrate design in the organisations and develop design capability and design culture. We draw on experiences from a range of projects, that are summarized in the form of exemplars. As analytic lenses, we use two constructivist learning theories, situated learning and socio-cultural learning, with associated concepts. Through these lenses we can show how the learning processes in the projects we have followed is not enough to drive integration of design or develop design capability. We can also show that the role of management practices is central to the effect of these learning processes. We can also show potential consequences of relying on individual's knowledge in consecutive learning processes. We conclude that, from a situated and socio-cultural perspective, there are important challenges for organisations that wants to develop their design culture, and challenges for management to take on, to achieve the integration of design and an increased design capability.

**KEYWORDS:** design capability, learning theory, situated learning, socio-cultural, experiential learning, communities of practice, design culture

## Introduction

The interest to integrate design in public organizations, to develop design culture and transfer design knowledge and practice is blooming. Over the years, we have participated and followed several cases where organizations in different ways have started to develop their design capability (Wetter Edman & Malmberg, 2016, 2018; Malmberg, 2017; Malmberg & Holmlid, 2014, 2015; Lantz & Holmlid, 2010; Johannesson & Holmlid, 2013; Holmlid, 2008a, 2009, 2015). However, a reoccurring challenge we have seen in many of the cases, as well as encountered in dialogues about other similar projects, is the difficulty to disseminate the practice of working with design within the organization, or to develop the design culture (Julier, 2006). Although individuals in an organization who have taken part in

initiatives to integrate or learn design, has experienced design as a valuable contribution to the organizations knowledgebase and toolbox, many of these initiatives end up as one-off projects (Wetter Edman & Malmberg, 2016; Malmberg 2017) or the design knowledge is integrated but only within the group the individuals belong to (Malmberg, 2017; Malmberg & Holmlid, 2015). The same seem to be true for design projects that does not have the intent to build design capabilities (Yu & Sangiorgi, 2017)

Our studies have taken a learning perspective, earlier based in organisational learning and dynamic capabilities. Design culture, as a fairly recent concept, can be interpreted in several manners (Julier, 2006), of which one refers to the designer as an individual and him/her being a carrier of design culture (Manzini, 2016), and another refers to design culture as that which makes design as an expert, as well as diffused practice, valued and possible within an organisation (Julier, 2006). Some studies on design management are related to the latter aspect, highlighting design as being part of the operating core (Holmlid, 2008a, 2008b, 2009), as well as being an issue for management and leadership (Cooper et al., 2009). While not being the same as design culture, organisational capabilities for design seem to be closely related to some conceptions of design culture. Some studies suggest that design culture is characterized by its ability to change dominant enterprise cultures, and drive organisational change (Julier, 2006), and relates to recent work on institutional change in service design (Wetter Edman et al, 2017). In a sense that is closer connected to management and organisational learning, one way to understand how design culture works, is through dynamic capabilities and learning processes. The culture of an organisation is expressed, reflected and enacted through its structure and capabilities, and the structures and capabilities direct, engage and limit the culture.

A typical approach to integrate design has been to transfer design knowledge through design driven projects in which personnel participate and learn design methods and mindset through practice. The SPIDER project (Supporting Public Service Innovation using Design in European Region) (Swiatek, 2016), Förändra Radikalt (Radical Change) (Lindström, Fogelin, Feuk & Eriksson, 2015) and Innovationsguiden (the Innovation Guide) (innovationsguiden, n.d<sup>1</sup>) are examples of this approach. Another approach to integrate design has been to develop design labs within or in relation to an organization. A design lab holds design resources in the form of individuals with design knowledge and experience. The design lab collaborates with and support the organization as they explore the potential contributions of design and utilize design approaches (Malmberg, 2017). A need for collaborative platforms, increased understanding of user needs and desires, as well as the need in the organization to develop competence and leadership that enable development and innovation, are often stated as the motivations and foundation of these labs (Hillgren & Szücs Johansson, 2015). Mindlab in Denmark (Bason, 2010), the UK policy lab (Kimbell & Macdonald, 2016; Bailey, 2016) in the UK, Service Innovation Lab Kent in England, and Experio Lab in Sweden (Hillgren & Szücs Johansson, 2015) are some examples of design labs aiming to integrate design within a public sector context. Design driven projects with employees has also been set up by design labs in their efforts to integrate design (Hillgren & Szücs Johnsson, 2015).

The design driven projects are often facilitated by professional designers (see for example Swiatek, 2016 or Lindström et al., 2015) and participants can come from different organizations of different parts of an organization with a challenge that they want to work on. Through working with their challenge, the participants experience how to work with a design mindset and tools with the support of the facilitator in an action learning set up (Wetter Edman & Malmberg, 2016). A preconception in this set up is that design skills and attitude is transferable directly through practical application, but what pieces of knowledge that is transferred is rarely discussed (Wetter Edman & Malmberg, 2016; Holmlid, 2015). Little attention has been given to how knowledge transferred though projects of this

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<sup>1</sup> [www.innovationsguiden.se](http://www.innovationsguiden.se) viewed: 2016-11-08

character is spread, integrated and used after the design driven projects have ended (Malmberg & Wetter Edman, 2016; Malmberg & Holmlid, 2015).

The set ups has proven successful in creating an understanding for the user-centered mindset and showing participants what value the design approach can contribute but they give little support for reflection about how it can be applied further in new projects (Malmberg & Wetter Edman, 2016; Malmberg, 2017). This implies a large responsibility for the dissemination of design in the organization is left on the participating individuals, without giving them support or guidance on how to do it (Malmberg, 2017). This poses a problem as even though many participants leave the projects feeling inspired and want to spread the use of design in their organizations, they do not feel that they are able to do so in other ways than being an advocate for design (Malmberg, 2017).

In this paper, we provide a theoretical foundation to understand challenges of integrating design in organizations through a learning perspective, with relevance for development initiatives aiming for successful integration of design in an organization.

## Theoretical foundation

In order to understand the focus on the individuals as learning subjects in the organisations, we will introduce two constructivist learning perspectives.

### Situated cognition perspective

The theory of situated cognition (Brown et al., 1989) claims that knowing is inseparable from doing. In a situated cognition perspective knowledge is situated in activity. Situated activities are bound by physical, social and cultural contexts. A simplified way of understanding knowledge under this condition, is that knowledge is not stored and accumulated in a hypothesized “mind”, but knowing is exhibited in action (see e.g. Schön, 1987).

Within this perspective, Lave and Wenger (1991), developed what is usually referred to as situated learning. Situated learning builds on the central concept of a community of practice, which often refers to a group of people sharing a profession, with a vocabulary, tools, organizing principles, norms etc. In Lave & Wenger (1991) legitimation and participation are central to being part of a community of practice, and becoming a member of a community of practice is initiated through Legitimate Peripheral Participation, LPP. Typically, this means that a learner participates in the simpler tasks of the community, and in tasks that are driving essential learning as well as not putting successful outcomes at risk. In situated learning, it is viewed as important that learning happens in the context where the learned outcome is meaningful, and where invariants and variants of situated activities can be made part of learning (Barab et al., 1999).

The situated learning perspective also assumes a view of an organisation as consisting of individuals being part of one or more communities of practice, engaging actively in situated activities to achieve outcomes and learning. As a development of communities of practice, Wenger (1998), has suggested that the structure of a community of practice can be described with three interrelated concepts, mutual engagement, joint enterprise, and shared repertoire. Individuals in an organisation thus can participate fully and peripherally in different communities of practice.

### Socio-cultural perspective

In a socio-cultural perspective on learning, Vygotsky (1980) has played a central role. He developed the concept Zone of Proximal Development, ZPD, as a means to understand how learners develop knowledge through participation in learning activities. The Zone of Proximal Development is defined as those things that a learner cannot do by him/herself, but can do with the assistance or guidance of a more capable peer. By doing these things



under guidance, the learner develops the necessary skills and knowledge to achieve those things by him/herself later. In pedagogics, this assistance is sometimes referred to as scaffolding (Wood et al., 1976).

Given a more capable peer, and some structured learning process, there is assumed a set of important differences. The 1<sup>st</sup> difference concerns what the learner can do, and the goal of what the learner should be able to do after learning. That is, it is assumed that the learner cannot do the things that are being learned. The 2<sup>nd</sup> is the difference between the learner and the more capable peer in terms of what they can do. That is, whether the more capable peer is more capable than the learners. The 3<sup>rd</sup> concerns the difference between what the more capable peer can do and what the learner should be able to do after learning. That is, whether the more capable peer is more capable within those things that is going to be learned. The 4<sup>th</sup> difference concerns what scaffolding the more capable peer can create in relationship to what the learner should be able to do after learning. That is, does the more capable peer command the area of development in such a way that s/he can act as a guide or instructor for learners to pass through the ZPD.

## Method

During the last ten years we have participated in numerous projects where public sector organisations have engaged themselves in, or wanted to engage in, introducing or integrating design into their development work. The range of organisations encompasses public authorities, regional organisations, as well as municipal organisations. During the last five years the number of projects and initiatives have surged, and the main approach of the organisations has been to use and apply design in specific development projects.

We have performed interviews, made participant observations, and studied outcomes and documents. In all the projects we rely on for this study, designers, service providers, service developers, stakeholders, customers and users have been involved in the projects at least under informed consent.

Illustrative case descriptions, exemplars, will be used as the basis for the analysis. Using exemplars resonates methodologically with what is suggested in Holmlid & Blomkvist (2014), where a service archetype is used as a prosthetic tool for reasoning, instead of a specific empirical case. In this specific study, we have identified archetypical situations and events based on reoccurrence across the projects, and made the exemplar descriptions based on these archetypical situations.

## Exemplars

From the projects we have been part of and followed over the last ten years, we have identified four archetypical situations that describes most of the projects:

- 1) design training of individuals,
- 2) design training of groups,
- 3) design training with professional designer as facilitator, and
- 4) design training with non-designer as facilitator.

The projects we have been part of and followed have mainly focused on training the design-novice individuals in methods for user-centred design, a user-centred mindset and creating an awareness of how design can contribute value with its user-centred approach (Malmberg, 2017; Malmberg & Holmlid, 2014; Wetter Edman & Malmberg, 2016, Wetter Edman & Malmberg, 2018). Many projects aiming to achieve integration of design by training design-novice individuals also use some variation of an experiential learning set up where process, methods and mindset is trained through practice with the support of a facilitator (Malmberg, 2017).

### **1. Individual design training**

The first exemplar is characterized by a set up where design-novice individuals from different organizations or different parts of an organization, are trained in the use of design methods within a given design-process framework. The training is individual in the sense that the participants represent, as individuals, their organization or unit. In the teams formed for training purposes the team-members are a mix from different organizations or different parts of an organization. This implies that members within a team do not always know each other from before or share a frame of reference related to their everyday practice. The team members might also have different prior knowledge and perspectives coming into the design training. An effect of this set up is that once the participants are back in their everyday practice they will each be the sole bearer of the methods and mindset that have been taught through the training.

### **2. Group design training**

This exemplar is characterized by that it is groups rather than individuals that take part in the training. There may be a single unit from an organization or several units from different organizations taking part of the training, but they do so as different groups defined by the individual participants shared everyday practice. For example, the personnel from the community health centre make up one team and the personnel from the local library make up another team. This implies that the members of each team know each other from before and share a frame of reference, prior knowledge and perspective unlike in the prior described exemplar. With this set up there are also several individuals that will be bearers of the design methods and mindset once the groups are back in their everyday practice.

### **3. Design training with an expert designer as facilitator**

What characterizes the third exemplar is that the design training is facilitated by what Manzini & Coad (2015) would call an expert designer. Someone who have a design education or has built up an extensive design experience through working with design and designers. A professional designer has an understanding of both the methods of design and the mindset and methodology behind them. This understanding supports the decision of what methods and tools that are suitable in a project and allows the designer to make adjustments to methods depending on the characteristics of the project. In such a training set-up the design novice participants are guided through the design process and the training by someone that is at the core of the community of practice that they are themselves entering. Someone who could explain the methodology behind methods and tools that are practiced in the training. Although, as mentioned, the training initiatives usually focus on the practice of methods and rarely go into the methodology.

### **4. Design training with non-designer as facilitator.**

The final exemplar we have seen is a set up where the role of being facilitator and trainer is taken on by someone who is not a trained expert designer. The facilitator in these cases is typically someone who has taken part in an earlier design project and experienced the value of the design approach and wants to disseminate it further. The facilitator is a more capable peer than the individuals participating in the training program but is not at the core of the design community of practice but may share the participants' community of practice.

	Group design training	Individual design training
Design training with an expert designer as facilitator		
Design training with non-designer as facilitator		

### A small summary on exemplars

The exemplars highlight certain aspects of the actual projects, however, many projects, albeit being archetypically recognized in one of the categories, may also exhibit aspects from the other categories.

Going beyond the categories suggested here, the following generic aspects may be relevant to use in future analyses:

- Who is performing the training (e.g. what is this person's education, what practice is the person part of, what role does s/he have in the organisation, what direct and indirect relationship/s does s/he have to the participants)
- What is the framing, content and topic/s of the training program (e.g. mindset, methods, tools, application area, rationale for methods)
- Who is participating in the training program (e.g. what is this person's education, what practice is the person part of, what role does s/he have in the organisation, what direct and indirect relationship does s/he have to others participating in training)
- Where the participants come from (e.g. what part of the organisation, if they come from different, similar or same organisation/unit as other participants)
- To where they go back (e.g. what part of the organisation, if they go back to different, similar or same organisation/unit as other participants, if they go back to the same, similar or other organisation/unit)

This is not meant to be an exhaustive list of aspects, we expect that other aspects are present in the projects we have been following, and that other projects may add to such a list.

## Discussion and analysis

A developed understanding of the individual perspective will be grounded in the exemplars based on the theoretical perspectives introduced. This will allow us to take seriously that it is individual learners that often are put center stage.

### A view from the situated cognition perspective

The situated cognition perspective is prevalent in all four exemplars. Several of the initiatives are setup so the learners become *legitimate peripheral participants* in design based community of practice during a development project. By working inside a defined process, under the auspice and coaching of a trained designer, using described design techniques, learners are given the possibility to have an experience of being part of a design process and doing some design work.

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In the 1<sup>st</sup> kind of exemplar, the learner is invited into a learning process, where s/he becomes *legitimate peripheral participant* in a specific development practice. This development practice is defined by the development process employed, and the knowledge of the instructors. When returning from learning, the learner is back in his/her ordinary community of practice, often being the only person with the design learning experience.

In the 2<sup>nd</sup> kind of exemplar, when returning to the ordinary business, the participants may form a community of practice around what they learned. What they actually learned is important in this perspective, because this defines what they themselves later can take on a role as instructors for.

In the 3<sup>rd</sup> kind of exemplar, the learning is structured so that the learners become *legitimate peripheral participants* in a design community of practice during a development project. By working inside a defined process, under the auspice and coaching of a trained designer, using described design techniques, learners are given the possibility to have an experience of being part of a design process and doing design work, and to learn from this experience. It is common that the instructors and learners focus on the tools and techniques, and several of the guiding principles that are part of the design community of practice is not made explicit. This is partly due to the pre-structured development process, and partly due to the way in which the trained designers structure the learning process. That is, what situated activities that the trained designers allow the participants to do and learn.

However, in the 4<sup>th</sup>, the person being the instructor, is not him/herself full participant in a design practice. S/he may have been, in earlier projects, a legitimate peripheral participant in a design community of practice. The community of practice that this person is a part of, may however, have integrated the earlier learning from design into his/her community of practice. An effect of this on learning to use design, or to integrate design in an organisation, is that it will be the knowing of the instructor gained as a legitimate peripheral participant, and the possible integration of that into another community of practice, that will be the framework for continued learning and integration in the organisation.

The action learning approach that is commonly used in all four exemplars requires of the learner to learn by being part of a design situation. The learner is tossed directly into what is presented as a full design process with activities and methods. This is in stark contrast to a situated learning approach, where the learner is introduced into a community of practice, beginning with limited tasks, that will drive essential learning without risking successful outcome. For the action learning based learner, it implies many new things at once for the learner. Some of which may also collide with his/her previous knowledge, practice and culture. This make essential learning, for example understanding the rationale behind the iterative approach or the need to fully understand a problem before looking for solutions difficult to pick up.

### A view from the socio-cultural perspective

The perspective of ZPD come into play mainly through the 3<sup>rd</sup> and 4<sup>th</sup> exemplar. The initiatives focus on learning by doing supported by an overall process, examples, tool descriptions and coaching by a designer. Typically, the content is focused on staff being able to do user research, dare to do prototypes, etc. The learning process, as a whole, is scaffolded by the overall process and the tool descriptions. Scaffolding is a pedagogics concept, and being aware, as a more capable peer, that one is always scaffolding learners, is important in order to create scaffolding for the learning outcomes.

In the 3<sup>rd</sup> exemplar the learners are guided by a trained designer. This means that the instructor is a more capable peer in a design mindset, design methodologies, specific methods and tools. In most of the cases, the instructor is a more capable peer in the specific

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design process and the associated tools used in the development project. The ZPD thus created can be on any of those aspects that the instructor is a more capable peer in. However, in most cases, the predefined development process, and by choice of the instructor, the ZPD is directed to be on the design tools and techniques, such as interviewing users or using a certain template to document the process. Moreover, the expert designer is seldom part of the learners home-organisation, and will therefore not contribute to scaffolding for continued learning or knowledge integration in the future.

In the 4<sup>th</sup> exemplar the learners are guided by someone without formal design education. The instructor has either joined a specific training program to run this kind of processes, but more often the instructor has been part of one of the processes him/herself earlier. Given that most of the learning, even with trained designers, focus on tools and techniques, the more capable peer takes on two forms.

The first is when the instructor is a more capable peer on the tools and techniques, that which s/he as a legitimate peripheral participant was allowed to do. This, then, will be what the peer can do, that the participants cannot. Unless the instructor earlier also learned some of the rationale and framing issues, learning risks focusing only on being able to use the tools and techniques as is. A lot of the guiding principles that a trained designer would use in the training process, is not part of what the more capable peer can do, and not part of choices being made in the development process. As pointed out above, much of the guiding principles of the design community of practice are not made explicit, thus impeding the ability for a non-designer facilitator to create a ZPD around this.

The second possibility is that the instructor has integrated the tools and techniques into his/her own practice. Given that the instructor structures learning in such a direction, the learners may work with a ZPD that is defined by integrating design tools and techniques in another practice. This alternative is seen much less often than the first alternative.

There is a paradoxical twist in between the 3<sup>rd</sup> and the 4<sup>th</sup> exemplar. In the 3<sup>rd</sup> exemplar there is an expert designer engaging with learners, that may or may not have knowledge about the home-organisation. It is rare that the expert designer is also part of the home organisation of the learners, so the expert designer has few possibilities to structure any scaffolding in the home organization, should it be for continued learning for the individual, for integrating design into the practices of the organisation or creating a design culture. In the 4<sup>th</sup> exemplar there is an individual with good knowledge of the home-organization, but with limited understanding of design beyond the methods and techniques. This diffuse designer have good possibilities to structure scaffolding for integrating new knowledge, but the knowledge that the individual can act as a more capable peer of, is shallow. Either or, design practice will be hard to integrate.

## From the individual perspective to integration of design

When looking at integrating design into an organisation as a cumulative process, where there are sequences of situated learning, based on the learners that have participated, a set of interesting developments should be taken into account.

### **Forming or reforming communities of practice:**

- A single learner integrates ways of working into their own practice, and help other learn how this enriches their own practice. However, most training programs does not focus on how the learners could expand their own practice with design.
- Single learners across the organisation form a community of practice based on the knowledge they gained. This means that they are forming a new practice around the peripheral practice they learned. However, most training programs do not highlight this organisation wide community of practice, and that it is formed around a peripheral practice.

- A single learner integrates ways of working into their own development practice, and apply this when being engaged in development work. However, most training programs do not take as a starting point what development practices the learners are engaged in, nor focus on how the learners can take on a role in the development practices of the organisation.

All of these can have consequences not only on those practices, but also on what design practice is. It is similar to the idea of diffuse design, and it will require of designers, as a community of practice, to acknowledge and appreciate practices within which design has been integrated in this specific way.

#### **Turning learners into experts:**

- A single learner becomes the local expert and uses his/her knowledge locally. However, the training programs rarely focus on how the learners can use what they learned in their ordinary work environment, mostly on how to use it when developing new ways of working.
- A single learner uses the knowledge gained and invites others into learning about that practice. However, the training programs rarely focus on what the individual need to learn to be able to act as a more capable peer together with their co-workers in their ordinary community of practice. Unless the single learner quickly became a full participant in design practice, the practice others are invited to is peripheral in relationship to the originating design practice

When the single learner tries to act as the more capable peer, this will be done on what has been learned. Given that this learning is described by the tools and techniques, it narrows down what is meant by design seen from a design point of view.

#### **From collaborative learning to learning competition:**

- A learner goes from the learning situation, which is a collaborative learning setting, to a setting where the priority is collaborative work. In this collaborative work setting, there is a competition between many different learning processes, and what is regarded as important to learn.

As an effect, if the learner is engaged in trying to pass the knowledge on, and the next layer of learners does not get a good learning experience, the new knowledge will be outcompeted by other learning processes.

#### **From managing an organisation to managing organisational capabilities:**

Viewing learning from the individual perspective, with the lens of constructivist learning, to build further on the knowledge and reach the aspiration of design integration and transformative processes, it is necessary to also look towards the management practices. Management practices can facilitate with what is mentioned above. Moreover, we may also look specifically at management practices in the light of the training programs

- Line management was involved by allowing the learner to participate in the learning processes. However, the training programs rarely engaged line managers in preparing them for including the new knowledge in the day to day practices.
- Most of the training programs did not involve other management practices, such as innovation and development managers. As the tools and techniques learned are geared towards development projects, it is usually not the role of the line manager to build on such new knowledge. However, line managers are exposed to the effects of the individual learning, and its consecutive effects, whereas development managers are not.
- Managers are future owners of solutions to challenges where design can be applied as an approach to achieve solutions. However, most of the training programs did not include managers to learn how to require design in development, nor to learn how to prepare resources and processes to work with design when being part of development.

A management practice that is engaged in how new knowledge could be applied to daily work as well as to development, is required to not leave the learners alone with their

knowledge, and instead to make the new knowledge matter. A future research study may use the constructivist learning theories as interpretative frames of the consequences for management to take on such an active role in managing capabilities.

Even though our reasoning mainly has been based in a capabilities perspective, and with constructivist learning interpretations, there is a contribution to the ongoing discourse on design culture. Design culture, seen as the provisions for an organisation to have design as an integrated practice, is heavily dependent on how design is presented, understood and nurtured in the multitude of discourses in the organisation. Some of the consequences of the exemplars in this paper, carries a risk working against developing design culture, because of a lack of focus on organisational capabilities. Design culture, seen as carried and enacted by designers, is related to what the diffuse designers enact as being the design culture. The assertion about design culture as being the culture needed for an organisation to change, however, seem to find little support from the exemplars; rather there is a need for a learning or change culture, to which a design culture has specific contributions as opposed to the administrative culture.

## Conclusion

In this paper, we have shown how a focus on the individual is not enough when aiming for developing an organisation's design capability or to integrate design in organisations. We rely on two constructivist learning theories, with associated concepts, to explain how many of the participants in experiential learning programs does not learn enough to drive integration of design, or transformative processes. We also show effects of assuming that the individual will be the drivers for integration of design in the organisations.

It is time to take seriously that one is leaving the learners alone with their knowledge, and that this knowledge is not enough to drive the aspired transformation and integration. It is time for engaged management to take on the challenge.

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# Fostering a sustained design capability in non-design-intensive organizations: a knowledge transfer perspective

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## Abstract

Service designers have been increasingly involved in the transmission of design knowledge to enable non-professional designers to apply design skills and approaches in their work. However, the understanding of the factors that favor the effective transmission of design knowledge is limited, making the goal to achieve a sustainable capability in organizations a challenge. In this paper, the authors adopt a knowledge transfer lens to identify the key determinants in the transference of knowledge in organizations and conduct a preliminary review of how they have been addressed in design research literature. This review revealed an unbalanced interpretation with limited consideration of the knowledge senders' characteristics and contextual factors affecting the dissemination of design knowledge. The paper, therefore, concludes with the proposal of an initial model where the four groups of determinants identified in the knowledge transfer literature (knowledge, receivers, senders, and context) could constitute the core elements for studying this phenomenon.

**KEYWORDS:** service design, design capabilities, design knowledge, knowledge transfer

## Introduction

Service Design is a human-centered, creative and iterative approach to service innovation (Blomkvist, Holmlid, & Segelstrom, 2010; Meroni & Sangiorgi, 2011). The field emerged in the academia during the '90s as design researchers started to discuss services as an object of design (Morello, 1991; Manzini, 1993); some years later the first service design consultancies started to appear in the UK, bringing design professionals at the fore of design research in service innovation.

Lately, the practice of Service Design is not exclusively associated with "design-intensive organizations", meaning design agencies or organizations with more than 30% of their staff being professional designers. A recent trend sees private (Kurtmollaiev, Fjuk, Pedersen, Clatworthy & Kvale, 2018), public (Bailey & Lloyd, 2016; Malmberg & Wetter-Edman, 2016)

and not-for-profit (Nusem, Wrigley & Matthews, 2017) “non-design-intensive organizations” aiming to bring service design in-house as a competence, instead of outsourcing it from consultancies<sup>1</sup>.

In this scenarios, service designers are described as playing multiple roles, including that of “in-house consultants” (Blomkvist, 2015) or “facilitators” (Wetter-Edman & Malmberg, 2016) supporting other people in the organization in doing design work by themselves. This exemplifies a shift in the understanding of design from being dependent on professional designers, to a more inclusive understanding of design as an activity that might be performed by different professionals. Fundamental in this transformation is the focus on transmitting service design knowledge (Wetter-Edman & Malmberg, 2016) to non-professional designers in organizations. The transmission of design knowledge throughout organizations is expected to support non-professional designers to increase their design competences (ability to design), making design an organizational-wide approach

The aim to build design capability in organizations still presents some challenges as designers need to learn how to effectively facilitate the transmission of design knowledge in a sustainable manner (Sangiorgi & Prendiville, 2017).

This article aims to question how design capabilities are developed in organizations, by focusing on the transference of design knowledge from professional designers to non-professional designers in organizations. In particular, the authors adopt Knowledge Transfer studies given their long-term investigations on the determinants of knowledge transference in organizations. In that sense, it is believed that the knowledge transfer lens could be used to inform designers who are taking this new responsibility in organizations. By focusing on this topic, this research also aims at contributing for one of the fundamental service design research priorities proposed by Ostrom, Parasuraman, Bowen, Patricio & Voss (2015) related with encouraging service design (thinking) throughout the organization.

The paper is structured as follows. The first section will clarify the concept of design capabilities reviewing three perspectives with which it has been debated in design research. The article will then introduce the knowledge transfer lens, with a focus on the determinants that can affect the transference process, and compare them with previous research on the development of design capabilities. The last session includes some initial considerations about the contributions of adopting this lens in design research.

## Design capabilities

The concept of design capabilities has been an object of recent studies by some design scholars (Aklin, 2011; 2013; Mortati, Villari & Maffei 2014; Malmberg & Wetter Edman, 2016). In their work they observed how the concept of design capabilities has been used interchangeably with other terms such as design capacity and resources (Aklin, 2011; 2013), or defined in opposite ways (Malmberg, 2017), suggesting the need for an agreed definition (Mortati et al., 2014).

In particular, from the literature, three modes of interpreting design capabilities have been identified: interpretations related to the scope of the design practice, interpretations related to the organizational capacity to integrate and deploy design, and interpretations related to the availability of trained human resources<sup>2</sup>.

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<sup>1</sup> The terms design intensive or non-design intensive have been applied before in relation to industries/sectors (Design Council, 2015).

<sup>2</sup> for a broader analysis on the understandings of design capabilities read Malmberg, 2017

The first perspective considers the scope of the design practices, meaning how and why design has been used within and for organizations, with the elaboration of the theoretical “design ladder” model. Over the years, different versions of these models have been proposed illustrating different levels and modes of using design in private (i.e. the design ladder; Ramlau & Melander, 2004), public (i.e. public sector design ladder; Design Council, 2013) or non-profit organizations (non-profit design ladder; Nusem, Wrigley & Matthews, 2017). The common idea behind these models is that as companies progress in the ladder, the scope of the design practice expands. In this way, the development of design capabilities is related to the scope of design practices in organizations.

The second discussion of design capabilities focuses instead on the organizational capacity to integrate and deploy design. Authors discussing some of these organizational conditions might frame their discussion in terms of design capability (Cantamessa, 1999), but also in other terms such as organizational design capability (Mutanen, 2008). There are also cases in which the capacity to integrate and to deploy design are discussed under different categories. For example, some studies debate organizational capacity to deploy design (actual management of design activities and resources) in terms of design management capabilities (Aklin, 2013; Mortati et al., 2014), and the capacity to integrate design (integration of design activities and resources within the organization) in terms of design leadership capabilities (Aklin, 2013; Mortati et al., 2014). A fundamental idea resulting from these investigations is that the conditions created by organizations affect the results design(ers) can achieve. Thus, the development of design capabilities becomes associated with the establishment of adequate organizational conditions to support design

Finally, another understanding of design capabilities evidences the trained human resources who engage in design activities. In this regards, the introduction of professional designers (Mutanen, 2008), but also the training of non-professional designers in design (Wetter-Edman & Malmberg, 2016) have been associated with the development of design capabilities in organizations (Malmberg & Wetter Edman, 2016). Thus these approaches convey the idea that by increasing the number of human resources with design ability (competence) in organizations leads to the development of design capabilities. The training of non-professional designers, in particular, is aligned with the idea that design is a human ability, and therefore not exclusive to professional designers. This understanding that different individuals have some sort of design ability and engage in designing is not new in the design discourse and can be traced back to Herbert A. Simon’s statement that “everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (Simon, 1996: 111). Still, it has been argued by scholars that the design ability might be more developed in some individuals than in others (Cross, 1990). Based on that categories have been proposed to distinguish between experts and novices (Cross, 2004), and authors also distinguish designing performed by experts and designing performed by non-experts (“designerly like” or “design-like”, see Robert & Macdonald, 2017). Moreover, the focus on training non-professional designers in design (Bailey, 2012; Design council, 2013) also translates a dynamic understanding of design abilities, meaning that it is expected that the stock of these abilities “carried” by humans is not static and may increase over time with training and experience. For that development to take place designers are facilitating initiatives aiming at transmitting design knowledge (Wetter-Edman & Malmberg, 2016) to non-professional designers, expecting that they will be able to successfully absorb and apply it in their work. However, service designers are still concerned with the question on how to effectively support the transmission of design knowledge in organizations in a sustainable manner (Sangiorgi & Prendiville, 2017).

The previous descriptions demonstrate a multidimensional understanding of design capabilities, including the scope of design practices, the number of design resources and their ability to design, and the organizational conditions to leverage design in the organizations. This research considers these descriptions as complementary and fundamental for the development of a model able to inform the development of design capabilities in organizations. It suggests though how at the core of the model there is a fundamental gap that needs to be addressed, before integrating these perspectives, which is based on a

broad understanding of the factors that might affect the transmission of design knowledge in organizations.

The next section will briefly review knowledge transfer literature to relate it to the current studies on the development of design capabilities in organizations to identify the gaps and inform the proposal for a knowledge transfer design capability model.

## A knowledge transfer view on building design capabilities

Knowledge transfer is believed to be a source of competitive advantage for organizations since by sharing and combining the firm-specific knowledge across units, it will become difficult to copy it (Zander & Kogut, 1995). Knowledge transfer includes both the transmission and the absorption of knowledge across organizations (Sandjong, 2015), as there are actors actively engaged in absorbing or learning knowledge, but also actors involved in transmitting or teaching knowledge in organizations. In knowledge transfer literature these actors have been often labeled as knowledge recipients/receivers when referring to the demand side (actors absorbing knowledge), and as knowledge sources when referring to the supply side (actors transmitting knowledge) of the knowledge transfer process (Szulanski, 1996; Minbaeva & Michailova, 2004). Moreover, it has been argued that the transference of knowledge requires a collaborative effort of receivers and sources, in particular when the transference crosses distinct knowledge areas (Minbaeva & Michailova, 2004). Although these abstractions might have some limitations, scholars state that it might help to provide a better understanding of the phenomena of knowledge transfer, and that they are being increasingly used by researchers in other fields (Minbaeva, Pedersen, Björkman & Fey, 2014).

In order to provide an understanding of the determinants of knowledge transfer, this investigation will follow the work of several researchers (Szulanski, 1996; Minbaeva & Michailova, 2004; Minbaeva, 2007; Malm, Fredriksson & Johansen, 2016) which emphasize: the nature of knowledge, the senders and receivers, and the context/relationships as key factors. Moreover, the authors will briefly explore how those determinants have been addressed in the design literature on design capabilities to draw some implications for design research.

## Transferred knowledge

Researchers on knowledge transfer argue that the nature of knowledge affects how it might be transferred (Szulanski, 1996; Michailova & Mustaffa, 2012; Minbaeva, 2004; Minbaeva, 2007). One of the categorizations often explored in this field distinguishes between tacit and explicit knowledge (Polanyi, 1966). While the first might be mostly embedded in actors' minds and therefore manifested in their understandings and behaviors, the second is structured and documented in some form (Nonaka & Takeuchi, 1995). Scholars proposed constructs like "codifiability" and "articulability" to depict whether knowledge mostly is documented and easily available in some forms or predominantly available in individuals (Minbaeva, 2007; Michailova & Mustaffa, 2012). Based on the understanding that not always explicit knowledge is made accessible to knowledge seekers, for example, due to political reasons, Minbaeva (2004) decided to treat the "availability of knowledge" as an independent dimension. Another characteristic which is discussed by scholars in this field is the complexity/simplicity of knowledge and one of the interpretations of this characteristic is that it captures the number of interdependent elements (routines, resources, individuals, etc.) connected to a specific knowledge (Simonin, 1999). In this regards tacit (non codifiable), non available and complex knowledge are usually understood as characteristics that might negatively affect knowledge transfer. Other characteristics which are said to influence

knowledge transfer include causal ambiguity (Szulanski, 1996), knowledge distance (Michailova & Mustafa, 2012), and “unprovenness” (Szulanski, 1996)

## Transferred knowledge in design research

Researchers in general have made some observations that can be related, sometimes indirectly, to the characteristics of design knowledge that are aligned with the dimensions identified previously. In particular, researchers emphasize the tacit and explicit nature of design knowledge. For example, based on an empirical study of French organizations it has been observed that design knowledge was perceived by those companies as being mostly tacit and attached to individuals (Abecassis-Moedas & Mahmoud-Jouini, 2008). Still, the authors observed that in some cases companies worked with designers to make design knowledge more explicit, for example through the use of computer-aided design tools, by inserting their expertise in databases, among others (Abecassis-Moedas & Mahmoud-Jouini, 2008). This idea that design knowledge might be embedded in individuals, but also partially integrated into some forms is also supported implicitly by other studies. For example, Aklin (2013) understood design knowledge as “design processes, approaches such as human-centeredness, visualisation, experimentation, prototyping, etc., and tools as well as an attitude towards creation of innovative solutions” (pag. 157). While attitudes might be comprehended as something more connected to individuals, design methods and tools have been made explicit over the years and are available in several formats. In service design research in particular, scholars note a current focus on design methods and tools, and question whether it would be interesting to center the attention in design knowledge in terms of framing, aesthetic knowledge and reflection-in-action (Wetter-Edman & Malmberg 2016), which might not be fully codified in a template.

Also, some studies seem to refer to a knowledge distance between knowledge senders (expert designers) and receivers (non-professional designers) and provide some insights related with that. For example, it has been pointed out that in an introductory phase it is important to relate design knowledge to the pre-existent knowledge of organizations (Aklin, 2011; 2013), probably pointing toward the concept of “knowledge distance”. Furthermore, but in this case at an individual level of analysis, it has been observed that the connection between design knowledge and prior knowledge of non-professional designers is relevant, but that there is also a risk that the similarities are too many because in those cases the value of design might not be recognized by non-professional designers (Malmberg & Wetter Edman, 2016). Finally, it has also been observed that when there is an effective combination of related but diverse knowledge (design knowledge and manufacturing/market knowledge) positive impacts might be observed in terms of New Product Development performance (Abecassis-Moedas & Mahmoud-Jouini, 2008).

## Knowledge receivers and their capacity to absorb knowledge

Previous research on knowledge transfer posits that one of the key factors influencing knowledge acquisition relates with to characteristics of knowledge receivers. These characteristics affecting knowledge transfer from the demand side have been often described in terms of absorptive capacity. The term absorptive capacity has been conceived by Cohen and Levinthal (1990) as “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends” (p. 128). Some years later, Zahra and George (2002) connected the absorptive capacity concept with the conceptualization of dynamic capability and suggested that absorptive capacity comprehends four key organizational capabilities: knowledge acquisition, assimilation, transformation, and exploitation. Furthermore, they provided a distinction between the potential capacity (the

ability to acquire and assimilate knowledge) and the realized capacity (the ability to transform and exploit the knowledge). This distinction stressed the idea that although organizations might acquire new knowledge, they might find it difficult to use it for commercial or other ends. Although the term absorptive capacity has been initially formulated as an organizational level concept, Cohen and Levinthal (1990) recognized that the organizational absorptive capacity is dependent on the individual member's absorptive capacities. Accordingly, this lens has been applied at several levels of analysis, including the level of the organization, but also the level of individuals.

Some authors emphasize two aspects of absorptive capacity of knowledge receivers affecting knowledge transfer, namely, actors' abilities (prior knowledge) and motivation (intensity of effort) to learn (Minbaeva, Pedersen, Björkman & Fey, 2014; Gupta & Govindarajan, 2000; Minbaeva, 2007; Szulanski, 1996; Minbaeva, Pedersen, Björkman, Fey, & Park, 2003; Riusala & Smale, 2007). Previous knowledge of receivers is then associated with several elements including a relevant prior experience, a common language with knowledge senders, basic skills to find, absorb and apply the knowledge, among others (Minbaeva, 2007). On the other hand, when referring to the intensity of effort, authors refer to the levels of motivation displayed by knowledge receivers affecting the application of the absorbed knowledge (Minbaeva, 2013; 2007).

## Knowledge receivers in design research

Design researchers also adopted the absorptive capacity lens as a way to better understand how organizations can adopt design capabilities and which factors might support it (Bailey 2012; Akin 2011, 2013; Wetter-Edman & Malmberg, 2016; Malmberg 2017). For example, Akin (2011, 2013) associated the adoption of new design knowledge to the concepts of potential and realized absorptive capacity. In those studies, the author proposes that design (management and leadership) capabilities have the potential to create competitive advantage, suggesting also the link between the socialization of design knowledge across the organization and an increase in organizational flexibility. Bailey (2012) also drew a connection with the absorptive capacity lens to introduce the term "design readiness", intended as a possible measure of organizational awareness and its potential to embed design. The author noted though how design readiness is not enough to guarantee a sustainable adoption of design, calling for the importance of performing design practices to effectively embed design. In general, these studies convey the idea that there might be different phases in the absorption of design knowledge, and that sometimes knowledge recipients might already possess some design knowledge, although they are not putting it into use.

When looking into the conditions for the implementation of design capabilities in organizations design authors refer to some dimensions previously attributed to knowledge receivers, and in particular, they highlight the ones related with actor's abilities (prior knowledge). For instance, Bailey (2012) identifies the lack of a common vocabulary (shared language) between knowledge sources and recipients as a barrier to the transmission of design tools and methods. Similarly, the studies referring to the knowledge distance between senders and receivers, support the idea that the prior knowledge of receivers is relevant and should be taken into consideration (Akin 2011, 2013; Malmberg & Wetter Edman, 2016).

Finally, it has been argued that organizational motivation to observe design knowledge is important for the learning to take place (Abecassis-Moedas & Mahmoud-Jouini, 2008).

## Knowledge senders and their capacity to teach

Previous research on knowledge transfer also refers to factors influencing knowledge transfer associated with the characteristics of knowledge senders (actors' facilitating the access to new knowledge). These characteristics affecting knowledge transfer from the supply side have been often described in terms of disseminative capacity. The concept of disseminative capacity has been defined by Minbaeva & Michailova (2004) as "the ability and willingness of knowledge senders to transfer their knowledge" (p.667). In this case, although the term disseminative capacity has been conceptualized by Minbaeva & Michailova (2004) as an individual level concept, still there are studies applying it at an organizational level.

Regarding knowledge source abilities (prior knowledge), authors discuss that actors should, for example, be able to articulate and communicate knowledge (Minbaeva & Michailova, 2004; Minbaeva, 2007) effectively so that receivers can understand and put the learning into practice (Mu, Tang & MacLachlan, 2010). Additionally, researchers also discuss the importance of senders' abilities to identify the needs of receivers and to identify new uses for their knowledge (Minbaeva, 2013).

Concerning willingness, scholars have noticed that not always knowledge sources are interested in sharing their knowledge. For example, it has been observed that knowledge sources might be conditioned by a perceived loss of individual competitive advantage in relation to others when sharing their knowledge, by the time consumed in those activities, to avoid that the quality of their knowledge is evaluated by others, by the fear to share the knowledge with others who are not investing in their own development, among other reasons (Husted & Michailova, 2002). Also, it has been observed that researchers have drawn upon motivational psychology theories to better understand this determinant of knowledge transfer, (Minbaeva, 2013). Works in that field distinguish, for example, between autonomous motivation and controlled motivation (Deci & Ryan, 2000) and suggest that these different types of motivation might affect individual behaviors, including the ones centered on knowledge transmission. In particular, it has been observed that some studies point out the idea that autonomous motivation might lead to higher levels of effort and persistence, while controlled motivation might lead the individual to invest less effort to accomplish a task, and a focus on immediate results (Minbaeva, 2013).

## Knowledge senders in design research

Contrary to the case of absorptive capacity, the disseminative capacity of knowledge senders has been largely ignored in the design literature. Nevertheless, it has been mentioned previously how in-house service designers are now often occupied with transmitting design knowledge to non-professional designers. Those activities have been associated with the role of professional designers as "in-house consultants" (Blomkvist, 2015) or facilitators (Wetter-Edman & Malmberg, 2016). Based on this, professional designers could be portrayed as important knowledge sources facilitating the access to new (design) knowledge in organizations.

In this context, although some articles on design literature suggest that professional designers might have an important role in supporting the dissemination of design knowledge in organizations (Bailey, 2012; Wetter-Edman & Malmberg, 2016), there seems to be a lack of focus to weather and how their characteristics (abilities and motivation) are affecting the effectiveness of those processes in organizations.



## Context and relationships established to transfer knowledge

Studies on knowledge transfer also discuss how the context in which knowledge senders (actors' supplying new knowledge) and knowledge receivers (actors' demanding new knowledge) interact, moderates knowledge processes.

One approach to capture the heterogeneity of context, and its impact on knowledge transfer comprehends the distinction amongst organizational, relational and social contexts (Riusalav & Smale, 2007; Michailova & Mustaffa, 2012). When referring to the organizational context, a distinction has been made between fertile and infertile contexts (Szulanski, 1996). While the first is associated with contexts that facilitate the transfer and development of knowledge, the second is associated with environments that hinder those processes. Factors that have been discussed by scholars and which are believed to affect knowledge transfer include organizational structures and sources of coordination and expertise (Szulanski, 1996), existence of systems to capture and share learning (Minhaeba, 2007), the strength of the orientation/conditions towards learning (Riusalav & Smale, 2007; Minhaeba, 2007). The relational context, on the other hand, highlights the relationships established between actors. In this regards, authors convey the idea that the level of interaction between actors will affect knowledge processes in organizations. In particular, it is suggested that weak ties between actors might hinder knowledge transfer (Minbaeva, 2013; Riusala & Smale, 2007). Finally, concerning the social context, authors convey the idea that the "cultural" distance between knowledge sources and recipients might affect the transference of knowledge (Riusalav & Smale, 2007).

Researchers also highlight the relevance of studies on the diversity of transmission channels and how their properties might affect knowledge transfer (Minbaeva, 2007; Michailova & Mustaffa, 2012; Gupta & Govindarajan, 2000). In this regards, it has been suggested that this diversity can be captured in terms of density, openness and informality of communication (Gupta & Govindarajan, 2000). Moreover, authors have observed a shift in focus from examining "hard" (knowledge management systems) to the "soft" (socialization) mechanisms of transference (Michailova & Mustaffa, 2012).

## Context and relationships established to transfer knowledge

The diverse contextual factors affecting the transference of design knowledge did not seem to have received the same amount of attention from scholars. For example, it is possible to observe that several authors frequently mention factors that are associated with the organizational context. There have been several articles reporting the importance of having managerial support (Bailey, 2012; Aklin 2011; 2013) for the transference of design knowledge in organizations. There are also cases demonstrating possible problems related with building a sustained design capability when organizations do not provide support/conditions for the absorption and transmission of design knowledge (Malmberg & Wetter Edman, 2016), since in that case the knowledge might be placed in individuals, and not spread in organizations. In this situation, one might question what happens if those individuals leave the organizations at some moment. Moreover, it has been observed that sometimes the interventions to transfer design knowledge are not continued over time (one-off kinds of interventions) and that might not provide room for reflections of participants (Wetter-Edman & Malmberg, 2016).

On the other hand, when considering the social context, there are also some critical reflections in the design literature. For instance, when looking into the perspective of an organization adopting design, the authors present some considerations regarding the conflicts that might emerge related with what is considered knowledge, the aesthetics of the institution (more dependent on texts and words), the particularities of the political context,

and others that illustrate potential differences between knowledge senders and recipients (Bailey & Lloyd 2016) that might be engaged in knowledge transfer. Similarly, it has been argued that a strong culture of healthcare might also work as a potential barrier for design (Malmberg & Wetter Edman, 2016).

Finally, while some articles (Bailey, 2012; Bailey & Lloyd 2016; Wetter-Edman & Malmberg, 2016) provided detailed descriptions about the diversity of mechanisms that are being used to facilitate the transference of design knowledge (e.g. projects, workshops, conversations, phone contact, e-mails, communications, communal spaces, exhibitions, guidelines and templates, tools, support materials, etc.), they do not reflect over their choice and whether or not they impact the successful transfer of knowledge in different ways.

## Reflections

Four significant determinants which are said to influence knowledge transfer in organizations have been described, including the nature of knowledge, the characteristics of knowledge receivers, the characteristics of knowledge senders and the context in which receivers and senders establish relationships. Knowledge transfer literature supports the idea that the diversity of all those elements influence how knowledge is transferred in organizations. A preliminary review of design studies does not seem to consider how the heterogeneity of all these elements can impact the work done in organizations to spread design knowledge and build organizational-wide design competences. In particular, it seems that the impact of the characteristics (ability and motivation) of knowledge sources (professional designers) in the successful transfer of (design) knowledge is currently under-researched. Moreover, the role played by the nature of relationships established between knowledge sources (professional designers) and knowledge receivers (non-professional designers), as well as the role of their motivation appear to have received little attention in the design literature.

## The proposal of a view on the development of design capabilities through the dynamic transference of design knowledge

Former studies suggest that the determinants affecting knowledge transfer in organizations might be categorized in different groups, and their impact assessed whether individually, or in an aggregate form. This initial study supports the idea that by distinguishing and analyzing the heterogeneity of design knowledge, knowledge sources, knowledge receivers and context it will be possible to have a broader understanding of how design knowledge is being spread in organizations, and design capabilities built in a sustainable way. The proposed model, integrating and summarizing these four dimensions (fig. 1), is a starting point for future reflections and reviews, also considering the possibility for integration of other determinants which might be identified as particularly relevant to the transference of design knowledge<sup>3</sup>. Furthermore, the authors understand the transference of design knowledge as a dynamic process, meaning that while at some point actors might be playing the role of knowledge receivers, at another moment they might be assuming the role of knowledge senders. In this context, disseminative and absorptive capacity might be relevant for both actors engaged in the transference of design knowledge and they both need consideration.

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<sup>3</sup> Examples might be the credibility/reliability of knowledge sources or the retention of knowledge of receivers, regarded as critical factors in knowledge transfer studies.

**Organisational, social and relational context**  
Organizational structures; sources of coordination and expertise; systems to capture and share learning;  
conditions towards learning;  
Cultural distance between actors  
Relationships between actors

**Transference mechanisms for design knowledge:**  
Communication: density, openness and informality  
Mechanics: hard (knowledge management systems) and/or soft (socialisation)

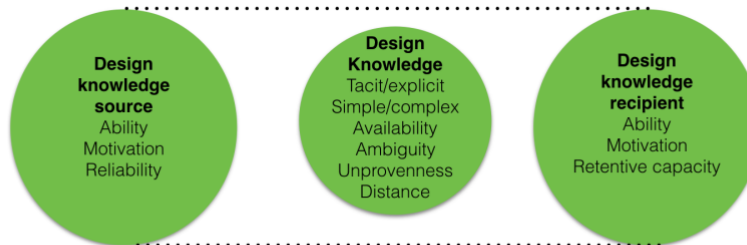


Figure 1 – Expanding the understanding on determinants affecting the transference of design knowledge

## Conclusions

Service designers are no longer being hired by non-design intensive organizations solely to design new services. Currently, they are being asked to help in the development of sustained design capabilities, in particular by transmitting their knowledge to non-professional designers. Still, the expansion of their role in organizations carries some challenges as to understand what might affect their new work. This research used a knowledge transfer lens to identify determinants in the transference of knowledge in organizations and briefly explored how those determinants have been treated (even if in an indirect way) on a limited selection of the design research literature.

While knowledge transfer studies identify and study, both individually and also in an aggregate form, four determinants related with what is being transferred (knowledge), the actors involved in sharing (knowledge senders) and absorbing knowledge (knowledge receivers), and the context (organizational, social, relational as well as transfer mechanisms), the design literature does not seem to acknowledge the heterogeneity of all those factors and their impact on the successful transference of design knowledge in organizations. The identification of those four groups of determinants might provide an initial base for future reflections on how to improve the effectiveness of efforts directed toward the building of sustainable design capabilities in organizations.

The authors have reviewed and integrated this literature as a starting point to deepening the understanding of the transmission of design knowledge, as a mechanism to develop design capabilities in organizations. The proposed model can be used as a theoretical lens to inform case study research into varied examples of integration of design in non-design intensive organizations, such as in-house design teams/innovation labs, or entire design agencies acquired by consultancies. Moreover, it could be used also to reflect on the consequences of absorbing design knowledge, for example, to assess whether the cultural distance between actors decreases when design knowledge is effectively absorbed.

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# Service design for behavioural change - current state of the discipline and practice in India

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## Abstract

We investigated the current picture of appreciation, state of relevant knowledge and skills, and practice among the Indian design professionals regarding service design and design for behaviour change. Inter alia, the current scenario regarding the embeddedness and maturity path of service design in academic institutes and industry were studied. Indian society and businesses are facing challenges that are wicked, deep and complex due to the diversity of social, cultural, and economic conditions. They could benefit from a synthesis of service design and design for behavioural change. This study is exploratory in nature. However, it is a significant initial step to emphasize the need of and gaps in the aspects pertaining to effective service design for behavioural change practice in India and suggests indicative interventions. With these interventions, Indian professionals could achieve maturity and be in a position to address the wicked problem India faces.

**KEYWORDS:** service design, design for behaviour change, design in India, design practitioners in India, design education in India, wicked problem

## Introduction

Design touches all spheres of human experience (Buchanan, 1992). With increasing technological complexity and business environments, living up to experiential aspirations of customers is more demanding (Kolko, 2015). Design Thinking (Brown, 2009) (Martin, 2009), or Designerly Thinking (Hassi & Laakso, 2011) comprising a set of methods, mind-sets and practices can address the challenges through human-centric, integrative, holistic interventions that balance the needs of several stakeholders. This mode is critical to address the complex and 'wicked' problems faced by society.

Designed products and services shape culture, behaviours, attitudes, environments, and even values and priorities, as they inter alia "design", that is facilitate or hinder certain activities and actions (Kolko, 2012, p. 18) (Stanton & Baber, 1998). It is not feasible though to

segregate “behaviour” as a discrete component, as a user’s experience during the life cycle engagement with products and services and behaviours co-evolve (Kolko, 2010).

The Service Design discipline has matured now and attained a distinct identity. An emerging discipline is Design for Behaviour Change, which aims at influencing without coercion - the behaviours of individuals and groups for a better personal life and the world. It draws on fields like Psychology, Sociology, and Behavioural Economics among others. Governments, social organisations and businesses are leveraging its potential. A significant congruence in these two disciplines rests on the commonality in attention to long temporality of design interventions, offering opportunities of synthesis to leverage their synergy.

Services contribute to over 60% of India’s Gross Domestic Product (Reserve Bank of India, 2017). India also faces a plethora of developmental challenges. At the same time, the stable economy, enabling technology infrastructure and supportive government policies offer a great opportunity to enhance the pace of the development agenda. Therefore, the Indian society and businesses could benefit from a synthesis of service design and design for behavioural change. The thought motivated us to undertake the current exploratory study.

## Design for Behaviour Change and Service Design: Alignment and Differences

### Service Design

Service Design encompasses designing interactions, experiences, and relationships (Meroni & Sangiorgi, 2011). Well-designed, coherent Touch Points<sup>1</sup> and Touch Point Ecosystems, supporting backend systems, processes, and policies create service experiences. The users and a harmonised Touch Point Ecosystem interact to fulfil the users’ utilitarian and experiential goals over the span of service relationship through several service encounters. The temporal, cumulative build-up of experience was framed as momentary (“An Experience”), (Forlizzi & Battarbee, 2004)), episodic and cumulative (Roto, Law, Vermeeren, & Hoonhout, 2011; Karapanos, John Zimmerman, Forlizzi, & Martens, 2009). The cumulative experience that emerges through sense making, interpretation, reflection, and appropriation influences the users’ behaviours and attitudes (McCarthy & Write, 2004). The design of service environments, “Servicescapes” (Bitner, 1992) also affects the experiential outcomes. To conclude, Service design is user-centric, adopts micro as well as a holistic perspective, and is concerned with the coherence of experience in the user-service provider interactions in both short and long temporal relationships span.

Service providers co-opt users as collaborators to co-create value (Pralhad & Ramaswamy, 2004). The user’s motivations and behavioural dispositions are at once inputs to and outcomes of the value creation process. Services as ‘action platforms’ (Manzini, 2011) support or impede certain behaviours, but must do so without compromising the user’s freedom. Mindful Service Design therefore empowers the users and facilitates co-creation of outcomes desirable to them. Service Design in this perspective becomes an approach to evolve new methods and processes to align to the value expectations and roles of stakeholders (Yu & Sangiorgi, 2014).

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<sup>1</sup> “Touch Points are the entities with which a customer interacts to commence or progress with a service encounter. They can be human (for example, a health worker), or non-human (for example, a portal). A Touch Point Ecosystem is a network of Touch Points that operates coherently to provide desirable service experience”.



## Design for Behaviour Change

The need to influence and change a user's behaviour or that of the society to meet social challenges is now well-recognised. Behavioural change interventions occur at various levels – products, services, and moving up to public policy. An illustrative list of theories and approaches that have been used to guide the interventions is:

- **Disciplinary orientation: Psychology**  
Learning, knowledge absorption, processing and retention; relations between attitudes, behavioural intentions and behaviours; behavioural changes over time and the attributes of the changed states (Learning Theories (Simandan, 2013), Theory of Planned Behaviour (Ajzen, 1991), Theories of Reasoned Action (Madden, Ellen, & Ajzen, 1992), Social Cognitive Theory (Bandura, 1986), (Prochaska & Velicer, 1997))
- **Disciplinary orientation: Psychology or Persuasive design using technology**  
Role of Motivation, Ability, and Triggers in shaping behaviours, types of behaviour targets and appropriate interventions (Fogg B. J., 2009), (Fogg & Hreha, 2010)
- **Disciplinary orientation: Sociology**  
The role of society and social processes in influencing behaviours and behaviour change; concerned with these in relation to individuals and groups (Granovetter, 1978), (Rogers, 2003)
- **Disciplinary orientation: Cognitive Psychology**  
Role of beliefs, practices, norms, knowledge, and other such factors, along with their inter-relations in influencing behaviours. (Rosenstock, 1974), (Reckwitz, 2002)
- **Disciplinary orientation: Behavioural Economics**  
Nudge (Leonard, 2008), Choice Architecture (Thaler & Sunstein, 2008), System 1 and System 2 thinking (Kahneman, 2011):
- **Disciplinary orientation: Multidisciplinary**  
Behaviour influence and change frameworks that synthesise several theories to guide micro and macro design interventions ( “4 E's” model ( HM GOVERNMENT, 2005), (DEFRA, 2008) Behaviour Change Wheel (Michie, Stralen, & West, 2011)), MINDSPACE (Dolan, Hallsworth, Halpern, King, & Vlaev, 2010), C-R-E-A-T-E Action Funnel (Wendel, 2013), Design with Intent (Lockton, 2010)

The alignment of and differences between Service Design and Behavioural Change is summarized in Table 1.

Aspects	Service Design	Design for Behaviour Change	Elaboration
Human Centricity	Focus on individual. Off late, factoring the concerns society	Individual, groups, and society	Aimed at individuals, embedded in the social fabric.
Locus of Value Creation	Commercial as well as for individual wellbeing and societal objectives	Mainly individual and societal wellbeing objectives. Also used in commercial settings.	Increasingly social ventures are service organizations aiming for behaviour changes.
Temporality	Short (Service Encounter) to long (Relationship)	Short (one-time change in behaviour) to long (sustained behaviour change)	Recognise that value is created through engagement over an extended time span.
Co-creation of Value	User and service provider have mutually agreed roles	Agency of change rests with the user, facilitated by other stakeholders.	Co-creation of value is critical to maximize the benefits.
Stakeholders	Primary: Service User, Service Provider. Allied:	Primary: Individual Allied: Change facilitators (government,	Harmonizing the activities of the stakeholders towards

Aspects	Service Design	Design for Behaviour Change	Elaboration
	Community, partner firms	organisations, community)	The individual's goals is critical
Contributing disciplines	Multidisciplinary	Multidisciplinary	Disciplines play a role depending on the needs
Role of Technology	Enabler	Enabler	Technology is increasingly an important component

**Table 1 – An abridged overview of the alignment and differences of Service Design and Design for Behaviour Change**

The affinity and congruence between these two fields is noteworthy in terms of the concern for value creation over long duration, dynamic usage contexts, and accounting for diversity of users, with the recognition of the individual situated in a social context as the locus of change. Therefore, opportunities for integration of Service Design and Design for Behaviour Change can be leveraged by designers for meaningful value creation for the users.

### Relevance of Integrated Competencies in Service Design and Design for Behaviour Change

With the advances in technology, a networked world and concerns such as, sustainability, human welfare is now a dominant theme for governments and businesses. Early advocacy of designers' societal responsibilities and sustainable design came from Schumacher (1973) and Papanek (1971). Social design (Armstrong, Bailey, Julier, & Kimbell, 2014), social innovation (Manzini, 2007) and Transition Design (Irwin, 2015) are recent themes. New or reframed methods have been proposed (Murray, Caulier-Grice, & Mulgan, 2010; Manzini, 2015), that are human centric, and fulfil the goals of social upliftment and sustainability. Such approaches call for an inclusive perspective when products and services are designed to alter the users' behaviours at micro level leading to macro changes (Brown, 2009), Brown (2010). Numerous commercial design firms as well as social organizations undertake projects aimed at changing people's behaviours for their betterment – be it encouraging washing hands to reduce infections (IDEO, 2013; Hulland, et al., 2013) to socio-technical design to improve compliance to medication (U.S. Patent No. Patent No. 5,646,912, 1997), and managing diabetes (Burns, Cottam, Vanstone, & Winhall, 2006), to cite a few examples.

Wicked problems (Rittel & Webber, 1973) rooted in ambiguity, contradictory, ever changing requirements and complex inter-dependencies of stakeholders abound in societal situations. Though it might appear that radically different design approaches are necessary, Margolin & Margolin (2002) suggested that “Social Model” of design and “Market Model”, are two ends of a spectrum. The former tackles complex problems, while the later might be adequate for complicated problems. Rittel's (2010) suggestions too resonate with established design practices. Therefore, it appears that the conventional methods and practices of designers could be successfully adapted for addressing ill-structured or wicked problems, particularly in a multidisciplinary or trans-disciplinary and participatory paradigm. The concept ‘responsive design’ (Burns, Cottam, Vanstone, & Winhall, 2006) suggested elements of such a paradigm: iterative refinement of the brief, interdisciplinary collaboration, participatory design methods and techniques, building capacities of people and organisations to continually ‘redesign’ to emergent contexts, and aiming for fundamental change through design interventions. Capabilities arising from a synthesis of Service Design and Design for Behavioural change could be important, may be critical component of such a paradigm.

To adopt and adapt the paradigm in the Indian context, it is necessary to understand the challenges that are wicked, deep, and complex due to the diversity of the social, cultural, and economic conditions. Design education has to perform the foundational role to enable designers to tackle the challenges.

# The Emerging Indian Context and Design Scenario

## The Contexts and Trends in the Societal, Technology and Business Environment in India

Effort to solve a wicked problem reveal additional problems, create new problems, or at times, result in unanticipated benefits as well, including the changes in peoples' behaviours. Two examples from India are illustrative. A cornerstone of the Government of India financial inclusion drive in 2014, was Jan Dhan ("People's Wealth") accounts. The "nudge" came through opening full-service bank accounts with a "zero balance" requirements for the poor, many who had not seen the inside of a bank branch. Over 300 million accounts were opened in the subsequent year (Mission-FI, Department of Financial Services, Government of India, n.d.). The social benefits received in cash previously, were credited directly to the accounts of the beneficiaries. Positive behavioural changes noticed were, increased likelihood to save and reduced alcohol and tobacco addiction (Gupta, 2016). Another instance is the controversial "demonetisation", in November 2016 invalidating large value currency notes. The intent was to attack the undercover, "black" economy and tax evasion. A concurrent drive, "Digital India", was launched, supported by a secure, robust digital transaction infrastructure (Unified Payment Interface). A mobile app for person-to-person as well as person-to-business money transfer was a key touch point of the service system. Some of its "design" elements are noteworthy. It was named "Bharat Interface for Money (BHIM)", a term with mythological connotations of strength, and a modern connotation of social empowerment. The app was developed and deployed by the government to instil trust. Privacy was assured as there was no requirement to reveal identity or personal details to the other party. The transaction was designed to be as simple as sending an email. There was large scale promotion through media and incentives for use. After a year, there were five million active users (Forbes India, 2017). These cases demonstrate the power of Designerly systemic interventions comprising coherent multi-tiered, interlinked components at policy to micro level that led to behaviour change at scale.

Along with the challenges, there are several enablers as well. India is a global leader in mobile internet usage (85% of 355 million Internet users). The number is about twice that in the US. (Meeker, 2017). Widespread mobile connectivity and continually lowering data costs (Approximately USD 2 per month for 60 GB data of 4G speeds) offer a leverage for innovative services that can effect positive behavioural change. Challenges such as number of languages (22 official languages, each with over 1 million active users), large rural population, and socio-political diversity can be converted to opportunities through the power of design to imagine services that align to the end users and make a difference. There is a growing, widespread appreciation in India that designers can play a vital role in betterment of and innovations in public services for meeting the social challenges (Confederation of Indian Industry (CII), 2015).

## The Landscape of Design and Design Education in India – Institutional, Formal, and Informal

A National Design Policy (Government of India, 2007) was formulated a decade ago to promote design profession and education. Design Council of India, a government backed body was formed comprising eminent designers, academicians, industry leaders, and policy makers. Though the policy focusses on increasing the competitiveness of businesses, it recognises the crucial, wider role of design as a differentiator. Government services, businesses as well social enterprises<sup>2</sup> are increasingly services focussed and have leveraged

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<sup>2</sup> We recognise the pitfalls in naming specific ventures with a range with varied objectives and services models. The following names are illustrative, with no intention to diminish the credit to other significant change makers. Examples: Arvind Eye Care System (<http://www.arvind.org/default/Index/default>), Hasirudala (<http://hasirudala.in/>), Akshaya Patra

Designing ways. However, a mere redesign of existing products, physical or digital is insufficient to create scalable value and positive behaviour change in all sectors, for wide variety of customers and citizens. Thoughtful service design blended with design for behaviour change may turn out to be essential for the reimagined, innovative solutions. It appears though that the stakeholders lack adequate comprehension of the contribution Service Design could make to businesses as well as societal initiatives. For instance, Service Design or Design for Behaviour Change does not feature in the CII report (2015).

Two premier government backed design schools (National Institute of Design, and Industrial Design Center, IIT Bombay) were founded six decades ago. The number of state funded as well as private design schools has gone up significantly since then. Research and professional conferences such as ICORD, India HCI, and UXINDIA have been held since over a decade. The spread and depth of the disciplines taught has increased vastly to encompass Product Design, HCI, User Experience Design, Visual Communication, and others. However, the correct estimate of the number of schools or designers is difficult, since India does not have a standard definition of “professional designer”. A large number of “designers” might not be formally trained (British Council, 2016). The report estimated approximately 7,000 qualified designers and 5,000 students in various design schools. A contemporary estimate was 35,000 design professionals (Confederation of Indian Industry (CII), 2015)! Regardless, a large body of practicing “designers”<sup>3</sup> can be safely assumed. Despite the apparent absence of any institute that offers education in Service Design, a large number of designers might be self-educated, taking advantage of a range of online options, short courses conducted by design schools as well as training provided by their employers.

Worldwide calls for making changes in the curriculum and focus of design education have been voiced. It was suggested that design education programs have not evolved to suit the changes in the world (Kolko, 2010). As a result, students learn traditional and irrelevant methods and techniques. Norman and Klemmer (2014) argued that the present design education approaches lack a solid foundation of knowledge essential to tackle the complexities of today’s world. They stressed the need to incorporate in design education the societal issues, persuasion (or behaviour change, in a broader sense), and understanding of complex and interdependent systems. A balance of generalist design skills and in-depth specialisations, Service Design being one of them, was advocated. Similar ideas were expressed elsewhere (McCullagh, 2010), and in India too (De Parker, 2013). Besides, there was emphasis on building ‘T shaped designers’, that is, the designers who have wider set of knowledge and skills, as well as strong capabilities in their specialisation (Fleischmann, 2014). It appears, specialised, relevant knowledge and skills, need to be blended with broader capabilities that enable trans-disciplinary collaboration to address the challenges in the Indian context.

To meet the challenges such as education for all, livelihood creation, sustainability, smart cities, clean India, Digital India and effectively delivering public services, India needs a large number of designers that can synthesise several disciplines. Service design and design for behaviour change would be important constituents of the blend. The first step towards meaningful action by educational institutions and other stakeholders, is to assess the current state of readiness of the designer community in India. It appears such an attempt has not been done yet. The study reported here is probably the first exploratory step.

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(<https://www.akshayapatra.org/>), Goonj (<http://goonj.org/>), Rang De (<https://www.rangde.org/>), Meghashala (<http://www.meghashala.com>).

<sup>3</sup> A rough estimate of the designers formally trained in National Institute of Design and Industrial Design Center (IIT-Bombay) alone is in the range of 5000 to 7000.

## Objective of the Study

India Design Report (2015) recognised the demand for services and service design in India. However, there does not seem to be any research regarding the extent to which design professionals in India perceive the relevance of and practice service design. The objective was to carry out an exploratory study to obtain the current picture of appreciation, state of relevant knowledge and skills, and practice among the design professionals regarding service design and design for behaviour change. Being an exploratory study, a corollary aim was to identify directions for future research, and hopefully suggest some indicative actions.

## Methodology

This research is based on a mix of qualitative and quantitative data. A survey questionnaire was developed and administered among Indian designers. Some of the key details sought were: view on service design and service design practice oriented towards behavioural change, nature of the organization where they work, their current role. In order to understand the various dimensions of the current state of the service design practice in India and design for behaviour change, aspects such as customer demand, the design process, the influence of organisation contexts and the outcomes were included. The questions were mix of multiple choice and free text format.

We adopted the four steps for survey questionnaire design (Cooper, Schindler, & Sun, 2006).  
Step 1: Research questions (RQ) that articulate the research objectives in the form of interrogative sentences

Step 2: Investigative questions (IQ): The questions that elaborate the research questions to bring out the aspects that would be investigated

Step 3: Measurement questions (MQ): The analysable questions linked to the Investigative questions

Step 4: Survey questions (SQ): The exact form and content of the questionnaire

The scope of the survey encompassed:

RQ: To what extent do the practitioners understand distinctiveness of service design?

RQ2: Do their clients understand the need for behaviour change?

RQ3: To what extent practitioners have the knowledge of behavioural change theories?

RQ4: To what extent practitioners understand behavioural change practices?

Table 2 illustrates the hierarchy and linkage to survey questions for RQ1.

Research Question	(One of the) Investigation Question	(One of the) Measurement Question	Final Survey Question (measurement through a Likert Scale)
To what extent the practitioners understand distinctiveness of service design?	What do we mean by understanding? What do we mean by extent? What do we mean by <b>distinctiveness</b> ?	<i>Do practitioners understand that service design and UX design are different?</i> - scope - user research methods - design concepts - design detailing - design validation	<i>I believe service design and UX design are different on the following aspects</i> - Scope - User Research Methods - Design Concepts - Design Detailing - Design Validation

Table 2 – Hierarchy and linkage to survey questions

Table 2 depicts the measurement question pertains to the *distinctiveness* aspect of investigative question. The *extent* aspect was covered through the Likert scale (*Significantly different, Moderately different Almost Identical, Identical, I don't know*). Other questions in the questionnaire followed a similar hierarchical linkage.

A pilot study (N=5) was conducted to identify issues in the content, articulation and administrative aspects (time required to fill the questionnaire, ease of online answering ...). The survey questionnaire was revised based on the results of the pilot study. The complete questionnaire is available at <https://goo.gl/forms/UDH5RTngiNKyO6e23>

The sample comprised designers who were likely to be working in services organizations or for clients in services business. Anecdotal and informal data suggests the designers in India, particularly those from UXD are moving towards service design practice. Convenience and snowball sampling targeted this set of designers. Designers with minimum two years of experience were identified through industry contacts, as we wanted participants with adequate exposure to industry and design practice. The link to the online questionnaire along with a covering note were sent to them, along with a request to forward the questionnaire to other designers who match the criteria. Respondent anonymity was ensured throughout. The questionnaire reached 100 plus designers and we received 33 fully completed responses. Nine respondents voluntarily provided additional information over email and phone, which was analysed subsequently.

## Analysis and Interpretation

### Understanding of Service Design and its Practice

*Service design discipline in India appears to have moved from a nascent stage in the consciousness of practitioners. The practitioners seem to be familiar with the domain and are working towards maturity by acquiring additional knowledge and its application.*

65% respondents believed that scope of service design and UX design are different and 85% respondents were aware that the User research methods are similar for service design and UX design. As indicated in the figure 1, close to 40% respondents were aware of the key service design methods and concepts, but they lacked a comprehensive awareness. Therefore, it appears that the awareness of service design and interest is growing and practitioners might be on the path of maturity.

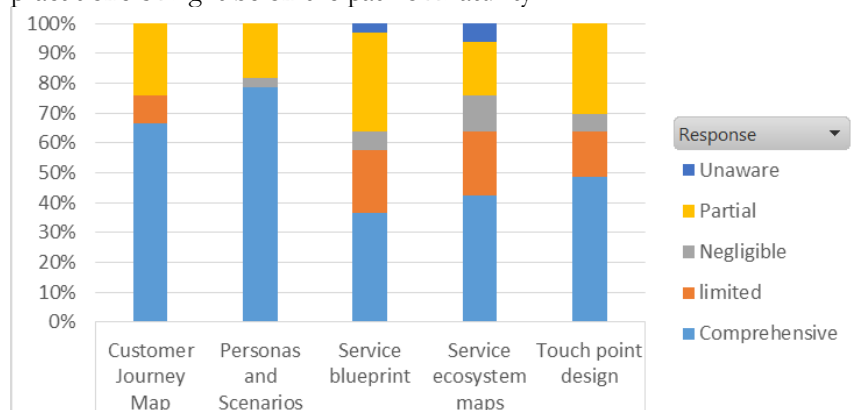


Figure 1 – Practitioners knowledge of service design methods and techniques

A significant proportion (50% respondents) is getting opportunities to apply their knowledge of service design processes, methods, and techniques. However only 6% respondents indicated Service Design as their primary expertise, which means that the practitioners were probably trying to acquire necessary knowledge and skills in service design on their own. It is a positive sign for the future maturity of the field in India.

### Understanding of Behavioural Change Aspects

*The responses pointed to several contradictions which indicates a significant lack of understanding, misunderstanding and limited or low level of knowledge about Design for Behavioural Change.*

Interestingly, 36% respondents indicated that design briefs for their projects explicitly specified the behaviour change outcomes. It indicates that there is a demand for the service design for behavioural change, but they are not able to access the brief appropriately. Awareness, education seems to be one narration in which intervention is required.

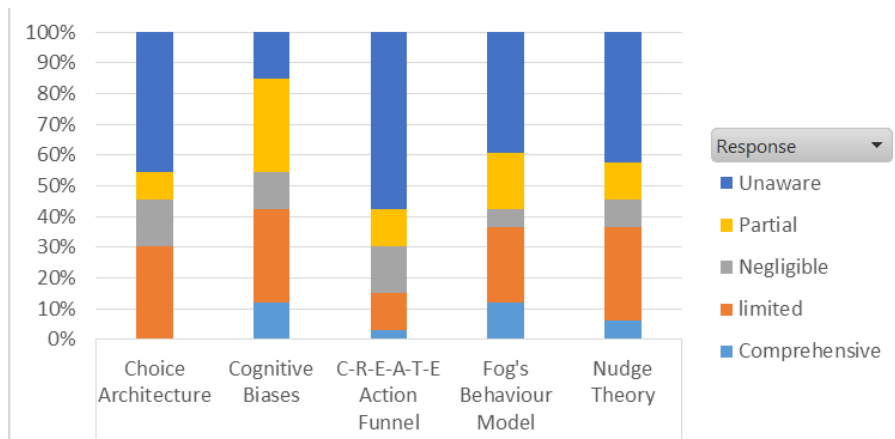


Figure 2 – Practitioners knowledge of the theories related to influencing behaviour

More than 50% respondents are unaware of the knowledge of well-known behavioural theories and models as shown in figure 2. About 5% claimed to have comprehensive knowledge of some of them and only 6% respondents had seen theories related to influencing behaviour applied in practice. It correlates with the lack of awareness about it. Cognitive biases seem to be relatively better known since 40% respondents were aware of it. However, 40% respondents indicated that they had to modify the generic way of designing services that successfully influenced user behaviour during last two years. The implied claim that they were able to assess the need and act on it seems contradictory to their level of knowledge.

52% respondents indicated that their user research team was not keen at looking for the information relevant to influencing user behaviour. However, 33% respondents believe that they have the capability to uncover the aspects related to influencing behaviour. 40% respondents occasionally validate their service design solutions from perspective of influencing user behaviour. The claim though cannot be taken at face value, as we cannot be sure what is being validated in view of the widespread lack of knowledge and understanding of behavioural theories and models. Additional in-depth assessment is needed to throw more light.

## Challenges in an Organizational Setting

*It was clear from the responses that generic service design processes need to be adapted to suite the organizational settings. It also pointed out the improvement areas such as creating the predefined design success criteria and ascertaining the success of the design solution after it goes live.*

Organizational settings demand collaboration between multidisciplinary teams that might not be collocated. Therefore, it was not surprising that 42% respondents had to modify the generic design processes to suite their own setting. 40% respondents made trade-off in primary user research and 30-40% respondents have done trade-off in all aspects of design life cycle. In order to draw meaningful conclusions, these aspects need further investigation to ascertain whether it is a widespread phenomenon or confined to certain kind of organizations or design situations or business demands.

A significant proportion (37%) of respondents stated that they do not ascertain the success of the design solution after it goes live. An alarming revelation is that 73% designers rarely, if ever use any predefined design success criteria.

Most of the respondents (73%) were employed by IT Product or Services Companies. Interaction design emerged as the most common design expertise with 82% respondents stating it as their primary expertise. Interestingly, 6% respondents indicated the service design as their primary expertise which suggests the growing interest in spite of lack of formal educational opportunities in service design.



## Insights from Qualitative Data

*Qualitative data provided triangulation and enriched the insights such as knowledge gaps in relation to as well as ignorance of certain concepts and practices as well as the current organizational challenges in implementing service design and design for behaviour change.*

Apart from the survey data, nine respondents reached out voluntarily through email and over the phone to share their reflections upon the experience of answering the questionnaire.

Three of them acknowledged that the survey helped them to realize their own inadequate knowledge and even a lack of awareness of certain concepts and practices. Their expressions were “... *I enjoyed answering the questions. It was enriching learning experience...*” An experience designer expressed their inability to execute the service design projects as, “*Since the number of projects with service design scope in our context are quite a few, in most projects it was up to us to stretch it. ...*”. It is a positive sign that designers are willing to learn and apply the service design practices wherever possible.

However, six respondents who had not completed the survey expressed their inability to complete the survey and shared multiple reasons. One of them said, “*I have not completed the survey because the questions are difficult for me to understand (because of my lack of knowledge) and to provide correct responses... I may be the dumbest of the lot to whom you circulated the questionnaire...*”

Another designer said, “*Lot of terms look new to me and hence I am not able to answer the questionnaire*”. A passionate designer called us and said, “*I tried filling this survey but a lot of questions did not make sense to me (that is, I was not even aware of the topic of the question).*”

Interestingly, a designer reflected on their own understanding of the term “service design”: “*Started filling the survey questionnaire, but I had never come across most of these concepts. Is it really relevant for service design?*” After interacting with them, it came out that it was not the articulation of the questionnaire which was bothering them, but the content which was not matching with their understanding of service design. It clearly shows intervention is required to educate designers about service design. In addition, a designer expressed the organizational challenges in a detailed email. The gist of it was - “*... the truth of the matter is, in my professional orgs they are still struggling to implement Usability/UX as a practice. They end up doing some bits and pieces of service design in the sense of multi-channel UX ...*”. However disheartening, arguably the quote broadly characterises the current state of affairs regarding the service design practice in India.

## Conclusions and Discussion

Design profession has matured in India and the disciplines such as product design, usability, and UX design are contributing to businesses and society. However, Service Design as well as Design for Behaviour Change as disciplines and practices have made only modest progress on the path of maturity. Prima facie, wider adoption of service design in India has a range of issues. It seems design practitioners and businesses do not yet have appreciation and understanding of the significant role service design and behavioural change can play in addressing the current opportunities and challenges. A key gap is the inadequate attention and efforts of educational institutes, organisations and professionals towards attaining maturity in Service Design and design for Behavioural Change. However, due to factors such as, awareness and initial forays in practice, the professionals are positioned to build on the base of maturity of related disciplines and contribute in addressing wicked problems of behaviour change in social as well as organisational context, if the momentum of the progress is maintained. This calls for appropriate interventions by several kinds of stakeholders, industry, education institutes, fellow professionals, associations and governments. To sum up, *Service Design appears to be in a nascent stage and Design for Behaviour Change is also in a similar state. Because of the maturity of the design disciplines and practice in general, the foundation for the professionals to venture into Service Design for Behaviour Change is in place.*



This study helped to understand the knowledge gap in Indian design professionals regarding service design and design for behavioural change, albeit in a broad and indicative manner. It revealed the need for comprehensive service design education including focus on behaviour change. The growing Indian service economy has created various opportunities for businesses. India also faces a plethora of wicked problems such as tackling corruption, traffic and transportation problems, slum settlements. Together, these present exciting and meaningful opportunities for service design professionals to make a difference. It seems several facilitating conditions such as Government enablers, maturity of design education, and presence of supportive industry and professional bodies are in place.

There were limitations in terms of the nature and size of the sample. To overcome the limitations to an extent, the survey data was triangulated with qualitative inputs from respondents as well as with informal inputs from educators and practitioners. This provided a relatively sound ground to the conclusions. Since we did not explore all kinds of design practitioners, as well as varied settings (for example, it did not include those in social impact ventures), it is recommended that future studies may encompass a larger and diverse designer population. Future in-depth investigations could focus on the causes, constraints and enabling factors which could help designers in India to successfully address the issues and opportunities uncovered. As well, future studies could focus on the problems and businesses where service design is applied, and behaviour change play a greater role in it. In this regard, social ventures might deserve special attention. It is expected that as time passes the practice and research in service design in India will mature. Therefore, periodic studies to assess the directions in which the field is evolving in India and identifying the interventions needed to strengthen the maturity process would be beneficial.

The study emphasized the various implications for the practitioners, industry, and educators in India. Positive signs and contradictions in relation to service design knowledge and practice were uncovered. As human behaviour plays a crucial role in service design, practitioners need to have sufficient knowledge about the various behavioural change models and theories. Practitioners seem to be learning on their own and they could access material available online. Currently, there are very few formal avenues to access to this knowledge though and hence actions to enhance that are required. Industry and professional bodies can play enabling role in creating formal avenues for practitioners to gain the required knowledge. Incidentally, most of survey respondents (73%) were employed by the large organization like IT Product or Services companies. Several such organisations and those from other sectors have in-house learning and development (L&D) departments which can take the lead to develop service design expertise. Several educational institutes as well offer learning opportunities to working professionals, which can play a significant role.

Indian educators need to play a crucial role in helping practitioners and industry to develop these skills in a systematic manner. Preparing the design students to meet new challenges and tackle the complex problems in a holistic manner is also a pressing requirement. Teaching design students the relevance and application of behaviour change and service design would be a key component of such a program. Collaborative efforts involving industry experts in designing the service design course as well as established institutes which are matured in service design could make the programs effective. These are the required ingredients to address the wicked problems in the Indian context.

The industry will benefit by recognising the need and urgency of service design to solve the wicked problems and develop these skills in their organizations. Encouraging designers to work on societal issues that provide the opportunity to hone skills may benefit the organizations to institutionalise the knowledge and apply in their business situations. The legal mandate that organisations must spend a part of their profits to fulfil Corporate Social Responsibility (CSR) could be a good avenue. Previously several Indian businesses were catering to customers from other countries. Thus, the design professional had limited or even no access to the end users. However, businesses are increasingly catering to the Indian

market, which provides easy access to the end users. This is a significant enabling situation. Instead of focusing only on the fragments of problems, now the industry can solve holistic problems. Such a push from the industry will help to expedite the maturity of service design practice in India.

Indian society and businesses are facing challenges and are in front of opportunities that could benefit from a synthesis of service design and design for behavioural change. This study opens the discussion about the Indian landscape of the appreciation, actions, and practice of service design.

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# The designer as agent of community

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## Abstract

A “changing paradigm” with a focus on design for social innovation (SI) has emerged over the last decade. (DESI, 2012) The title of this article refers to a perception of design schools and design students as potential “agents of sustainable change” adding new design-domains to the existing traditional design domains. (Chick, 2012, Emilson, 2010, Manzini, 2008, 2012, 2014).

The study finds it is hard for the design-students to establish their “roles” as designers and have a natural “authority” working in complex and time-limited process’. The paper produces recommendations for other educators in terms of preparing, planning and doing a SD for SI course and discusses the critics views on future requirements for Design-educations. (Bason, 2013, Mulgan, 2014, Norman, 2010)

The empirical basis for the article is a case used as part of the collaboration between VIA Design; Design for Change (DFC) in 2014-18 and four external partners; Teknologi i Praksis (TiP), the City of Aarhus, BorgerDesign and CareWare (CaT).

**KEYWORDS:** service design, design for social innovation, social innovation, design for change, welfare innovation, service design for social innovation, design education

## Introduction

As the challenges of the welfare state rises the need for multi-disciplinary insights from citizen perspectives emerged over the last 10-15 years in public management. (Brown & Wyatt, 2010, Jegou and Manzini (2008), Yang & Sung, 2016). Social Innovation (SI) is now used as a new human-centered paradigm of “*value-co creation*” for the long-term benefit of society” (Yang & Sung, 2016) in public management and public networked innovation process’.

In England The Design Council established the RED unit, based on trans-disciplinarity and consisting of both professionals from other than design-disciplines and designers, and Burns et al. (2006) described the units approach as “Transformation Design”, based on involving stakeholders as early in the process, through participatory Design. In Denmark we have had private design as well as public-funded business’ over the last 10 years trying to work their way into the new field of SI, solving public social issues and sustainable challenges, using SD methods. Amongst these companies like DesignIt and Mindlab (<http://mind-lab.dk/en>) have brought SD into SI.

## Theoretical Backdrop

SI is connected to the development of new initiatives, strategies, products, services or processes meeting the emerging demands that changes perceptions of authority flows, use of resources, organizations, basic routines or beliefs in the social system in which they arise. SI can be performed by a wide variety of institutions such as communities, associations, NGO's, charity organizations or municipalities or a combination of all. Biggs, et al. (2010) describes SI as a “bricolage”.



Table 1: The process of social innovation (Biggs et al., 2010)

The term “Service Design” (SD) has emerged as a topic in research as well as practice in design research and educations over the last decade. (Nisula, 2012). When defining SD, practices are often described as co-creational involving other professions and non-designers in the idea generating process, using involving methods and participatory facilitation methods. (Burns, et al., 2006, Holmlid 2009) SD implies designing *with* and not *for* people. (Sanders & Stappers, 2008) In this sense, the scope of the process can become *how* the actors relate in the value creation, (Kimbell, 2009) SD is often described as holistic and focused on systems, interactions and transformations. (Manzini, 2009).

New design disciplines emerge within SD, such as Transformation Design and SD for SI. (Nisula, 2012) These design disciplines boundaries may blur, but they are all concerned with the study of co-designing, design for social innovation and transformational change. (Jegou & Manzini, 2008; Sangiorgi, 2011, Wetter-Edman, 2014) In a SD for SI or Design for SI perspective, the DFC course creates connections between the two discourses of the design theory by suggesting that services can be co-designed with an aim of generating social innovation processes in which new constellations between the actors are being established, as well as some students “break-out” and make completely new concepts, co-creating value and social benefits to meet the future needs and perhaps establish alternative production and consumption systems. (Cipolla, 2016, Cipolla & Manzini, 2014, Manzini, 2016).

Yang & Sung (2016) proposes integrating the methodology of SD to create a sustainable mechanism supporting multi-disciplinary stakeholders continuous involvement in SI. Recent research shows the complexity and diversity of the interests of the stakeholders and how the designers often occur during the value creation processes due to the difference of views or values. (Yang, C. F., & Sung, T. J., 2016)

In the following the scope is how the design practice is unfolded and what role the designer has in a SD context, followed by a reflection on SD and SI and finally how value co-creation and SD works.

## The design practice and the role of the designer

The act of designing is defined by the capability of visualizing through the use of personal skills manipulating different materials. On the other hand the process of designing requires a wide variety of processing skills. The design process demands both communicative skills, being intuitive, empathetic, creative and capable of thinking deconstructive, holistic, iterative, divergent and convergent. On top of this a designer often has to have a human-centered approach, trying to visualize or frame the users minds, capture experiences and prototype

these with the user. (Kelley, (2001), Press and Cooper (2003), Wetter-Edman (2011).

In the DFC setting, SD for SI becomes a multi-discipline in which “T-shaped people” can collaborate. (Dijk, p. 110, 2011 in Stickdorn et al. 2011) T-shaped refers to the metaphor introduced by the design-company IDEO (Kelley, 2000) and describes the intention of having a broad (the top of the T) understanding in various disciplines combined with a deep (the vertical part of the T) knowledge in a specific area. Ideally the combination of a broader general understanding and a specific skill provides a tool enabling valuable collaborations providing viable service concepts and their implementation. (Dijk, 2011, in Stickdorn et al. 2011)

Research on the actual value-creation of the design-process’ is limited, but central to the idea of value-creation through the use of SD led innovation are 1. Human centered, 2. user experience based, 3. participatory and 4. a contextual understanding approach. (Wetter-Edman, 2014). The designers often have to position themselves in the midst of the challenges and move between different modes in iterative processes, trying to co-create solutions together with users or other designers. This thinking requires a high level of abstraction and an open mind towards creating unknown solutions, using visual thinking and multiple sorts of prototypes. (Cross, 2006, T. Brown, 2008) The encounter with, mapping of human experiences and interactions in the service are crucial to the design-process and the design-students. (Wetter-Edman, 2014).

In the DFC course, the aims were creating “ideas, systems or process” that could “enable or help the user to a better position, everyday life or understanding”. The aim of the course was also to bring the design students into new professional contexts, with a focus on creating a social approach using methods from SD for SI. So, understanding the expert-users experiences and working out-side-in to the core of the challenges was the approach of the designers. (Sangiorgi, 2012). But understanding the social and personal context, both in terms of actual psychical settings, irrational and sensitive values, (such as emotions, personality) issues of the person requires an empathic and often anthropological approach of the designer. Design ethnography aims at understanding the future users of a design and can be a helpful tool to work with for the students, as they try to identify with the people they are co-creating with.

In ‘Design for the 21<sup>st</sup> Century’ Inns, (2007) describes 6 roles of the designers. Inns describes the roles as; 1) negotiator of value, 2) facilitator of thinking 3) as visualizer of the intangible, 4) as navigator of complexity, 5) mediator of stakeholders and 6) as coordinator of exploration. (Wetter-Edman (2011), Inns, (2007:24). Attention has risen towards the role of the designer in the co-creating process’ (Leadbeater, 2008, Sanders & Stappers, 2008) and designers working for service innovation are often described as “*facilitators of co-design process*”. (Wetter-Edman, 2014.) Sanders and Stappers described in 2008 how the design practice is changing from a product oriented to a purpose focused design approach and how this influences the role of the designer. Sanders and Stappers, (2008) describes how the roles of the participants in a co-designing process gets “mixed up”. The designer has to be capable of listening, sensing and supporting the user-experts. So, instead of “designing only” the designer becomes an anthropological researcher and often have to perform at least two roles at the same time. In this process, the designer might even discover losing her own domain, the design-position, to a non-designer. (Dijk, in Stickdorn, et al. 2011)

Some of the methods used by the design-students can enable the person involved in mapping their lives and experiences are storytelling –personal narratives through the use of sketched “user-journeys” – “storyboards” made on-site with the person. It requires a holistic view of the persons lives. The role of the designer in the SD for SI is having a *human* rather than *user*-centered entry to the process and understand, real-life situations with the person, building empowerment and common narratives of a better future situation, (value-creation) through common visualization, storytelling and on-site prototyping and future possibilities

together. (Wetter-Edman, 2014) But, it is, by far, not easy and it will be influenced by the Designers personal values, prejudices and moods.

Yang & Sung, (2016) analyzes the key factors for developing a lasting design-led social innovation process. In 2016 they issued their research based on a large scale participatory action research program in Taiwan, including more than 4200 designers and volunteers involved in multidisciplinary SI program called “5% Design Action”. Yang & Sung, (2016) identified four types of key stakeholders for building a lasting value co-creation mechanism in designing for SI: 1: designers (referring to designers and other professionals); 2: NPO/NGO and Public participants; 3: private sectors participants; 4: co-creation platform owners. Yang & Sung (2016) defines the roles of the designer as foremost “challenging current positions” and contributing with a user and human centered focus resolving the challenges of the lack of resources by offering new outside-in perspectives, escaping old logics and restraints in the organizations. Secondly, their research, concluded designers developed “products” satisfying both the providers and receivers needs based on value-co creation process’. Thirdly the designers managed to combine and use their expert skills by using the SD methods and tools to facilitate and extract knowledge from multi-disciplinary debates, and thus lead the process into a deeper insight and a more efficient value-co-creation.

## Value co-creation in SI

Value co-creation processes brings risks and potential costs to the process of designing as well. It is based on working with multiple networks of people, values and systems, in which it can be hard to establish trust and common aims, especially in often very fragile or delicate social innovation issues. (Yang, & Sung, T. J, Prahalad & Ramaswamy, 2004) But using diversity as a social collaborative and praising multi-disciplinary can help generate dynamic open collaboration-models between the stakeholders. In order to meet the demands of many stakeholders wishes, the value should therefore preferably be co-created. But these value co-creations in service systems are highly dependent on resources, time and spaces for interaction. (Yang & Sung, 2016) Defining the key-stakeholders and their roles and their personal motivators is needed in planning the SI design-process.

Yang & Sung, (2016) proposes investigating “motivators” in the design-process, such as the expansion of specialty, as both designers and professional who worked for years in a certain profession could gain new knowledge and increase their practical capacity of working multi-disciplinary.

The NGO and public sector participants could, according to Yang & Sung find the roles of introducing the current status as well as guide the innovation process and presentation of the result in a wider complexity. Their motivators for participation and lasting innovation can be found in the injection of innovation and energy through the participation of external designers. Through long-lasting collaborations in the project 5% Design Action, many of the NGO’s and public sector participants became familiar with the applied methods and design tools in use over time. This became useful for the empowerment of the organizations capacity for own innovation. In the DFC program, many of the NGO’s and public participants already knew, used or had experience with design-led innovation, methods and tools. To them it really *is* a motivator for collaboration, as they already experienced the energy and enthusiasm from other projects, but to some of the “expert-users” these tools and the language connected to them, were unknown.

A meaningful motivator for the public sector to participate is entering in networked relation-innovation. Value co-creation with external stakeholders provides relation-making and lasting friendships and even new resources; man-power, skills, knowledge, technology, creativity and innovation. These motivators for participation were highly underlined by our collaborating partners from the both the public sector (CareWare / Aarhus Municipality) and



the NGO's. (Yang & Sung, 2016)

The fourth category; Owners of Co-creation mechanism, consists, according to Yang & Sung of the original initiators, coordinators and producers behind the process. Their role is to maintain and produce the innovation process. Their motivation would be an urge to develop sustainable business models, new networks and strengthen teams and professional growth. In our case, this would be VIA Design, TiP, CAT and Aarhus Municipality. According to this study, the motivation to join becomes stronger for external companies as the process contains strong capacities in compliance with what Yang & Sung found in their research. (See table 2)

**Table 2. The sustainable value co-creation mechanism in social innovation, adapted from Yang and Sung (2016).**

KEY STAKEHOLDERS	ROLE POSITIONING	MOTIVATORS
<b>Designers</b>	<ul style="list-style-type: none"> <li>• Challenging current conditions</li> <li>• Strengthening users' demands</li> <li>• Leading multi-disciplinary discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Expansion of specialty</li> <li>• Establishment of relationship network</li> <li>• Opportunity for self-actualization</li> </ul>
<b>NGO/NPO and public sectors</b>	<ul style="list-style-type: none"> <li>• Introducing the current status of issues</li> <li>• Guiding the direction of innovation</li> <li>• Delivering the results</li> </ul>	<ul style="list-style-type: none"> <li>• Injection of innovation and transformation energy</li> <li>• Establishment of relationship networks</li> </ul>
<b>Private sectors</b>	<ul style="list-style-type: none"> <li>• Providing human resources</li> <li>• Supporting funds</li> </ul>	<ul style="list-style-type: none"> <li>• Training of human resources</li> <li>• Injection of innovation energy</li> <li>• Improving resource synergy</li> </ul>
<b>Owners of Co-Creation Mechanism</b>	<ul style="list-style-type: none"> <li>• Producers</li> <li>• Coordinators</li> </ul>	<ul style="list-style-type: none"> <li>• Sustainable business model</li> <li>• Co-creation effectiveness</li> <li>• Team and individual growth</li> </ul>

## Critics of the Designers role as Agent of Community

According to Bason, (2013) design-methods have been applied in many kinds of collaborations in Denmark. But Bason sees a series of challenges, which are connected to using design-led innovation in the public sector: The first is, how to ensure the new design-led approach to actually find its "authority" within the complex nature of the many participants, stakeholders, users and end users. The second is about building and assessing capacity for using design-led innovation in the public sector. Design-led innovation has to become "internalized" to have an effect and cannot solely consist of external consultants (experts). Bason points the design-schools have to address the need and help the students to become agents of the communities. The third challenge is how to open up the bureau-crazy to co-production. As the public sector takes a more collaborative approach through design-led innovation it forces the public sector to work inclusive and multidisciplinary, across sectors and the political system. But dealing with many and different stakeholders can be an overwhelming task for anyone – also a designer. The underlying wish to act "with" rather than "for" the end users and citizens is challenging in SI.

Norman, (2010) is very explicit in his critics on the role of the designer in the new design-domains. He stresses several issues which needs to be altered at the curriculums of the Design Educations. According to Norman design-students are often puzzled by the fact that their solutions are seldomly implemented, and if they are, they often fail. This, he claims, derives from the design-schools where students are insufficiently taught. He writes: *"It is rare for design education to have course requirements in science, mathematics, technology, or the social sciences. As a result the skills of the designer are not well suited for modern times."*

To understand and interact with complex social or political issues the students also lacks requisite understanding and knowledge about technology, personal biases, basic scientific research and validation skills, behavioral sciences or academic research. Norman underlines how hard it is to find a valid testing method at the design-schools where designers often provide limited testing of ideas and concepts among their fellow students and only rarely

uses social or behavioral “blind-testing”. Instead Designers are practitioners who try to apply rather than extend knowledge. Scientists, on the contrary, are interested in truth. Scientists keep experimenting, trying to validate their insights between several theories. Designers often uses a “naïve psychology approach” in which they confuse the way they would prefer people to behave with reality. Designers are often unaware of the vast experimental and theoretical literature connected to the issues they work with and on top of that not aware of how to use statistical variability in their own designs, Norman (2010) claims. But how should the designers know how to deal with these issues, Norman asks. They are often taught by traditional designers who have no experience within the new design-domains. *“The uninformed are training the uninformed”*, he claims.

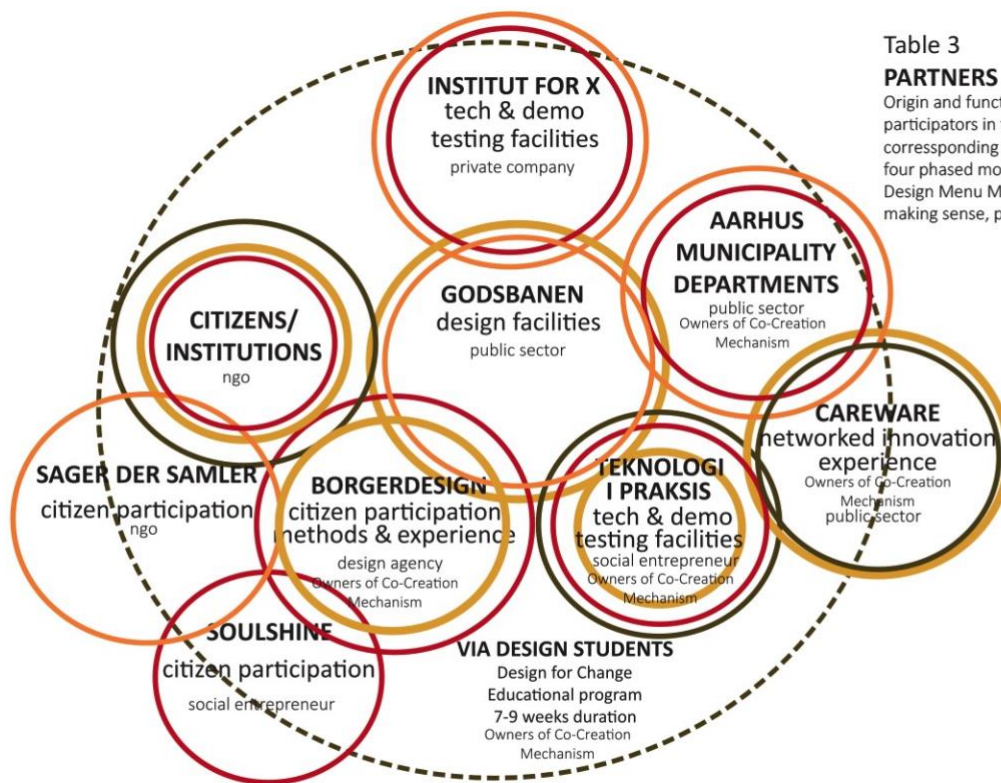
According to Norman, the design-schools need to adapt new disciplines to build skills and knowledge about scientific research, control and validation process’, technology, social science, organization and HR. The design-schools have to move away from being schools of architecture and art and into the fields of science and engineering, creating new people who can work across disciplines empowering the quality venue for the efforts of the practice of designers.

## Empirical setting:

The DFC course at VIA Design has a collaboration with the Center for Assisted Living Technology (CAT) under the City of Aarhus. The Center for Assisted Living Technology hosts the CareWare, and Teknologi i Praksis, (TiP) a social-economic business. The purpose of our collaboration with CAT is to develop new services, designs and solutions as part of the DFC course. Moreover, the collaboration aims to increase students’ understanding of how to use their professional and academic skills in a new social context and co-create solutions with users of welfare innovation. The co-design-facility for the students was Godsbanen, an entrepreneurial site for NGO’s, designers and start-ups in Aarhus.

To the students the possibility to see welfare innovation at TiP’s showroom increases the understanding of the great potential of this area, providing students to understand how projects are designed, the technology used and products applied. The products exhibited include smart textiles, fold-up scooters, geriatric aids in wood, furniture and new wheelchair concepts. In addition the students were introduced to other start-ups, social entrepreneurs or NGO’s working with SI.

Table 3 gives an overview of the participating partners and their roles, as defined by Yang & Sung (2016).



**Table 3**  
**PARTNERS AND ROLES IN DFC**  
 Origin and function of the different participants in the design process corresponding with Lucy Kimbells four phased model from the Social Design Menu Methods: exploring, making sense, proposing and iterating.

## Methodology

The study was performed to discover if and how VIA Design and the collaborators in our Design for Change (DFC) course could apply SD for SI methods and how the value-creation could improve in order to enhance the collaboration and innovations made. This was done over a four-year action research study of four DFC courses at the length of between 7 and 9 weeks, from 2014 – 2018. Action research shortens the gap of practice and theory (Elliott, 1991) and by adding participatory to action research, this implies the researcher and author of this paper being part of the process from start to end. (Mills, 2000) The study is based on an in-depth case study of collected data using a number of qualitative and ethnographic methods to support the research objective and consisted of three types of data: transcribes from qualitative semi-structured interviews, observation notes, and documents and various objects from the course.

See table 4 for an overview of participants, themes, number of innovations and interviews made.

Time & duration	Design for Change '14 8 weeks, Sept. - Nov. 2014	Design for Change '15 7 weeks, Sept. - Nov. 2015	Design for Change '16 9 weeks, Sept. - Nov. 2016	Design for Change '17 7 weeks, Sept. - Nov. 2017
Category / challenge	Arthritis as a motion barrier	Elderly and Fall Incidents at home	Social Exclusion and Isolation among young immigrants	Sclerosis as a social obstacle
Number of Designers	17	21	25	22
NGO & Public Sector participants	6	7	5	12
Private company participating	4	7	1	7
Interviews	8	11	8	10
Sustainable innovations	1	4	2	3

Table 4. Data collection showing number of designers, NGO's, Public Sector, Private Companies participating as well as number of interviews and sustainable innovations between the participatory action research over the years 2014-2017.

The design-methods used in the course were "The Social Design Menu Methods", (SDMM)(Julier & Kimbell, 2012). SDMM differs from other design-tools as it combines business-, management-, social sciences- and design approaches in one. It has a focus on iteration and testing in the field. It reflects on the fact that a toolkit can't change anything without understanding people, habits, values and social conditions. The SDMM brings a short introductory debate about what a design-led approach means, some 11 methods and canvas-templates for adaption, all containing an easy to understand introduction of how to use the methods in four different modes of activity.

The overall structure of the course contained seven phases; **A:** Bringing the students out of the design-school and into a new design-setting; Godsbanen. Introduction and presentation of the creative communities, workshops, facilities, and Start-Ups of the setting. **B:** Theoretical phase, (still on site); introduction to SI and the SDMM tools, **C:** Introduction to the collaborating partners and their challenges with an already chosen theme; visits at their "home-bases", users, potential co-designers and employees. **D:** Exploration and in-depth anthropological and ethnographical research phase, visiting the involved users, associations, corporations trying to identify the challenges. **E:** Design and Iteration phase, encompassing prototyping, testing and iterating, **F:** Test-phase – visiting users, inviting to pre-launches and demos and **F:** Final Presentation of concepts and ideas with all external collaborating partners at Godsbanen or the participating partners premises.

## The designer as Agent of Community in practice

The SDMM introduces four modes which the students can apply when developing a concept or a service: Exploring, 2. Making sense, 3. Proposing and 4. Iterating. These modes work as guides rather than restrictive instructions and are free for the students to adapt their own approaches within these four modes. The students in the DFC course are led to understand three core elements of "the social world": **1. People.** *"Often somehow ignored in designing services or represented by people who speak for or interpret others".* **2. Things.** *"Material and digital things and the living habitats in which they encounter one another (touchpoints and boundary objects)".* **3. Organisations.** *"Teams, committees, statutory bodies, voluntary or community groups, small or medium-sized businesses, global corporations, virtual organisations..."* (Julier & Kimbell, 2012)

After this introduction the students are introduced to the seven habits of social designing: "1. Tell stories and make maps 2. Work at human scales and connect across networks of people and things 3. Look at both the detail and the big picture 4. Make things to explore, test and learn 5. Imagine scenarios of use, and provoke and inspire alternatives 6. Make the familiar unfamiliar and the unfamiliar familiar 7. Create designs that are based on the ways people actually do things, rather than focussing on what people say they do, or what other people think they do." (Ibid)

Table 4, is an illustration of how the students worked during the weeks, using the 4 phases; exploring, making sense, proposing and iterating.



Table 5: Aligned scheme of activities during the Design for Change course using The Social Design Methods Menu, (Lucy Kimbell and JoeJulier, 2013). This work is licensed under a Creative Commons Attribution 3.0 License. Source: [www.lucykimbell.com/stuff/Fieldstudio\\_SocialDesignMethodsMenu.pdf](http://www.lucykimbell.com/stuff/Fieldstudio_SocialDesignMethodsMenu.pdf)

■ exploring ■ making sense ■ proposing ■ iterating

#### Design for Change Course, action and methods overview

<b>Week one: EXPLORING</b> Action: The students try to identify anomalies by visiting users or communities and organisations with knowledge about the current theme. Active collaborators are BorgerDesign, CareWare and Teknologi i Praksis	<b>Expected outcome</b> The students become aware of the practical and personal dimension of the users and the encounter provides insight on what works and what could be better as co-designing starts, though it's hard to make reliable appointments
<b>Week two: MAKING SENSE</b> Methods: The students often choose to use the Drivers of Change and Problem Definition methods in trying to make sense of their first field-research and build their first problem definition, on site.	<b>First challenge in outcome expectations</b> It takes time and is often difficult for the students to explain the big canvas, on site. But the canvas' are useful as documentation of common insights. The challenge is concrete - the students have to leave the users physical area to go back to the design studio and work on the problemdefinition
<b>Week Three: PROPOSING &amp; ITERATING</b> Action: Working in the design studio with (Re)defining the proposition and a Outcomes Matrix Canvas for specific groups or stakeholders. This is also done at "Godsbanen" or the designschool.	<b>Second challenge in the outcome expectations</b> The students try to clarify what a service will offer participants and how it could lead to outcomes you want to work towards, which you may not be yet able to define or assess without the end-users or stakeholders.
<b>Week four &amp; five: ITERATING &amp; PROPOSING</b> Action: The students often stays in the studio iterating and reframing the service ecology, using touchpoint definitions and descriptions of possible new touchpoints or drivers of change. Different stakeholders are often invited to a halfway dissemination of the ideas and prototypes.	<b>Third challenge in the outcome expectations</b> The students see opportunities to reconfigure resources in the service ecology and/or get feedback or ideas from those of the stakeholders who can participate in a halfway presentation. The students are now often away from the actual psycal and personal environment of the end-user.
<b>Week 6, 7 &amp; 8: PROPOSING &amp; ITERATING</b> Action: The students create prototypes and blueprints for a future version of the service and prepares prototypes for final presentation. Reflects on how frustrating it is to deliver unsatisfying concepts. A few students continue working with the end-users in real-time labs on site.	<b>Fourth challenge in the outcome expectations</b> Students are able to have a collective conversation about how some of these proposals can or cannot change the lives of the participants. But most students stays in the designstudio due to the lack of time and complexity of intervening with the stakeholders, users and/or other professionals.
<b>Week 9: Final presentations and awards</b> The final presentation provides a chance to become part of a start-up mentoring program made by Health & Rehab and CareWare. Often end-users, stakeholders and naturally BorgerDesign, CareWare and Teknologi i Praksis forms a Jury and selects three winners.	<b>Outcome reflections</b> The Social Design Menu Methods contains several "recipes" for gathering resources, engaging stakeholders, and learning from cycles of quickly prototyping ideas. But time issues and absence of "real" collaboration often leaves the first designs and ideas as real prototypes, that needs to be improved over the later collaboration in the mentoring program. The methods and the "modes" works well in a professional design context.

In the interviews 70% of the students found it helpful using SDDM approach in the design process, even though it meant having to call, visit, interview, observe and interact with all the partners in the project. On the other hand observation showed some hesitance and "fear" amongst some of the students towards how to deal with the big issues and personal problems presented.

The 11 different methods and canvas' meant a lot of guidance in what method to choose, giving a variety of methods of documenting the experiences and expert-users and their personal world, using both objects, personas, skills, ethnography and the students own assumptions. The students became negotiators of value (Inns, 2007) – as they had to work directly with the persons involved. The students often had internal problems in the design-teams to deal with, regarding leadership and positions in the process as well. This could slow the process significantly and in the end corrupt the process. Often discussions were concerned with time, planning and who did what. The concern was mainly on who and how they could get the needed information the fastest way. The role as mediator of the stakeholder (Inns, 2007) depended on how well the teams were at interacting - visiting and involving other actors. This could vary a lot, dependent on each design-team.

In redesigning the course it was needed to guide the students into co-creation process' and its focus on iteration, field-studies, design-ethnography and outreaching research methods. Even so, it is still clear that some of the groups remain locked in a traditional PDCA (Plan-Do-Check-Adjust) approach to the process. This means many of the teams still may perform interviews and then returns to the design-studio and start designing. As an educator, it is impossible to know the doings of all teams, but a "push" of the students into iterations is often required. In the re-designed courses focus has been on trying to help the students manage through the flow of the unknown, whilst still keeping pace with a planned sequencing of the design process.

The students performed well as visualizers of the intangible in all the phases and years the DFC course has existed. The role as the navigator of complexity is a hard position to take for a young student. The complex issues revealed large gaps of knowledge when dealing with people suffering from sclerosis, visiting elderly homes or negotiating with a leader in the municipality on new findings and suggestions for future solutions. Many of our collaborators became the mediators of the stakeholders or coordinators of exploration – as they mentored the students. Some students suffered from not understanding the overall “holistic” or T-shaped approach to the design process, as they were stuck in the perception of the designer as designer of objects or products. But the design students definitely have a potential as “Agents of the Community” if they are taught new disciplines, methods and a holistic approach.

## Findings of the article:

Some of the findings of this study points at a series of challenges when using designers in a SI process. Some of these findings are corresponding with the findings of Bason, (2013), Mulgan (2014) and Norman, (2010):

1. The challenge of Commitment. 70% of the students left the projects when they had passed their tests. In that sense it was hard to demonstrate any lasting effect of the work committed.
2. The challenges of reality, people and scientific validation. Many of the students were (deliberately) ignorant of appropriate experimental procedures, controls or scientific research methods. The designers used design-tools to examine the challenge and jumped to conclusions too fast, not examining alternatives, statistics, biased assumptions or data in a validating approach.
3. The challenge of Implementation. The students need more knowledge about ethnography, sociology, culture, economics, and organizational issues to prevent the ideas to stay on the limitation of single projects of a “What if?”
4. The challenge of Learning through interaction. Between 30 and 40% of the students were very reluctant to interact and learn from users or other experts. These students were mostly very focused on the actual design, the method or the process and not the holistic learning-process in which they participated.
5. The challenge of language and methods. The language and methods presented in the SDDM canvas’ were useful tools for the designers to demonstrate and document their progress’ or failures to each other, the educators and some of the collaborators. It gave us frames for development, but on the other hand it did become obstructing at times, when the students were using the methods with co-producers. The design language was new to some of the users or patients and this generated lots of frustration and complex situations.

As a planner of the DFC course, I consider it a challenge to make the students committed to working with the challenges they face. The biggest challenge is to set up spaces and forms of interactions making it possible for students to interact genuinely and in collaboration with the users. Experience shows that solutions are rarely being implemented after the end of the DFC course and that part of the reason for this is students’ lack of genuine participation in the process. As a result, the solutions created, were not always representative of the owners or the co-creators. (Norman, 2010)

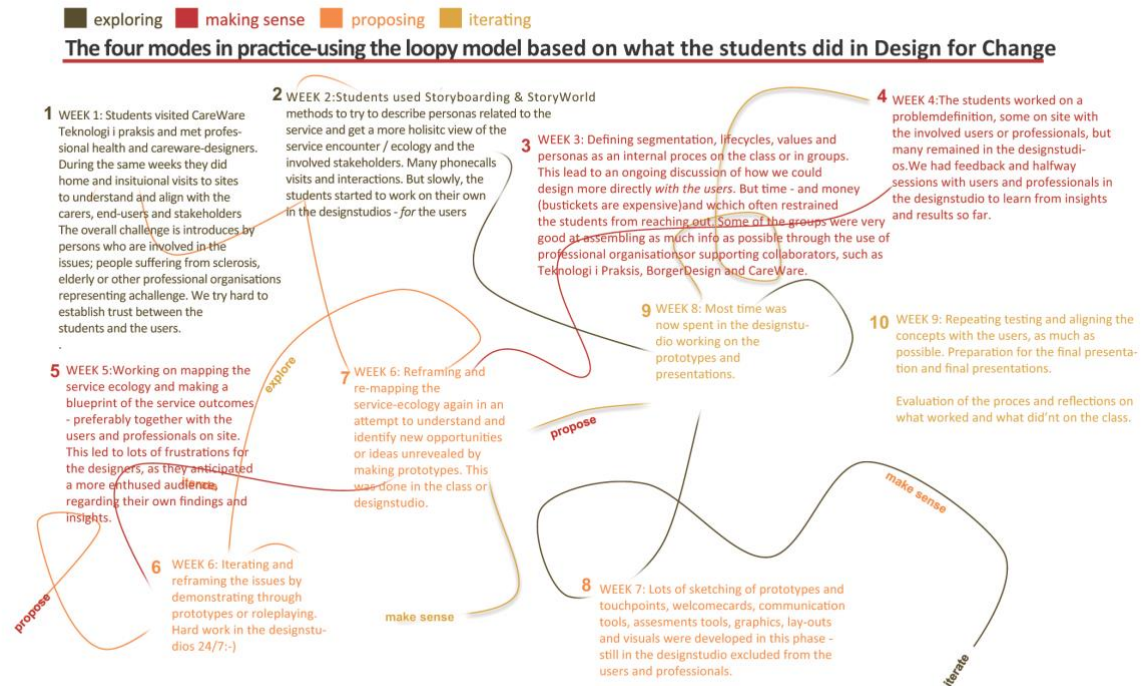


Table 6: The use of modes during the Design for Change course using The Social Design Methods Menu, (Lucy Kimbell and JoeJulier, 2013). This work is licensed under a Creative Commons Attribution 3.0 License. Source: [www.lucykimbell.com/stuff/Fieldstudio\\_SocialDesignMethodsMenu.pdf](http://www.lucykimbell.com/stuff/Fieldstudio_SocialDesignMethodsMenu.pdf)

## The outcomes and service designs for social innovation

We try very hard to implement some students' designs with CAT and Teknologi i Praksis, but it requires the students have the courage and desire to follow up on the implementation of their ideas or designs. A few projects have been nominated to participate in CAT's national social innovation competitions, and three designs at the Health & Rehab trade fair for welfare design, etc. at the Bella Center (<http://health-rehab.com/>). Designs shown at the fair include "PCOnality – community for women with PCO, ([www.pconality.com](http://www.pconality.com)), "Daily Balance" and "Goldy"; two products that aim to prevent falling and where senior citizens earn "social points" and wear "fall belts" in their homes.

## Recommendations and conclusion

If the design students are to become "Agents of the Community" we need to introduce and teach other disciplines and methods in the future. Norman (2010) puts it this way; *"Today's designers are poorly trained to meet the today's demands: We need a new form of design education, one with more rigor, more science, and more attention to the social and behavioral sciences, to modern technology and to business. But we cannot copy the existing courses from those disciplines: we need to establish new ones that are appropriate to the unique requirements of the applied requirements of design."* (Norman, 2010)

Here are some suggestions and recommendations:

A: Teach service design "thinking" and motivational psychology.

The first step could be to try to alter the immanent perceptions of anything through working with the students in design courses with a focus on motivational psychology, thus mapping the journey of the collaborators in a service blueprint together. (Bisset, p. 300, in Stickdorn et al., 2011) By doing so, the students, as well as the other participators could try to define what motivates a community to innovation and get a grasp of the importance of a human-centered, collaborative, iterative, sequential, real and holistic approach to SD. (Stickdorn et al., 2018) In other words, we need to ask tough questions about "the why" – our fundamental motivators for design interventions and the stakeholders involved. (Bisset, in Stickdorn et al., 2011) To become an Agent of community, its not about tools but getting

motivated for changing reality. By working with the motivational psychology the durability of an innovation has a larger chance of improving. Yang & Sung (2016) also provides a frame for setting the motivators and describes how these influences the process, as well as they recommend keeping the track of the process, before, under and after the intervention. This map could also work as a overall “journey map” for the design process for both students, co-creators and educators during the process.(Stickdorn, Hormess, Lawrence, Schneider (Ed.)2018)

B: Teach (social) Science at the Design Schools.

Design students obviously lack systemic/political and (social) scientific insight to be part of SI processes. The DFC course revealed gaps in students’ knowledge about social conditions, management, economics, etc. This challenge has been identified by several researchers; Bason (2015), Chick (2010), Mulgan (2014) and Norman (2010). Giving “authority” (Bason, 2013) to the designer in a SI process requires an understanding of the social frame / and thus the whole concept of the SD for SI holistic logics. But the designers also lack fundamental knowledge on how to demonstrate scientific validation for their value-propositions.

C: Teach the roles of the T-shaped designer. Working with the students on what T-shaped means can provide a respect for other professions. Designers can’t work alone but should be part of interdisciplinary constellations supporting a high professional innovation standard. This is pointed by Bason (2015), Mulgan (2014) and Chick (2010).

D: Teach the partners.

The co-creation partners require tools to understand design language and methods. Therefore, there is a need for introductory processes with the partners illustrating the purpose and taxonomies of the teaching methods/didactics. The study showed a majority of our collaborating partners had a fixation of “design and designers” as “producers of things, objects or aestetichs”. There is a need of providing an understanding of SD as series of actions and design as a “concern” or “dedication” shifting focus to relational or immaterial components orchestrated in a co-creation process with many Stakeholders contributions. (Bason, 2013, Troncon, in Stickdorn et al., 2011)

E: Establish lasting and real “spaces” and “labs” for the communities and the designers to interact in. Emilson, (in Ehn et al. p. 19 (2014) describes the emphasis on establishing long-term relations and using prototypes as a way to explore anomalies and possibilities. He describes three methodological frames for the design led collaboration. The first is to set up collaborative design processes where the diversity of the stakeholders can work side by side and thus become supplementary to each other. The second is to build long-term relations and trust within the participating stakeholders. The third is to demonstrate fast prototyping to explore possibilities in real-life contexts, still showing anomalies and dilemmas. (Emilson, in Ehn et al. p. 20, 2014)

F: Teach the students technology

The designers need to be introduced to the wide world of IOT and technological wonders of this world. Integrated technology into designs requires basic knowledges and practice. (Norman, 2010)

Some of the other challenges are the obvious ones; time and money.

When setting up the framework or trying to find the useful tools for creating design led SI it is urgent to make the methods do-able and understandable in real organizations where resources are often low, time is stretched, attention likely to be limited and management often unwilling or reluctant to try out new unknown or insecure concepts even if they are met with the most omnipotent Agents of Community. So, be prepared.



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# From user-centred to stakeholder-oriented service design: Implications for the role of service designers and their education based on an example from the public sector

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## Abstract

This working paper reflects on an inquiry into a current service design practice, by sharing insights into the changing role of service designers and by outlining implications for service design education. It is based on ethnographic research with a public-sector service design agency. Observations suggest that service designers become increasingly concerned with and integrated into the organizational context that they try to change.

This paper then firstly gives a real-world example of the deep integration of service designers in a client organization, a council, it continues by describing the interactions and relationships that service designers have with this organization and then identifies potential for research and education by discussing these findings in relation to service design education using the example of product and service design courses at the Glasgow School of Art and discourses from literature.

**KEYWORDS:** service design, service design education

## Introduction

The design field is evolving fast and continuously, opening up new perspectives for the profession. Service design is a good example of this dynamic, as it is a relatively young specialism within design that is constantly re-defining what designers do and how they do it; reshaping their engagement with clients, communities and citizens. An example of the shifting disciplinary boundaries are overlaps between e.g. Service Design and Transformation Design (see for example: (Sangiorgi, 2011) and other disciplines, such as policy (see, for

example: (Junginger, 2016). Design ventures into and overlaps with areas where it is not sufficient anymore to focus exclusively on the end user to ensure the provision of meaningful offers and their delivery. In addition, organisational stakeholders have become important recipients of design solutions as well. Further, the shift from design with users to design by users redefines the practice of designers and has implications for their education.

Such new design practices might be articulated and shared through research and publications, but they occur where design practitioners face challenges that require unique responses to elusive or evolving requirements. Novel approaches to design and their nuances are not always captured and communicated and, if so, often only with considerable delay. This research project aims to help bridge a gap between practice and academia, and here specifically education, by starting a dialogue that will help educators learn about the skill sets and attitudes that support novel practices.

We decided to submit a working paper to ServDes 2018, as we think this research can make a contribution to Track 1: Learning and Practicing. Since the analysis is still in progress, we see the conference as an ideal opportunity to put insights from the research, that took place in August 2017, to the community of scholars. We are looking forward to receive feedback at this early stage of the process to further direct and inform the analysis and findings. Thereby safeguarding any potential pitfalls that a more curtailed or protective approach to research might yield. We want to openly share this research to inform scholarly debate, hopefully inspire others and gain valuable critique from experts in the field. This paper is intended to provoke a discussion that will benefit scholars and support the development of service design education.

## Theoretical Framework and Research Question

### Setting the Frame for this Research

This research draws insights from a specific area of service design, the design of public services, which often involves the interaction with public sector bodies, such as local government councils, in the UK. In recent years, the design of public services has received growing attention from service design academics and practitioners (see for example: Bason, 2014; Junginger, 2016; Sangiorgi & Prendiville, 2017) with sub-disciplines of health care (Car, Sangiorgi, Büscher, Junginger, & Cooper, 2011; Cottam & Leadbeater, 2004; Jones, 2013), government (Bason, 2014; Thoelen et al., 2015) and communities or social innovation (Brown & Wyatt, 2010; Manzini, 2014; Koskinen & Hush, 2016). There are now a number of agencies that work with or for government, or have done so, such as Engine, FG, Government Digital Services and the InnovationUnit.

As described by Sangiorgi, Particio and Fisk (2017), the context for service design is increasingly becoming more complex, this is in parts due to the effect of technology on the operations of client organisations and the resulting increase in interactivity between stakeholder networks. Significant in this context and with regard to the evolution of design and the designer's role is the fact that the interaction between designers and organisations as stakeholders is becoming more profound, better understood and articulated (see for example the work of Sabine Junginger; Jelinek, Romme, & Boland, 2008; Michlewski, 2008). This has led to a growing body of research and literature that concerns itself with different aspects of the changing role of design in the face of deeper involvement with organisations on their various levels (such as operations, service provision, service procurement as well as decision-making and leadership). Building design capabilities within organisations has become an important focus for designers, as well as the adoption of design as a management principle for organisational innovation (Romme, 2003; Boland, Collopy, Lyytinen, & Yoo, 2008; Murphy, McLean, & Herfurth, 2015).

The research and literature described above further establish a shift in design that was initiated by the interpretation of design problems as wicked problems. The resulting articulation of an extended taxonomy of design artefacts in Buchanan's (2001) four orders of design or Krippendorff's 'trajectory of arteficiality' (Krippendorff, 2005) anticipated that the categories of subjects of design are being extended considerably – from signs and physical artefacts to systems, environments and discourses.

As a result, a shift in attention from previously dominant discussions around co-design and user engagement can be observed. As Herfurth (2016) suggests, the identified convergence between what people do when they design and when they organise leads to novel interpretations of the relationship between designers and their creation, resulting in a dynamic where the roles of the user and designer merge (Cottam & Leadbeater, 2004) and the creator-to-creation relationship becomes integral rather than separated.

At the same time, the professional understanding of designers has evolved from expert designers to those who acknowledge expertise of stakeholders and facilitate their contribution when tackling wicked problems. Manzini (2011) emphasises the continuing shift from linear processes to iterative and collaborative forms, and the turn towards service and systems.

The following indicators are a result of the above observations and summarise the development of the discipline for the purpose of this research:

- Dematerialization – referring to the shift away from physical artefacts and defined solutions to systemic and social contexts and wicked problems.
- Modes of inquiry: designers become part of the context they inquire into, they are not exclusively the ones who change the context, but are also affected by the inquiry and resulting changes. Modes of inquiry shift from distant and detached to immersed and interventionist.
- Post-disciplinarity: designers are not the ones who develop future solutions anymore, but propose conditions that allow stakeholders to articulate and realise preferred, but dynamic states.
- Design and organizational change: convergence of design and organizational theories. Interdisciplinarity as a result of post-disciplinarity. Collaborative, generalist, cross-disciplinary.

This background is important if we want to understand the character of changes that service design is undergoing. When considering the emphasis on user engagement as evident in concepts such as design thinking, the identified significance of design for organisations beyond user-engagement becomes relevant.

## Research Question

The above articulated observations from research and literature make it relevant to consider the way that design is taught and the mechanisms and principles that are employed to convey experiential knowledge in design education.

Live projects and studio pedagogy have shaped design education over the past decades (Green & Bonollo, 2003) and are still employed today as an educational approach that acknowledges the experiential character of design knowledge and its often practice-based origins. It is practiced at design schools such as the Glasgow School of Art. At its core it can be described as a 'student-centred approach' (Tovey, 2015, p. 85) with elements such as peer-review, project briefs, dialogue and crits (ibid) all aimed at simulating the work practices of a specific community of practice (designers in this case) while maintaining the control of an academic institution over the curriculum.

In correspondence with the call for papers for Track 1 of ServDes2018, this research tries to shed light on to the evolving roles that service designers find themselves in contemporary practice. As established in the literature review, current literature and research is addressing the expansion of designers' engagement with organisational dimensions, such as capabilities and transformation (Saviranta & Eloranta, 2014), and the shifting landscape of design practices as more and more agencies and consultancies from management and digital sectors adopt service design methodologies and employ service designers. Where more detail and nuance in research and literature appears to be required is the synchronisation, or lack thereof, between the development and adaptation of service design in practice, its reflection and account in literature and research and the integration into teaching. From literature, it is not quite clear how information flows between practice, research and teaching, where the innovation of practice, research and teaching resides and how we as academics and educators can access this and maintain at the forefront of or at least keep up to date with evolving research and practice.

A question that arises then might be, to what degree design education has responded to such developments and how adequate the educational strategy of studio learning still is for a changed landscape of design, where evolving social interactions form a core element of what designers do and the way they solve problems or identify opportunities?

This paper responds to this question by exploring how practice, theory and education can better inform each other.

## Methodology

### Research Design – Longitudinal Observation and Semi-Structured Interviews

The research design of this study is inherently qualitative, freely taking advantage of the researcher's capacity to make sense and creatively, yet rigorously interpreting observed phenomena.

Although this research was led by an interest that got articulated prior to entering the field, it enquired into phenomena that are less explored and are assumed to be evolving – the practices of a specific design profession. Therefore, this research design represents a bricolage of a thematically defined interest in specific questions around evolving design practices, informed by literature and existing research, and the more exploratory character of grounded research. The exploration of phenomena in a dynamic situated context through the subjective, personal observation of the researcher have been described as potentially more adequate to generate deep insights than methods that limit the researcher to learn about the perception of others through i.e. statistical analysis or surveys (Mintzberg, 1979).

This inquiry sympathises with an ontological perspective that positions it within a nominalist paradigm, where reality is seen as constructed by individuals who make sense of the world by subjectively assigning labels to objects that surround them (Burrell & Morgan, 1979; O'Dowd, 2003; Suchman, 2007; Easterby-Smith, Thorpe, & Jackson, 2012). It is interested in a deep understanding of how meaning is created through people's experiences (Easterby-Smith et al., 2012), their behaviours and actions and builds on ideographic methodologies, assuming that the 'social world can only be understood by obtaining first-hand knowledge of the subject under investigation' (Burrell and Morgan, 1979, p. 5).

## Methods Applied in the Field

Primary research consisted of a hybrid design that saw a three-week period of in-depth observation and shadowing of FutureGov (FG) combined and complemented by interviews with three other agencies that practice Service Design, although not in the public sector, but private, commercial sector.

The engagement with FG was from the beginning characterized by a transparent collaboration between FG and GSA. While research aims and objectives were communicated with FG for their review and agreement, to see whether they were comfortable to share the information requested, it was also the intention for GSA to learn about any questions that FG wanted answered or explore through this research collaboration.

In this respect, the research design was inclusive and collaborative, but doesn't qualify to be called participatory as the integration of research participants was too limited.

Methods utilized during the three-week engagement with FG are observations of project work, client meetings and presentations, internal meetings and crits, project groups, social events and project planning sessions with clients.

Field notes were a reliable means to capture reflective memos and initial analytical interpretations of observed phenomena. Specifically, in situations where the nature of interactions and conversations didn't allow for photo, video or audio recordings to capture observations, the field notes became a means of documentation as well. Extensive field notes are understood to contribute to the generation of 'rich data' from observation that provides a 'solid material for building a significant analysis' (Charmaz, 2006, p. 14).

The deeply collaborative character also permeated through to the interviews, which not only were semi-structured and partially open, but on occasions became conversations as participants reflected on their own experiences and became interested in what insights the researcher might provide to their areas of expertise.

## The Role of the Researcher and his Attachment to the Research Context

Since the research collaboration often felt more like colleagues sharing their experiences rather than a researcher entering a closed community of practitioners, the researcher's role iteratively moved between observer as participant and observer as non-participant (Anderson, 2008).

As the researcher became more familiar with the research context and participants his role oscillated between a distant observer and a colleague, which allowed him to gain deeper insights and experiences of the research context through more informal interactions and conversations.

## Preliminary Analysis – Triangulation and Sequenced Validation in the Field

Triangulating interviews with each other and with observations became an effective and situated routine for sense-making. Between interviews the researcher would reflect on previous information and continuously build theoretical sensitivity (Glaser, 1978) towards evolving patterns from interviews. Succeeding interviews were used to validate the researcher's understanding of patterns by slightly adapting the focus of interviews. This



revealed nuanced dimensions of phenomena and discrepancies in individuals' experiences and accounts as well as potential inconsistencies in the researcher's assumptions.

Saturation built up gradually while in the field and was supported by the conscious refinement of preliminary insights and their validity and relevance. Since the interviews were distributed over a three week period a routine was established that saw reflections on observations and interviews taking place approximately three times a week, after leaving the research context. This allowed for a continuous reflective element to be integrated into the ongoing primary research and in parallel supported interpretation towards preliminary analysis while still in the field.

## The Research Participants

In total five projects were observed in varying depth. 15 semi-structured interviews with staff were conducted and extensive field notes were compiled. In addition, staff shared project reports, FG granted the researcher access to the agency's online data base of design methods and processes and included him in their various communication channels on *Slack* (a project management and communication platform).

Participants in the research were recruited from throughout the organization with an emphasis on service designers. The interviews included all organizational functions from the co-founder and management team to the service designers, design researchers and developers.

## Case – FutureGov and the Essex Project

### Introducing FutureGov

FutureGov is a public sector agency that works with local government. With 35 members of staff, it can be considered a larger agency. There are four wider professional foci that members of staff cover: service design, user experience design, organizational design, design research, product management and digital product development. FG has worked with around 100 local authorities in the UK, as well as government bodies in Australia, UAE, and Armenia, Macedonia, Georgia, Turkey.

Historically, FG started as an agency that drove change in local government by introducing digital technology. It was founded in 2008 and started to employ the first service designers in 2008. Early projects were on a small-scale innovation and change model, working with individual services to reshape their offering to citizens using digital and design tools. This moved on to a lab-based model, where teams from FG merge with teams in services, to work on research, design, testing and implementation together- staff members within the councils are being trained up and have experience of design and digital working methods, tools and techniques for future projects they may run. Working in a lab gave a concentrated space for new ideas to be allowed, for trial and training but also as an open space the invited other interested parties in - widening the pool of influenced people within the council.

Current projects build lasting relationships with service teams, managers, senior staff and leadership teams in local councils, working together to establish goals and ambitions for the organisation and seeking out potential. This focuses attention towards switching mindsets, and seeing the interconnectedness of council services. It asks senior staff to move away from

seeing a council as a series of departments with annual reports and budgets, and start to see the whole service offering they should be making to their residents, and to their staff. What services are really there for, what they should be offering, how they should be approaching data and technology use, where they can work well with other services, and what that all means for the future shape and running of the organisation.

Service designers at FutureGov come from a variety of professional and educational backgrounds, and colleagues who create coded prototypes consider themselves designers as well. It asks all colleagues to be collaborative in their approach, to ask for feedback, share newly formed ideas for input and strengthen ideas post-testing with combined experience. FG's approach is to bring colleagues with different strengths together on a project, forming ideas together to ensure that all angles (design, technology, change) are tackled at once and are there from the start.

## The Essex Project – Deep Integration in a Client Organisation

The Essex County Council Project is characterized by a traditional organisation seeking to bring about change on several levels. Working with frontline service staff; social workers understanding care needs of older individuals and their families in hospitals, care professionals visiting people settling back at home, drivers, staff members answering phones and helping parents of children with special educational needs arrange transport to school. FG also works with back office staff and team managers; those managing the finances for a service, IT teams building online forms and managing communications channels and managers with visions for the future of their services. As part of this project, FG joins up conversations of those who work within a service with senior leaders of the council, who are rarely exposed to user stories and outcomes.

The resulting relationships allow managers to own the future of their services, while senior leaders to act as networkers, helping to pull services closer together. In Essex County Council, the second largest council in England, FG have been working with staff to develop service redesigns, build internal digital delivery teams, advance the senior mind-set to one of collaboration, learning and sharing while work is in progress. FG is now seen as a digital partner, advising and encouraging the teams within the council in agile project management, user centred design methods, data management and technology procurement.

Councils in the UK are under great pressure to change and improve efficiency as austerity cuts impact on their funding and have consequences for the delivery of services. This backdrop is relevant when inquiring into the interaction between service designers and the client organization. Designers find themselves in not only difficult economic circumstances, but confronted with politically highly sensitive organisations. Essex council has a high ambition to save financial resources and the recent re-organisation of department heads as well as fear of job cuts has influenced the organizational mentality to a degree that incoming advisors are easily associated with measures that could have a negative effect on the individual employee.

During the research it became apparent that FG is aware of this situation and that this requires a sensitive approach to design interventions. Service designers need to be prepared to enter these workplaces, to understand how staff members are likely to react to their presence, to introduce their purpose clearly, to champion openness and honesty, make their work visible and share stories learned.

## Findings

In the findings section we present insights from fieldwork, gained through observations, shadowing, interviews and participation in project work. They are a result of the initial cycle of analysis, as described above.

## Co-Designing with Organisational Stakeholders, not End-Users Alone

During field research it became apparent that the engagement with end users of a service didn't appear to be the main focus of interactions and dedication of time resources. Although understanding the user and exploring the context in which a service operates and is interacted with forms still an important part of design research, it is the engagement with other stakeholders that we identified as significant. More immersive co-design processes with end-users weren't observed, and one member of staff at FG explained, client organisations regard co-design with users often as too resource intensive. Instead FG designers work closely and consistently with a variety of stakeholders throughout the design project. These stakeholders were members of councils, of specific units within a council or providers of services for the council. In this then, service design practice has become more stakeholder-oriented than actually user-centred. This was confirmed during an interview with the CEO of another, pioneering service design agency in the UK. In his view, client organisations have improved their internal knowledge about user-centred design and become adept at applying it. The challenge, as he puts it, is to bring user-centred design through the organisational structure while engaging with stakeholders along the way through co-design.

## Deep Organisational Integration and Opportunistic Extension of Responsibilities

The designer-client relationship that was observed during the Essex project shows close collaboration beyond what is often referred to as an Innovation Lab. According to the project manager, who worked on the Essex project, the work with Essex council goes beyond that of an innovation lab, by integrating designers into everyday activities and the delivery of organisational change with a permanent base inside the organisation and access to decision makers. Such form of collaboration corresponds with current developments in the field (see for example: Sanders, 2014) and shows that deep structural integration of external designers in client organisations is a reality. Observations also suggests that designers confidently exploit opportunities to extend their responsibilities that arise therefrom, for example by developing business models or addressing issues of organisational change.

## Interdisciplinary Contexts are Changing Service Design and the way Designers work

Observations and interviews suggest that FG represents a type of service design agency that was built around a specific disciplinary expertise other than design. They combine expert knowledge in local government with expertise in digitisation and service design. This allows

them to target specific clients and being able to apply specific background knowledge and expertise in relevant subject matters. Other examples are management consultancies, like Accenture who bought Fjord or digital agencies, such as Futurice, who adopted Service Design processes.

This can be interpreted as an extension of traditional design consultancy model that design thinking is based upon, where designers are generalists with expertise in problem-solving and problem-thinking. Further, process management approaches, specific to other disciplines, such as digital, shape designers' engagement with clients and the design process itself through, for example, agile work processes and tools. Also, team work at FG means collaboration across different disciplines (UX, service design, digital developers, project managers).

## Designers as Organisers with Soft Skills

From observations it becomes evident that design as practiced by FG is highly dependent on individual team members with experiences in client engagement. and sensitivity towards organizational dimensions and dynamics becomes a main capability for graduate designers. This circumstance not only poses a barrier that is difficult to overcome for graduates, where agencies hire senior design staff, but is also a dilemma for agencies who try to find junior team members to support their senior staff, but also require each team member to take on senior roles.

This way of working together suggests a demise of account management, which leads to flat hierarchies, and results in the designers becoming more instrumental and involved in organizing around design projects and managing clients. This comes with a requirement of being confident 'to be the focal point of a project', as the Head of Design at FG describes the role of designers.

During this research, practitioners have voiced an expectation that familiarity with methods is a fundamental predisposition, what makes a designer a skilled service designer is the sensitivity for the context of application and the flexibility to think problem-oriented. For example the project manager on the Essex project would want to know from graduates: 'do you have empathy for organisations? Can you empathise with the client and their financial constraints? Are you fascinated by designing the conditions to be able to design user-centred?'

This focus on softer skills is potentially a barrier for fresh graduates when applying to agencies with flat, agile structures, as they will not have had the ability to experience professional contexts and develop client management skills.

But this also poses a challenge for education. It makes it harder to clearly identify, articulate and conceptualise learning outcomes that provide the basic and relevant knowledge and craftsmanship of service design and less clearly identifiable soft skills.

## Diffusion of Design in Specialist Sectors

As design methods become accessible through digital platforms (see, for example: 'Practical Service Design') and are not exclusive to educational institutions, one might argue that in Schoen's (1992) sense, the resources of designing have become less situated, but the subject matter of design is becoming more specialised and unique. To a degree where agencies with specialist knowledge, such as FG, appear to have an advantage and enter the space of more generalist agencies, such as Engine, thereby raising questions as to whether design education has to respond to the diffusion of design in relation to sectors and related disciplines, such as policy or digital.

## Implications for Design Pedagogy

To a certain degree, the rapid changes in design profession, one might argue, require a future-centric approach to design education itself, resembling what Manzini (2011) describes as ‘to prepare future (competent) designers is to involve students in problems, opportunities and design methods that today appear radically new (...)’, thereby establishing an abductive approach to the conception of pedagogy where students are active co-producers of their own learning (Orr, Yorke, & Blair, 2014, p. 32).

On the other hand we can witness a more pronounced focus on design research and the necessity to understand social and specialist contexts in order to identify the right problem (Norman, 2013).

As design branches out, it becomes exposed to processes not innate to design, such as agile, as well as specialism knowledge and expertise, which, one might argue, require a re-thinking of the structure of how we understand the role of designers and their education in preparation for evolving, but highly contextualised communities of practice. While studio-learning can be considered experience-led, the context of the learning experiences we as educators provide, might become ever more relevant. Here we wonder, whether the apprentice-master relationship in studio education has responded by simulating increasingly social and complex contexts, and the specialist knowledge that some sectors require.

From the above findings, we suggest that applying the studio and experience-centred model of action learning (Kolb, 1984) to a more stakeholder-centric form of design will require deeper engagement with the context of design, including organisations and their structures and cultures, not only on a Postgraduate level, but on an Undergraduate level as well in order to further the development of, for example, soft skills.

## Preliminary Requirements for Stakeholder-Oriented Design Education

Below we deduct that an approach to service design education that respects the findings, has to acknowledge the relevance of the context that service designers operate in. And it is not always possible to anticipate the communities of practice that graduates will interact with in their practice. A good example of this is the finding that out of seven service designers at FG two had completed a service design degree. The extension of a user-centred design curriculum to embrace a wider range of stakeholders as intended audience for designing we see as an important requirement for future design education across BA and MA levels, but beyond this, findings inspired us to articulate a first draft of requirements for future design education.

**Deducted requirements might read as follows:**

Allow students to:

- develop curiosity for areas of the design ecology that might not occur apparently relevant to a service design task in a stricter sense;
- experience the complexities of working in interdisciplinary networks to strengthen the development of soft skills in addition to the experience of fundamental design methodology and practices;

- develop a repertoire or vocabulary that will allow to interact with other disciplines. Being able to communicate the benefit of design across stakeholder ecology;
- be versed in visual, communicative as well as analytical skills that allow to break down complexity and generate insights valuable and meaningful to a variety of stakeholders (not only users).
- Allow for experimentation and pro-active appropriation of specialist subject matters by design students by embracing social discourses as part of the realm of the artificial and understanding the role of products and services within.
- Shift in focus from learning through imitation of practice to a shift of emphasis towards development of a design attitude (Michlewski, 2008). Shaping of practice, rather than adopting traditions.

## Potential Responses

The findings and articulation of preliminary requirements led us to suggest a first, limited collection of cases and suggestions that extend studio learning or have the potential to do so.

- Integration of specialism knowledge into the curriculum, creating a multi-disciplinary design course. Exposing students to thinking and empathy that comes with the convergence of disciplines through the integration of service-oriented projects and their multi-stakeholder ecologies.
- The extension of studio teaching with experiences of work life through internships, placements and live projects. Bringing education closer to the realities of work, without reducing the space for experimentation and self-exploration. An example is the intensified integration of live projects into the undergraduate curriculum at GSA.
- Collaborative courses with university faculties, such as business schools, examples being GSA's MSc in Design Innovation and International Management, together with Glasgow University or the MSc in Entrepreneurship for the Creative Industries with Audience Business School in Nantes, France. A limitation of this model can be that it doesn't necessarily result in a convergence of knowledge domains. Advantages are the experience and exposure to specialist knowledge from different, relevant disciplines.
- A model that exposes students to the practicalities of being design agents by interacting with clients, as well as members of their prospective communities of practice. This would bring the attitude of practicing designers into the studio, partially removing the complexity of practice, while still exposing students to a wider ecology of stakeholders and their respective experiences.

In this section, we made a first attempt at articulating potential implications for design education by articulating requirements and potential responses. These are not supposed to represent conclusive recommendations, they are instead intended to raise questions and explore opportunities and limitations of possibilities to evolve design education. It seems that specifically service design as discipline offers the opportunity to explore a wider stakeholder remit and allow students to experience multi-disciplinary ways of working.

## Conclusions

In this paper we share our observations of service design practice and its context. We suggest that stakeholder-oriented design appears to be a more adequate term for design activities that increasingly involve users inside client and adjacent organisations. This has led to a shift away from a user-focused approach. This is not an entirely novel concept (see for example: Sanders, 2014, on co-design across the entire design process) but it requires explicit articulation in relation to design education and the way we prepare graduates for practice.

Three conclusions follow from this preliminary articulation of findings and their discussion. Through this research we became aware of the dynamic character with which practice explores and moves into new knowledge domains. Here we see a real opportunity for a proactive approach to design education that equips students with the ability to invent not only future user scenarios, but also future methodologies and situated ways of working as designer. Situated in a way that acknowledges the importance of context (Schön, 1992) and the uniqueness of design problems (Buchanan, 1992) as a result.

We acknowledge efforts to link the gap between teaching, practice and research by, for example, funding projects like this and suggest continued articulation and sharing of mechanisms and processes that further the integration of practice and research into teaching and learning.

It seems that we, as educators and practitioners, are on a journey and have started to address multi-disciplinary learning experiences and the simulation of live work environments. But identifying the value of these and making sense of such offers in relation to future practice is partially left with the students. Here we see potential for a more clearly articulated integration of stakeholder-oriented design into the curriculum to further narrow the gap between practice, research and learning.

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# Working with complexity: A contemporary skill framework for service designers

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## Abstract

Designers today live in interesting times, riddled with complex, ‘wicked’ problems amidst advancing technological landscapes that are transforming: the object of design, the spaces in which it is conducted, the actors involved, the stages in which it operates and the value it delivers. The paper explores each of these aspects, presenting the main arguments of current academic debate and extracting skills that service designers should acquire when moving forward. Understanding the role of service designers and the skills needed is a useful pursuit for the discipline as a whole, which finds itself in a moment of reflection and self-assessment. Remaining relevant as professionals is a key issue for many service designers as they face problems whose solutions are often open-ended, systemic and done with the engagement of non-designers. The paper concludes by proposing a skills framework for the contemporary designer to serve as a prototype for future reflection and debate.

**KEYWORDS:** service design, complexity, skill framework

## Introduction

### Designing in and for complexity: problems, systems and spaces

The issue of complexity is a relevant dynamic characterizing today’s political, economic, social and cultural challenges and one that designers are beginning to face, operating in work domains and challenges – healthcare systems, migration processes or food systems – that differ from the traditional challenges that have characterized design. While designers have been accustomed to working with complicated problems through the use of refined problem-solving skills, the challenges and work domains that designers are now working in require new skills. Whether today’s problems are more complex than before in relation to the tools needed to face them is not the objective of the paper, but rather to understand how designers – service designers in particular – must evolve in order to remain relevant in today’s *complex* world.

Service designers stand to play an important role in this new paradigm as services are per se complex social systems whose interactions occur within wider systems of action and actors,

where individual behavior can't be predicted and whose interactions create emergent properties, qualities and patterns of behavior (Junginger and Sangiorgi, 2009; Mitleton-Kelly, 2003). While service design is a rather recent field, it is no longer emergent. The expertise and skills acquired thus far have proven themselves useful to the challenges of the 21<sup>st</sup> century; however, new skills and roles of design will also be needed to maintain professional relevancy in going forward. Lucy Kimbell (2009), in fact touches upon this need of going beyond design thinking towards an approach that moves the unit of analysis away from the individual designer to a wider frame that grounds the practices and competences of the designers with the materials used and the practices of the stakeholders involved (ibidem, p. 11). She proposes pairing the concepts of *design-as-practice*, which acknowledges the role of the designer but also of non-designers taking part in the design process – stakeholders, users, managers and employees; and *design-in-practice*, which “acknowledges the emergent nature of design outcomes as they are enacted in practice” (ibidem, p. 11). In other words, she promotes a more systemic vision to designing, whose outcomes remain incomplete as their meaning and use are constantly being redefined. The inclusion of non-designers (Manzini, 2015) in design processes and activities and how these interactions can serve as material for creating organizational change within the organization (Junginger and Sangiorgi, 2009) is a relevant issue as service design seeks to touch the deeper, fundamental assumptions of the organization (Rousseau, 1995).

In the same vein, Norman and Stappers (2015) promote a modular approach when designing for complexity, advocating that designers invoke tolerance for existing constraints and trade-offs. In their work on design in sociotechnical systems (ibidem, 2015), they encourage designers to continue on into the implementation phase, where most of the problems hindering the final design occur. The authors, also, celebrate what designers can bring to the table – i.e. understanding the human elements of these systems and designing for them. They, along with others (Lindblom, 1959; Flach, 2012), promote an incremental approach rather than immediately aiming for the ideal solution in an unknown future. The authors instead advocate designing in a manner that ‘muddles through’ complexity, based on small steps as part of an overall design strategy that engages stakeholders in a co-design process that fosters ownership.

Taking a more specific look into the public sector, service design faces a myriad of complex problems; the highly bureaucratic and top-down procedures governing their work, which grant little room for flexibility or improvisation (Weick, 1998); a highly-siloed organizational structure; and finally, an organizational culture averse to risk taking and innovation. Likewise, the private sector organizations are similarly complex, highly siloed and fail to interact smoothly. They often experience strong conflicts of interests between business units which have opposite targets; are eager to innovate but their rigid configuration doesn't match the velocity of the market; and finally, there is a need of a cultural change of the staff in order to embrace a new way of working (Martin, 2005; Staes, 2009). In response, service designers are increasingly being called to solve innovation challenges in both sectors, and therefore, their role is being extended to other areas of application which are far from the traditional object of design. In this sense, service designers need to revise their skillset integrating it with other competences.

In this paper, we seek to explore the new skills that service designers need to work with organizations facing complexity in both the public and private sector, while bringing to the forefront the work done so far and posing new questions to the ongoing research agenda. While mostly an exploratory paper, we conclude by providing an initial prototype of a skill framework to guide service designers in preparing themselves for the complex challenges of the 21<sup>st</sup> century.

## Methodology

This article aims at proposing a skill framework for the contemporary service designer facing complex organizations. The contribution is the result of an exploratory research aimed at organizing available knowledge around the topic. The framework thereby obtained is intended to provide organized stimuli for further reflections on how to improve service design education and practice.

The information has been gathered through an extensive literature review that considered public records and sources, such as scientific articles and books, interviews, blogs and other online sources.

The literature review took into consideration contributions coming from the disciplines of service design and co-design, organizational studies and innovation.

## How service design is being introduced in organizations

In recent years, private organizations have gained a new understanding of the value of design and have begun to change their internal culture and attitude. Companies are looking to design as a way to innovate the product/services they are delivering and are adopting different strategies to do so (Muratovski, 2015). Some are trying to build design capacity inside their organizations, structuring dedicated in-house design teams; others have decided to hire external design professionals, while in other cases yet, the companies have chosen to train internal staff.

Hiring design professionals from the outside can attract experts to boost design expertise in the company, free from being influenced by deeply-rooted constraints. Moreover, experts coming from the outside-in have the potential of carrying more influence as they establish themselves in the company as experts in a specific field from the onset. This is more difficult when internal resources are trained to become design ambassadors. In the latter case, employees that used to work in diverse roles are gathered in one core team and are entrusted with the position of spreading design culture throughout the organization.

For this reason, many business consultancy firms are now expanding their offer to include design so as to remain competitive, even if they have never been associated with design before (Muratovski, 2015). Therefore, in recent years we have seen many design studios being acquired by more established business consultancies, like PricewaterhouseCoopers, Accenture, Deloitte and McKinsey & Company (Muratovski, 2015). This phenomenon reflects the “ongoing transformation of the business landscape as a whole” (Gianatasio, 2017) which reveals the growing interest in service design by different private organizations.

Interest in service design is also growing in the public sector with a similar expansion in supporting infrastructure with the rise of specific policy and innovation labs, like Mindlab, la 27eme Région and Policy Lab (UK), along with living labs and new service offerings for the public in private design firms, e.g. IDEO and Fjord/Accenture. As in the private sector, different levels of experimentation can be observed, from outside-in consultancy focused on improving already existing services – not touching upon the internal processes or values of the organization – (Fjord’s work with the German Federal Employment Office<sup>1</sup>) to the

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<sup>1</sup> Fjord worked with the German Federal Employment Office ([Bundesagentur für Arbeit](https://www.bundesagentur-fuer-arbeit.de/)) to create a new, online platform with integrated digital services, better suited to meet their user’s needs.

training of internal team capacity (la 27eme Région's "La Transfo" project<sup>2</sup>) to programs focusing directly on more lasting change in the organizational culture by embedding a design mindset and culture in public servants (Mindlab's "LabRats" project<sup>3</sup>). The ultimate level of integration of design culture into public organizations can be found in municipalities which have recently institutionalized design within their structures creating new roles– e.g. Helsinki's Chief Design Officer, Anne Stenros. Service design thus finds itself at an important crossroads at which understanding its effective role is pivotal towards preventing it from becoming a passing fad (Ansell & Torfing, 2015).

## The service designer in a complex world

The following section presents the skill framework proposed by the authors for contemporary service designers and duly describes the different aspects concerning its changing role. These aspects have been organized in a discussion that follows the logical categories of what and where, who, how, when and why. The framework served as a tool for the authors and is meant to facilitate an overall understanding for the reader of the parameters of the research, allowing for deeper analysis of all the qualifying aspects. For each category, a description is provided of the changes taking place and the qualifying skills the service designer should acquire as a result. A visualization of the framework is provided at the end of the chapter (Figure 1).

### What and Where: the object of design and its context

Design and designers are shifty, malleable creatures in constant re-formulation based on the needs of the day or the historical moment in which they find themselves. Today, designers are working, as stated above, with new levels of complexity, not only in the problem type but also in terms of the work domains in which they operate that are constantly more varied and extensive, with more actors and spaces to manage. As already well documented by many design scholars – Kimbell (2009) and Julier (2012) to name just a couple – the field of design has been experiencing a shift, or an expansion, from craftsmanship and industrial production towards design thinking, experience and interaction design and design for social and environmental challenges (Manzini, 1998); thus a shift from a focus on well-structured problems that are solved through a rational set of procedures (Simon, 1996) to ill-structured, wicked problems (Buchanan, 1992; Rittel & Webber, 1973) that are indeterminate, fluid, open-ended and which cannot be definitively solved. Further in this direction, design has moved away from the viewpoint of the designer as being omnipotent towards one that views design as being a distributed social accomplishment dependent on its material and social circumstances (Suchman, 1987; Kimbell, 2009; Manzini, 2015).

Guy Julier (2008), took this further, including theories of consumption in his formulation of design culture, which views design as more than "just the fashioning of discrete objects but entangled in the creation of relationships and networks that work through different systems of production and consumption" (Julier, 2012, p. 115). Design culture can thus take form on various scales, from the single organization to the city, "where urban form, cultural infrastructure, political support, consumer behaviours, notions of tradition, educational

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<sup>2</sup> La 27eme Région's project, "La Transfo", is a 1-2 year project, aiming to create an innovation lab/unit within public organizations through an embedding process that brings together a multi-disciplinary team which works on three separate design challenges in time intervals of 7-10 weeks. This process allows them to gain skills and competences while also preparing and testing their surrounding ecosystem.

<sup>3</sup> Mindlab's "Lab Rats" project aims to connect innovative public servants from different departments with one another, and use them as ambassadors from which to propagate design culture within their institutions.

resources and so on add up to produce particular relationships and ways of working and being.” Designers are thus working in new and more vast spaces and networks as the economy shifts towards being more service-oriented and collaborative, with new actors, and new forms and sources of resources being supported by a renewed creativity in times of scarcity. Thus, each economic, political, social and cultural scenario provides new drivers that require new skills from designers. Where designers were once form-givers, they are now also likened to other roles – facilitator, project manager or intermediary – as the division between ‘above’ and ‘below the line’ design get blurred and the actors engaged in the design process increase and become more varied (Julier, 2012). New skills in people management, cognitive studies, and human behavior are becoming more relevant.

Norman and Klemmer (2014) propose that designers continue their training in the “art and craft of beautiful and pleasurable well-crafted design, [but also integrate this] with substantive courses in the social and biological sciences, in technology, mathematics and statistics, and in the understanding of experimental methods and rigorous reasoning. Myerson (2015) instead points out that the “deep expertise entailed in the practice of most design principles – from industrial and automotive to environmental and communication design – lends itself to narrow focus, [often on] different touchpoints through which the users of complex systems experience the system, rather than broader, big picture thinking” (ibidem, p. 99-100). Complex problems, however, require such systemic thinking, rooted in the bigger picture instead of unique touchpoints. Service design is already moving in this direction but more attention should be given to developing skills in systems innovation and integrating them in the design process –e.g. introducing constraints earlier on and allowing for trade-offs in a more modular approach. The question then surfaces of how service designers can be more multi-disciplinary, adaptable, modular and systemic in the design process.

*Skills: Be competent in diverse disciplines, Adapt to different contexts and scales of design, Design in modules for incremental innovation, Maintain a systemic vision.*

## Who: design stakeholder network

Design processes today are characterized by a collaboration between different actors, opening up the opportunity of designing to a wider range of people (Manzini, 2015). This at times alleviates designers from the burden of coming up with brilliant ideas alone, but limits their role to facilitating co-design sessions and organizing the ideas of others. As stated by Muratovski (2015): “the role of the design leader will change from that of developing unique creative solutions to one that revolves around facilitating ideas” (p. 29).

Several co-design experiments however provide evidence of the contrary, in which the role of the designer has proven to be essential as a guide rather than a bearer of methodology. One such experiment is the project Cittadini Creativi carried out by Daniela Selloni, who experienced: “the need for a shift from ‘visualizations’ to ‘visions’ [during co-design sessions], [which] represented a crucial point for the evolution of [her] role from ‘facilitator with tools’ to that of [a] ‘proponent with contents’” (Selloni, p. 171). Therefore, within these new forms of co-design, can the service designer play the role of an expert contributor of content steering toward a vision (Meroni et al., 2018)?

*Skill: Lead collaborative processes*

When approaching complex organizations or environments, service designers come in contact with many different stakeholders. They can vary by sector, background, age and seniority and play different roles within a project: the final user of a service, a provider, sponsor or simply someone who will be impacted by the solution. In order for the project to

be successful, it is essential to understand the interactions among all the actors and engage every stakeholder in the right way, aligning interests and fostering alliances around a common scope (Selloni, 2017). In the era of collaboration, this is becoming an increasingly relevant capability for the service designer.

While designers may not be the most adept at building networks and engaging with stakeholders, they need at least to be capable of understanding who needs to be involved and with which role. Available literature exploring the concept of stakeholder engagement usually comes from project management studies, identifying the project manager as the figure in charge of understanding relationships with stakeholders (Hansen & Spitzeck, 2010). However, many service designers today are taking on the role of project manager, and hence need to acquire this ability. Historically, service design has been conceived as a user-centered discipline, therefore having a strong focus on the study of the user and his/her behaviour. Less attention has been paid to stakeholder relations, but we think that there are specific skills and tools that the service designer could apply for this aim. For example, designers could improve the way ‘traditional’ project managers have approached project management until now by making use of design probes, visualizations or ethnographic tools (Segelström, 2013). This leads to the question of whether service designers can foster stakeholder engagement within a project by exploiting their design-specific skills and empowering them with more business-specific goals.

*Skill: Know how to engage the right stakeholders*

## How: design process

In recent years, besides changing the object of the design activity, we have witnessed also a relevant change in the ‘how’. We are here referring to the collaborative connotation that design is increasingly embracing and which consequentially changes the role of the service designer. Service designers are no longer consultants that bring the solution to the client, but are leaders who co-design the solution with the client staff and other stakeholders. This implies that service designers are equipped with interpersonal skills and psychological knowledge that allow them to successfully lead an activity and manage group dynamics. This, however, is not the case. Besides personal inclination or knowledge gained with direct experiences, designers are being tasked to coordinate groups without a specific expertise. Furthermore, while homogenous groups can be easier to conduct, groups with higher levels of heterogeneity introduce higher levels of complexity, thus increasing the need of an expert for the success of the activity and the project (Meroni et al., 2018).

An expert of group dynamics is one that resolves conflicts in ‘agonism’ (struggle with adversaries) instead of ‘antagonism’ (struggle with enemies), thereby enabling people with different interests to collaborate for a common goal (Hillgren et al., 2016). Considering that these competences are essential at least at a basic level, we question if it is the service designer who should become an expert in this area, turning into a hybrid professional, or if they instead should be accompanied by another professional, like a psychologist or a coach? While service designers may not be trained to manage group dynamics, they are often able to align stakeholders around a common vision through the material artifacts or prototypes with which the designer renders the solution or even the challenge itself tangible at different stages of the design process. These design artifacts in fact act as ‘boundary objects’ (Star and Griesemer, 1989), allowing for prospective sensemaking (Stigliani and Ravasi, 2012) and the creation of a shared vision between diverse actors. This important design practice is growing in relevance as more diverse stakeholders are involved and included in design processes and activities.

*Skill: Be familiar with group dynamics, Visualize design solutions for a shared vision*



In recent years, service design has increased in popularity both in public and private organizations, viewed as a promising way to tackle all sorts of problems and bring about innovation. It has in fact been misinterpreted as a magical formula that can solve any challenge, leading to an excessive attention to methodology over output, intended here as the final product/service to be implemented. This has led too often to the perception of service design as a collection of tools that are improperly seen as outputs. Meroni and Sangiorgi (2011) outlined the need to move from ‘tools’ to ‘contents’ in the discussion about design for services.

For example, service designers are witnessing requests from companies who ask specifically for co-design sessions, personas or customer journeys. This is probably caused by the market itself, which requires service design agencies to itemize their tools to show their methodology, but can also be misleading for clients and for the general perception of service design itself (Drummond, 2017).

Furthermore, the proliferation of service design toolkits (IDEO, 2011; NYC, 2017; Stickdorn & Schneider, 2012; Kimbell, 2015) is also an index of the general focus on the process, while service designers should shift their attention to the system for which they are designing, the results (to be assessed) and implementation.

Hence, how can service designers focus more on the quality of the output – actual product/service - they are delivering than the tools they are using and communicate better the value they are providing to the final users?

*Skill: Focus on the output rather than the process*

## When: design phases

As service designers begin to work more and more with ‘wicked’ problems, questions of when design skills should be used becomes more critical, as does determining the value of design in each phase. If we return to the idea that designs never end but are rather constantly being enacted in practice (Kimbell, 2009), it follows that the work of designing never ends, whether the designing is being done by the professional designer or not. While traditionally, designers worked by client commission, from design brief to design delivery, designers are now charged with more responsibility for a longer time span reaching beyond the delivery of the “final” design and continuing on into the implementation (Norman & Stappers, 2015) and assessment phase. Here the issues of ownership and stewardship become relevant as a quality that designers must gain but also transfer to other actors involved in the design process. As solutions to complex problems are rarely finite but rather open-ended and in constant evolution, it is critical that the designer take responsibility for ensuring that the implementation of the design is successful and take charge of the inevitable re-designs that this process entails (Julier, 2012).

Furthermore, if designers fail to assess and criticize their designs, the ultimate value, quality and impact of their work will continuously be overlooked and likewise undervalue and overlook the role of design in wider organizational processes. In going forward, designers should develop a more critical attitude and find tools with which to assess and monitor their work. Understanding the value of design through criticism and assessment will also help designers convince clients of their strategic value, not only in the final stages of the planning process (the design brief to implementation) but also in the initial stages. If we look at the public sector, designers are often commissioned to design services that implement policies without reflecting if the upstream policy is well-designed (Junginger & Sangiorgi, 2011). Junginger and Sangiorgi (2011) sustain that designers must develop a reflexive attitude that pushes them to go from action (implementing services) to thought (asking why and what particular services are meant to achieve). Likewise, in private sector organizations, as products become more about experiences and connecting services, corporate strategy is



becoming more emergent, potentially giving design a larger role in corporate strategy (Seidel, 2000). Designers in both sectors will need to develop envisioning skills that are reflexive, strategic and comprehensive of system-wide requirements. In conclusion, in going forward, the intervention of designers should come earlier in the process and last for longer time periods, continuing along until the assessment phase.

*Skill: Be responsible for upstream and downstream processes, Use design as a tool for emergent strategy, Measure the value of design, Think reflexively at every stage*

## Why: design value

Service design (and here we couple design thinking) is currently identified and requested by organizations as a process that helps generate a lot of bright ideas that foster innovation. While it is true that service design plays a prominent role in idea generation, it is not its only role and becomes useless if it is done for its own sake. What service design as a field needs to better communicate is that, if it aims at having an impact, it needs to put more attention on identifying the real challenge and the inner meaning behind their designing. The importance of the ‘why’ against the ‘how’ has been extensively advocated by Verganti in his recent book (2017), in which, he depicts our society as a scenario “awash with ideas, where technologies and solutions are increasingly accessible, but problems and meaning keep changing” (Verganti, 2017, p. 20). Verganti thus invites designers to take a step back and give importance to making sense of this plurality and concentrate their effort on something really meaningful for people. He consequently describes the ‘innovation of meaning’ as a novel vision that redefines the problems worth addressing (Verganti, 2017). In such a context, we believe that the designer has a specific ability and the tools to both investigate which is the right problem to solve and envision the right direction to pursue and thereby play a fundamental role. Hence, in a ‘world awash with ideas’ can the service designer become a professional who is able to drive organizations toward meaningful directions?

*Skill: Innovate with meaning*



Figure 1 – The contemporary service designer's skill framework

## Conclusions

The main conclusion that we have come to from the findings is the need for service designers to equip themselves with new skills to face the mounting levels of complexity that is characterizing and re-defining: the object of design, the spaces in which it is conducted, the actors involved, the stages in which it operates, the value it delivers and ultimately, the roles they are called to fill. We are definitely not alone in this pursuit. While many authors have for some time investigated the ever-changing role of the designer, it has recently become a hot topic for the service design community. Meroni and Sangiorgi (2011), for example, identified the diverse disciplines with which service design works and from which they deduced related job profiles. Other authors have analyzed specific roles, giving them titles and specific characteristics. Tan (2012), for instance, observed a number of case studies in which the designer acted in different capacities: a co-creator, a researcher, a facilitator, a capability builder, a social entrepreneur, a provocateur and a strategist. Similarly, Yee (2017) identified seven different roles of design to foster change in organizations, formulating how design can be used to enable technology, form communities, catalyze culture and more. Other authors still focused on skills rather than roles. Julier (2012), for example, proposed four conceptual frameworks that provide suggestions on where design skills might be directed in the future: intensification, co-articulation, temporality and territorialization.

Others reflect more broadly on the need for designers to work transversally (Krucken, 2008) by developing a t-shaped profile, where specialization in one field of design (vertical stroke) is completed with the ability to collaborate with other disciplines (horizontal stroke).

Building on what the aforementioned authors have put forth, we would like to add a few possible directions that design education might take to better prepare designers, and specifically, service designers, to work and design for complexity. As seen above, designers are now called to work in different problem spaces and to problem-solve in different ways to find the most valid solution for ill-defined, ‘wicked’ problems. Furthermore, the design process has become more inclusive, engaging with more diverse actors in all phases, taking on a systemic, co-design approach to problem-solving. This has led, as we’ve seen, to gaps in the service designer’s toolbox of competences, which has thus far been best solved by the keen awareness of the designers themselves to these gaps and their ability to adopt a holistic approach and find and engage the right collaborators to form multi-disciplinary teams. In order to better prepare designers for these challenges, we would suggest that design curricula adopt a more multi-disciplinary and t-shaped approach. One way would be to integrate a system similar to the US’ bachelor degree, in which design students major in a field of design but are also required or given the option to minor in a different field of application (e.g. public sector management and administration, business, agriculture, health, etc.) in order to better prepare them for the contexts (i.e. problem spaces) in which they will be applying and using their design competences. Another important aspect is providing practical, real-world application. While this already happens informally through participation in jams, hackathons, etc., more formal collaborations between design education and different service sectors would be useful to help students get accustomed to not only applying their skills to real problems, but also to work with other disciplines and non-designers.

In fact, in the education program offered by Politecnico di Milano, a double degree program between Management Engineering and Product Service System Design (PSSD) has recently been introduced. This program has been developed to match the need for service designers to acquire managerial skills and vice versa for business students to develop design skills. It represents a first attempt to meet the demand of the professional world. Indeed, the PSSD course benefits from an advisory board made of professionals that each year give their feedback to refresh the educational program and, ultimately, better meet the job market requirements.

In this paper, the authors have attempted to move the discussion forward by bringing together the insights that previous researchers have brought forward and taking a small step further by suggesting the skills that a service designer needs in order to face the different aspects of complexity (what and where, who, how, when and why) that characterize the context of the 21<sup>st</sup> century. The framework is meant to serve as ‘food for thought’, or rather as an initial prototype with the objective of bringing experts together to move concretely towards a new design curricula and education. The framework, moreover, aims to create awareness in the service design community of the attributes that are required for the profession by the contemporary context. The contribution is particularly relevant should we consider that service design today is no longer an emerging discipline, but instead has arrived at a stage of maturity in which it needs to be reflexive as a discipline to prove the value of design. While going forward, however, the discipline cannot lose its typical and distinctive, experimental *modus operandi*, which must remain and reinforce the scientific relevance that the profile of the service designer is increasingly affirming.

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# The satellite applications catapult: Design's contribution to science and technology innovation services.

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## Abstract

This positioning paper presents a six-month scoping study on the role of design in one of the UK Governments' science and technology innovation centres, the Satellite Applications Catapult. Established in 2013 by Innovate UK, the remit of the Satellite Applications is to support economic growth through the exploitation of space with the application of satellite technologies. As one of the earliest adopters of design, the Satellite Applications, with the Transport Systems Catapult, was selected by the UK government's innovation network, the Knowledge Transfer Network (KTN), to be the sites for this research. For the purpose of this paper the Satellite Applications Catapult is presented as a case study as a first step to explain how different design practices shape the organisation's innovation capability with the paper conceptualising how these activities work at different levels of the organisation. To reflect on design more generally across the Catapults this paper also frames these innovation services as Knowledge Intensive Business Services (KIBS), so that design's capability within these contexts can be better understood as knowledge sharing and transformational practices within the organization and externally with clients.

**KEYWORDS:** design, KIBs, service innovation.

## Introduction

As service design grows as a field, there is a need to validate its adoption through better understanding of its range, influence and role within technology-enabled innovation. Service Design Research indicates that there are still thematic gaps in service design research that need attention (Sangiorgi and Prendiville 2014) including the area of science and technology enabled innovation. In addition, within service innovation, little is known of design's application in down-stream developments and this knowledge gap extends to sector areas such as design's role in 'big data' digital services (Prendiville, et al 2017), SMEs, transportation and energy sectors (Sangiorgi & Prendiville 2014).

As well as these thematic gaps, Buchanan (2008:3) draws attention to the need for ‘academic consideration to be given to the role of design in organizational change through the practical activities of design, noting critically that “design” should be explored more explicitly from a broader range of perspectives than it has had in the past’.

This paper will provide a systematic overview of the design activities within the Satellite Applications, as a first step to show how different practices shape an organisation’s innovation capability and strategic direction within science and technology innovation services. In addition, the research frames the Catapults as KIBs to explain design practices as part of their service delivery to enable emergent, knowledge co-creative collaborations.

## Background

The origins of the Catapults as Technology Innovation Centres (TICs) were conceived through Herman Hauser’s 2010 seminal report ‘The Current and Future Role of Technology and Innovation Centres in the UK. In this work he identifies a ‘critical gap between the UK’s capability in research and its inability to capitalize on these in order to deliver economic benefits’ (p3). The report recognised best practice examples such as the Fraunhofer Institutes in Germany and the TNO in the Netherlands, as innovation models that would benefit the UK. Importantly, Hauser’s (2010) report also noted the highly collaborative and networked nature of innovation in problem solving and the multiple sources that catalyse it, from external parties such as universities, customers and suppliers.

Consequently, in 2013 the Technology Strategy Board (TSB) now Innovate UK, set up ‘translational infrastructures’ in the form TICs. The first seven to be established were the Digital, Advance Manufacturing, Cell Therapy, Future Cities, Transport Systems, Satellite Applications and Renewable Energy Catapults. Concurrently, discussions on the potential of this network of technology innovation centres, also acknowledged the need for the Catapults to have the capability to use design for commercializing technology (Department for Business and Skills, 2011, Design Council 2011).

More recently a review of the Catapults’ progress notes their success in acting as ‘translational infrastructures to bridge the spectrum of activities between research and technology commercialization’ (Hauser 2014:3). This achievement, of the first Catapults, to close ‘the innovation gap with the best systems in the world’ (3), has led to date, to the further creation of eleven Catapults with a recommendation that a network of 30 centres be set up by 2030 (Hauser, 2014: 7). Yet although the Catapults are now established centres of innovation there has been little discussion to understand design’s contribution in these organisations and more importantly its broader role in TICs. To address this, in 2015 the KTN funded a six-month scoping study on the Satellite Applications and Transport Systems Catapults, to open-up discussions on design’s potential and wider adoption across these science and technology ‘translational infrastructure’ services. In this paper the Satellite Applications case study is presented to shape the understanding of design’s contribution and its activities to TICs at three different organisational levels. In addition to understand the potential of design more generally in TICs, the research early on, framed the Catapults as KIBs to reflect their catalytic role in knowledge-creation.

### *The Satellite Applications Catapult*

The UK space industry is worth £13.7 billion (Sadler et al, 2015:1) to the economy, with the largest contribution from down stream space enabled services made possible by using satellite data (House of Commons Science and Technology Committee, 2016/17). These satellite related services broadly support the UK economy under four industry headings;

telecommunications, global navigation satellite system (GNSS), earth observation and meteorology.

Situated next to the European Space Agency on the Harwell Oxford Campus, the Satellite Applications Catapults aims to improve the understanding and take up of such satellite based services across the UK economy from large corporations to single product, early stage companies. This involves connecting to companies particularly those that are unfamiliar with space technology by exploring and identifying opportunities where space technology may assist in their business. As an emerging technology, the Satellite Applications are interested in facilitating the adoption of satellite based services for non-space industry users and to support this agenda, they have an interdisciplinary team of staff, with two thirds of the current 100 workforce being employed from non-space technology backgrounds, ranging from banking, education, insurance, agriculture and the public sector (Scoping Interviews November 2015).

The Satellite Applications has four focused programme areas that are 'Intelligent Transport, Blue Economy (for example maritime surveillance), Government services and Sustainable Living' plus two explorative areas. Within the four programme areas there are a number of threads and these are strategic area that have been identified as particular areas of technological or market interest (Satellite Applications website).

## Developing a Conceptual Framework

The following sections provides a summary of some of the key literature that informed the study. In particular the work focused on understanding how different types of knowledge is used in organisations and how this contributes to their innovation capability. Further the work draws on KIBs literature to then understand what type of services the Catapults are and how can we understand design's contribution within this context.

To understand design's role in the Satellite Applications Catapult it is necessary to follow the growing interest in expanding the understanding of design beyond what Desarti et al (2014:41) refer to as the 'reductionist view of design that is a process focused on the appeal of products, to a cultural view of design that embraces unique systems of competencies, knowledge and skills that can envision innovative solutions'. Earlier work by Buchanan (2008:3) proposes that 'design could offer a new way to understand and practice management, leading to more human-centred organisations'. Recent work by Bason (2017) applies this view of design in organisational shaping, to the opportunities it affords to transform public governance. Concomitantly there is also criticism of a lack of adequate knowledge on organisational issues by design professionals (Mugan 2013: Design Commission, 2013) and the increasing need to explore strategies to build service design capabilities within organisations (Bailey, 2012). Thus, when looking at the Satellite Applications Catapult and TICs more generally questions arose relating to what are the design practices that are being used and what is actually being designed?

### *Knowledge Intensive Business Services.*

Looking at KIBs as a frame to better understand the role of the TIC, literature was identified that described the nature and characteristics of these particular services, to inform the thinking, relating to the activities of the Catapults. Muller et al 2009:1, describe the activity of KIBs as mainly 'focused on the provision of knowledge intensive inputs to the business process of other organisations, private as well as public sector clients'. Similarly, Miles et al, (1995: 18) describe KIBs as 'services that involve economic activities which are intended to result in the accumulation of a dissemination of knowledge'. Returning to Muller et al (2009) they see the importance of KIBs as actors of knowledge transformation in regional and national innovation systems. As services, KIBs 'perform activities in close contact with the



client and the more knowledge intensive and customised the service, the more the co-production depends critically on client participant and input' (Betterncourt et al, 2002:110). For the authors 'clients are key to creating optimal knowledge based service encounters and, for this reason providers of KIBS should take steps to proactively manage their clients co-production behaviour' (101). Thus if knowledge is the core asset of a KIB's competitive position in delivering innovation, it raises the the question on how this core asset emerges and how it is being generated? (Muller et al 2009:1).

### *Ways of knowing*

To better understand design activities in the Satellite Applications Catapult and more specifically on knowledge creation, attention was turned to visualisation and cognition in management decision making (Eppler and Platts, 2009) as well the value of experiential learning through Doing, Using and Interacting (DUI), (Jensen et al, 2007). Visualisation through the graphic representation of data, information and knowledge offers significant advantages when dealing with the demanding task of strategic planning (Eppler and Platts, 2009:43). For the authors visualisation gives, 'multiple cognitive benefits including facilitating, elicitation and synthesis of information, enabling new perspectives for more effective recall and decision making; social benefits are also recognised such as integrating different perspectives and achieving stronger communication'(44).

The use of serious play through 'Lego and the use of metaphorical imagery in workshops – verbal, visual kinaesthetic – is a mode of representing knowledge' (Burgi, 2003:74). This form of 'multimodal imagery challenges the abstraction of organisational life so often used in strategy making and instead offers a way of deepening understanding through metaphorical image making' (76). According to Jensen et al (2007:2) 'there are two modes of knowing, one that is predicated on the Science Technology (STI) model and the other which is an experience-based mode of learning, based on DUI'. These two learning modes relate to different types of knowledge; 'the first that is tangible and codified that can be written down and the second which is tacit intangible and often localised' (9). The authors show that using a mixed strategy of these two different ways of knowing enhances product innovation. Similarly Nonaka and Konno, (2000:7) recognise two types of knowledge, one of which is 'explicit' "expressed in formal and systematic language and shared in the form of data", and tacit forms which is "deeply rooted in action, procedures, routines, commitment, ideas'.

### *Methodology*

At the start of the work the research objectives were informed through discussions with the KTN and observations taken at Cross Catapult workshops, which were events organised to promote the up-take of design across the TICs. From these the following research objectives were formed:

- To understand the role of the Catapults as science and technology innovation services and design's role within this context.
- To identify and understand the different types of design activities currently used within the two Catapults under review and how this assists in building knowledge within each of the organisations.
- To understand how design is framed and utilised within the two Catapults and how this influences the reach and service innovation capability of the Catapults.
- To construct a framework to understand and articulate design's role and its potentiality within the two Catapults with the aim to open up discussion across

other Catapults.

A literature review informed semi-structured interviews on design's role within each of the Catapults. Twelve interviews were undertaken specifically within the Satellite Applications. The interviews focused on how design is conceived within the Catapult, its practices assimilated within the organisations and how these are supporting and shaping the innovative capacity of the organisation. In addition two projects from each Catapult were used as a base line to capture and exemplify the range and utilization of design activities in client projects. Questions also focused how design is changing the organisation and its contribution to innovation.

Participant observations were undertaken at three KTN Cross Catapult workshops, held at the Future Cities Catapult, the KTN offices and the TSC in Milton Keynes. The workshops were initiated by the design team at the Satellite Applications Catapult and supported by the KTN for knowledge exchange across the organisations. These workshops were used to observe the discussions on 'design' and its role between different Catapults and the barriers and opportunities for its up-take.

A UK research council workshop was also observed between the Satellite Applications and doctoral students from across three UK universities to encourage the participants to think about how earth observation satellite data could inform start-ups around challenges within the areas of fisheries, security, agricultural management and future cities.

## The Satellite Applications Case Study.

At the very start of Satellite Applications inception in 2013, designers were employed. Starting with one designer, within three years the team has steadily grown to 5 designers and the design activities in the organisation can be categorized into five key areas: communication, user insight work, sprints and business modelling, facilitating workshops and Satellite Applications strategy formulation. These five key areas are all dynamically interlinked within the organisation and in the development of Satellite Application produced services, figure 1.



**Figure 1, represents the five broad areas of design activity used in the Satellite Applications Catapult. These activities are interlinked and continuously interact with each other.**

In the Catapult all the design activities have a role to play in a constant exchange and consolidation of implicit and explicit tangible knowledge. These exchanges take a number of forms but are identified as assisting the Satellite Applications in the following ways:

#### *Communicating Ideas*

At its most simple and basic level, design and the design team are valued for their visualization skills that produce engaging slides and visual narratives that can strongly communicate ideas:

*“ Every time they create a visual for the Catapult to explain a very complex thing in a simple way they are creating value for us”* [Chief Financial and Operating Officer and Executive Director].

Every presentation that is now produced by the Satellite Applications Catapult has a compelling visual narrative supported by infographics to explain complex problems that previously would have been communicated through numerical space data.

#### *Constructing Understanding*

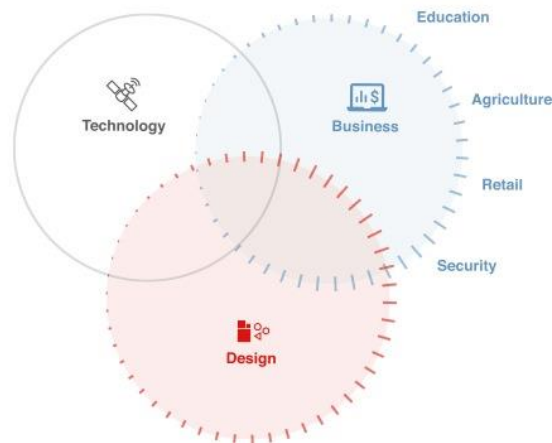
The design and business ‘sprints’ with external organisations such as SMEs, non-government organisations and businesses, supports and enables opportunities for satellite technology to be explored within specific contexts, for the organisations to experiment around the reconfiguration of their business and to reflect different users and communicate the value propositions more effectively to investors.

*“design is really useable in putting in simple terms what the concept is about, how it’s going to fit with the day to day business”* [New Business Development].

#### *Knowledge Exchange*

There is continuous learning and knowledge exchanges between the internal business development team and the designers at the Catapult, figure 2.

**Figure 2, represents the close and dynamic interaction between the business development analysts and the design team. They are continuously learning from each other.**



The designers are learning about the business model process for satellite services and the business development team appreciate the holistic view of the problem space that is articulated through the designers. Over time, the designers are increasingly interested in how an idea is developed into a viable business proposition with clients and how this activity is integral to the design process.

*“Design is working with me to understand who are these people? Age, gender....it’s trying to put me in their shoes to understand the way they approach the service. This then allows me to have a smaller group to identify with, and in economic terms, I start to quantify the possible income. So it’s really moving from one stage to another” [Business Analyst].*

#### *Value in the process*

Workshops run by the designers are viewed by senior management as delivering stronger ideas than those that are initiated individually. The design process enables people to take ownership of a problem and collaborate towards a solution early on. Positive feedback is given at the end of the ‘sprints’ and workshops for participants and in some cases external organisations that are collaborating, are keen to transfer the design ways of working into their own organisations.

*“More importantly, and what hadn’t been appreciated is how much they enable groups of people to create ideas from nowhere, in a way that is stimulating. So they are enablers, they create lots of energy and they keep the process going, and the mechanisms they use (post-it notes, Lego) create an environment where people feel free to talk about ideas and for them to be captured. So design stimulates and captures ideas and also identifies problems and then finds solutions, designers do this in a way that is clever” [Chief Financial and Operating Officer and Executive Director].*

#### *Design as a Bridge and Catalyst*

Design is seen as a bridge builder and catalyst that facilitates the translation of technology into business opportunities in the form of new products and services. The workshops are viewed as creating a different type of working environment that breaks with traditional satellite sector practices.

*“It encourages openness and free thinking throughout the whole process rather than starting with something as a fixed view of what the outputs are going to be – by involving design, it challenges and tests your assumptions. [CEO and Executive Directors].*

#### *Design and Organisational Processes*

Design’s focus extends beyond consolidating knowledge and its exchange both internally and externally with clients, to also incorporate the internal workings of the organisation. Early on its formation the the acronym PACE (Pioneering, Agile, Collaborative and Entrepreneurial)

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was applied, to assist in formulating the culture of the organisation but without having any processes in place. With the arrival of the lead designer, it was noted that there were multiple different systems of communication being used within the Catapult and there was an opportunity for the designers to harmonize the organisation's internal tools, to communicate projects and exchange ideas and to create seamless exchanges throughout the company. This standardization of the processes (sharing ideas, resourcing projects, the facilitation of workshops and a visual language) has speeded up the operations and enabled the Catapult to become more agile with quick iterations of ideas through prototyping and feedback.

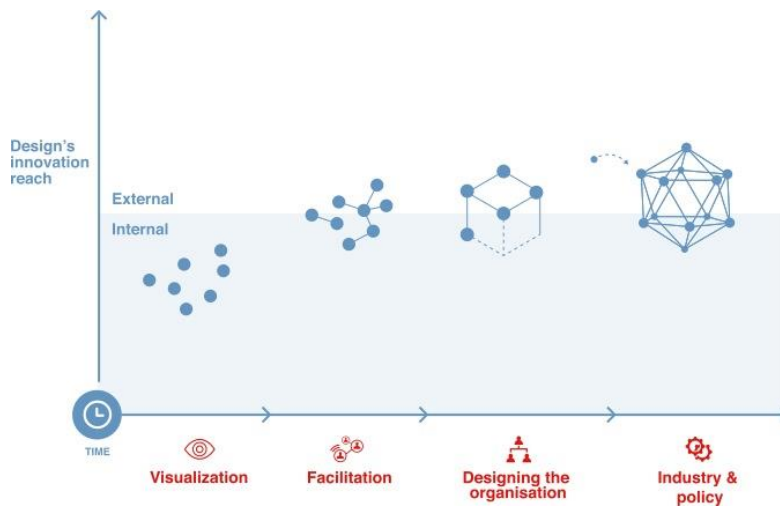
*“So when we designed the space and designed all our processes now, we try to make sure they work, still staying true to those ideals (PACE). And I think that sort of carried forward and the Design Team, they’ve always been very at the front of ensuring that those ideals stay in all our mission”. [CEO and Executive Directors].*

Many of the Satellite Application's down stream services are focused on the uptake of the technology in developing countries, so the designers have introduced design ethnographic fieldwork to the organisation's processes. This approach, now adopted as part of the Satellite Applications development process has helped it understand and overcome potential non-technological cultural and user-centred barriers, in countries such as Kenya and Brazil that may prevent the take up of satellite technology. Field work undertaken in these countries involves not only the designers but also the business analyst, exposing them all to the complexities of introducing new technologies into culturally specific environments.

Since its start, the designers have also seen their role develop, with much greater attention being given to reflecting on how the organisation works as a service for the satellite industry. This approach has developed over time with the focus shifting from individual projects to shaping organisational processes and the Catapult itself, figure 3. The aim is to break down departmental silos and make the organisation more human centred with practices that reflect this throughout the organisation. The focus for the designers is very much about processes that enable the co-creation of knowledge and to maximise how the organisation can work to create solutions.

*“And what the design centred process revealed to me was a differing way of doing it. And it’s about winning hearts and minds earlier on and making that investment earlier on, just changing the way that you engage with your whole community, not only the people who are going to use it but the people who are specifying the system as well, and that sort of reduces the resistance all the way through. And then you don’t actually need the same change management process or all these other things which are the engineering way of dealing with it” [CEO and Executive Director].*

**Figure 3, represents the shifting role of design from its initially focus at the start of the Catapult on communication and visualisation through to shaping the organisation and ultimately influencing the industry more widely.**



### *Design and Organisational Structure*

Since the start of the Catapult in 2013, a number of interrelated issues have influenced the emergence of design within the organisation. Early on it was recognized that the real economic value of space technology was not in the assets in the sky but what it could do for people on the ground. In addition, key individuals at a senior management level within the Catapult visited organisations such as the Stamford D-School (USA) and the Hasso Plattner Institute (Germany) that are powerful advocates of design. In addition, the design team have a design champion, the Head of Business Innovation management who is on the executive board of the Catapult.

Initially design was not understood strategically within the organisation and was treated very much as an adjunct. Although design was given a space that allowed other people within the organisation to view the methods and processes in action, this area was separated from other activities within the Catapult. In the past four years, the value of design is better understood and this is reflected in the expansion of the design team to five members with a mix of skills and expertise including interaction, product and design thinking. This range of attributes helps inform the physical aspects of satellite services. The design team are now also involved in the five-year delivery plan which is updated annually. The two design leads also work very closely with the Head of Business Innovation who is on the executive management team at the top of the organisation so there is a high level of interest in design within the organisation. The following quote from the CEO, reflects the involvement the design team have in supporting the decision making activities and the strategic importance of design in making tangible the structures and processes that assist in the deliver of the organisation's goals:

*"Lots of people want us to do lots of things but we have limited capacity and budgets. So we want a way of identifying the big goals that we could aim for, where according to some criteria, we think we have the right starting points, that we have a unique advantage in those areas and we think there's a big target to get to. And then we build up threads of activity that lead us towards that.....So you can start to map out how you are moving towards the target. So it's actually quite a difficult thing to explain and to get everyone understanding, because it's deliberately ethereal, but nonetheless it needs to have structure. And so we've been using the Design Team to try and create the right level of understanding of where the flexibility is and where the actual structure and process needs to be [CEO and Executive Director]."*

This recognition for design is also reflected in the change in the physical location of the design team from its own space with a large window onto a public seated area to being situated in a prominent position in a circular arrangement in the middle of the main open plan office. This circular area has all the physical evidence of a creative space with post-it notes, workshop materials, representations of the team in Lego figures. Design is situated as being central to the organisation with its physicality prominently displayed. This consolidation of design's role although still not always clearly understood, is constantly

changing over time as its role has become more embedded and consolidated within the Catapult.

## Data Analysis

The data analysis generated through interviews, observations and Catapult presentation material, locates design practices on three conceptual levels within the organisation. Mapped onto the chart in Table 1, a broad range of design activities are identified which were matched with quotes that supported design's role within the organisation. These practices unlock the intangible and tangible knowledge inside the Catapult and externally with clients. Throughout the three year life span of the organisation, the range of activities has increased and the complexity grown as design becomes more embedded at a strategic level. The table charts design's role and maps how it is being undertaken, through which activities, to enable which knowledge flows and changes to occur within the organisation.

### *Level 1 Design Activities*

At level 1 design focuses on communication activities through infographics, visual narrative powerpoint slides, brown bag events (lunch time sharing of cases and projects) and design tools and processes. Reflective practices are also used throughout the design team to review the standardization of innovation processes and documentation. The purpose of these design activities is to consolidate a human centred design approach across the organisation and to make the Catapult more agile in its working practices.

*"I think it has taken us a long time to realise we have got to embed it (design) into everything; certainly for the first year or so we probably just saw it as an adjunct 'oh well perhaps that needs some design' or we can our our power point slides better"*

### *Level 2 Design Activities*

The focus of level 2 activities can be categorized broadly as learning by doing through facilitation of sprints, co-design activities, creating playful activities involving using lab coats and Lego, internal team events and fieldwork particularly design ethnographic for projects in lower and middle income countries. This extends design practices and processes across the organisation and externally with clients to enable tacit knowledge flows across the organisation and externally with clients. These activities further enhance social networks and collaborative ways of working and reinforce a human and business centred approach to the development of satellite technology. The following quote by the CEO, describes a workshop he attended with fisheries analysts who are unfamiliar with satellite technology

*"if you get somebody who isn't from a technology background but they are a user...., and if you start showing them technology too early on, and you say 'well is this what you want?',.... they never take ownership of what that solution is....In contrast the designers took all of this out.... and they ended up sitting on the floor with little bits of card and paper and just trying to work out 'well how would you like to interact with this system? What sort of information would you like to see on this bit of paper? 'OK, well these are the boats; so what information do you need to know about these boats? How can we represent this?' So you do it all on paper and card and then once you've got that, then you can build it into the technology; then they see the technology and say, 'yes, that's the system that we talked about. I recognise it now. I feel like this is my system; I'm going to try and use it'"[CEO and Executive Director].*

### *Level 3 Design Activities*

At this higher level, the designers assist the facilitation of strategy through visualisation and synthesising the Catapult projects through workshops and the development of 'threads and

narratives' of related activities. This process supports the identification of priority areas that may be market or technologically focused areas within their different projects. The process helps the Catapult to think about how to plan their business and how to organise and prioritise their work. By mapping out and visualising their strategy, the Catapult better understands its targets, not in a prescriptive way but in approaches that allow it to adapt and respond; thus design is seen to create the right level of structure and flexibility throughout the organisation.

*"We have a strategy day coming up.....this time we are doing it on the Catapult's impact and again we will be driven by their (designers) suggestions for our activities and how we capture the outputs from that day. So we do enable them to have a big influence on the business"* [Chief Financial and Operating Officer and Executive Director].

















Table 1 shows the different design activities in the Satellite Applications Catapult. Each level is dynamically interrelated with the others.






## Design's Role in the Satellite Application's Catapult

Knowledge Intensive Organizations as Service Intermediaries of Innovation



### Level 1

Design's role as value added activities	How How is it being done?	What is being done?	Knowledge Tangible Knowledge Flows	Evidence What's changing within the organization?
 <b>Communication</b>	 <b>Visualization</b>	 Info-graphics	Communication material	Simplifying complexity the strength of the visual
		 Power Point	 Brown Bag events	Sharing information and processes.
		 Design tools & Processes	Use of the room & people using the white walls.	Diffusion of creative practices. Re-affirming processes.
	 <b>Playfulness</b>	 Lego, lab coats, furry cats.	House app challenges	Enhancing social networks and ways of working.
		 Case studies	Uniform documentation of processes & practices.	Growing and consolidating knowledge internally & externally.
	 <b>Documentation</b>	 Books	Design brief, stakeholder map.	Rationalizing and standardizing design led innovation practices. Internal and external facing.
 <b>Reflective Practice</b>	 <b>Standardization</b>	 Processes, Sprints and design outputs.	Knowledge transfer internally and externally. Internally organizational learning, what works and doesn't.	Changing view of design and its role.

### Level 2

 <b>Learning by doing</b>	 <b>Facilitation</b>	 Sprints & co-design activities.	Breaking down silos. Collaborative working.	Adoption of practices and processes across the organisation
	 <b>Fieldwork</b>	 Understanding different users Unlocking tacit knowledge.	Prototyping new service solutions	Human & business centred approach to satellite technology.

### Level 3

 <b>Reflective Learning</b>	 <b>Strategy through design facilitation</b>	 Development of threads and narratives.	Assisting in decision making of projects and direction of the organization. Synthesizing of strategic information Visualization and images of strategy.	Peoples' knowledge of their organization, its direction and its goals increase.
<b>All of the above</b>				

## Discussion

The Satellite Applications sector is emerging with activities focused ‘downstream’ on developing digital services, which involve people, technology, artefacts (hand-held devices, mobile phones) and organisations to be configured in a human centred and business orientated way, to generate economic and social value. To co-ordinate this complexity, there needs to be a high level of co-creation of knowledge between different actors. The designers use creative engagement activities and design practices to consolidate and co-create knowledge flows across the organisation to embed and standardise processes and externally with clients, to identify and generate potential solutions. Through the alignment of different types of knowledge both tangible (level 1 activities) and intangible (level 2 and 3 activities) the design team are able to innovate around the organisation’s service delivery and consolidate knowledge within the organisation. Although Table 1 conceptualises design on three levels, they are all interlinked with high levels of reflection being undertaken by the design team and the organisation itself.

## Conclusion

This short research project highlights design’s role in the Satellite Applications Catapult. By framing the Catapults as KIBs, design activities can be seen as enabling organisational learning at three different levels. As a scoping study the Satellite Applications Catapult demonstrates that the design activities are multi-purposed, working at different levels within the organisation. The case study also shows that design’s role within TIC is often emergent, with it initially conceived as being about visualisation and communication. However, if TICs are clearly framed as KIBs, design’s role can be more clearly articulated as facilitating and enabling the transfer, consolidation and sharing of knowledge within an organisation and externally with clients, leading to the shaping of the innovation capability of the organisation itself. If design’s contribution is to be better understood within TICs then the focus needs to be on its role in aligning and consolidating these different design practices to create a human centred organisational structure that maximises its knowledge sharing capability.

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# Navigating the sociocultural landscape in service design

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## Abstract

This paper reports on a case study where a service design approach was implemented to develop strategies for scaling-up a social enterprise, building on design as a meaning-making and framing practice.

Context deconstruction methods drawn from semiotics and cultural studies were introduced during user research. These methods facilitated exploration of global and local sociocultural trends, mapping business category themes and competing offers, and identifying potential user groups' cultural codes – i.e. expectations, aspirations and socio-symbolic aspects of consumption that influence users' value perception. Subsequently, insights translated into strategies and guidelines for reframing the service value proposition and touchpoints to appeal to a wider potential user range.

Results indicate that widening exploration from a user- to a context-centred approach enhances designers' strategic skills, building stronger capability to observe and interpret sociocultural needs and attitudes. In turn, this highlights the central role of the service designer in leveraging the acceptance and diffusion of innovations.

**KEYWORDS:** service design, scaling, meaning-making, context, cultural codes, semiotics

## 1. Introduction

Innovation uptake is largely dependent on the ability of the solution to improve users' quality of life through the offered (tangible or intangible) benefits (Norman & Verganti, 2014; Tukker, 2004). In a global consumer culture, goods and services establish a symbolic exchange through the meanings consumers attach to the brand name, logo, and product category, as they become part of the users' process of construction of their social identity and differentiation (Hamilton, 2010; Zurlo & Cautela, 2014). Designers leverage the uptake of the innovation, legitimising and positioning offers as aspirational, relevant and meaningful in its sociocultural context (du Gay et al., 2013). Thus, developing relevant and desirable innovations in a saturated market requires a sophisticated and deep understanding of users, and the sociocultural factors that influence choice.

Due to its user-centred approach to innovation, Service Design is rapidly expanding as an area of professional practice in User Experience Design. Service designers may be involved in concept generation, creating operational structures, touchpoint design and even roadmaps to implementation. These practices imply the creation of ‘symbolic’ or intangible value, which is created by framing innovations with certain sociocultural references and narratives that make the innovation appealing and meaningful to defined customer groups (Akaka, Vargo, & Schau, 2015; Clatworthy, 2011). However, it is argued that dealing with strategic and socio-symbolic aspects such as the formulation of value propositions, and its translation into meaningful user experiences stretches the traditional skills of the designer beyond the technical and organisational aspects (utility and usability) (Morelli, 2003; Valencia, Mugge, Schoormans, & Schifferstein, 2014), and designers need to develop capacities to deal with these new dimensions (Santamaria, 2017).

This paper reports a case study where methods from semiotics and cultural studies are used to support sociocultural context research, mapping symbolic meanings and innovation framing with the aim to make the service offer appealing to a wider customer base. Such methods are being increasingly adopted (e.g. in branding and product development) to enhance cultural resonance, overcome cultural barriers and facilitate market insertion and adoption (Maggio-Muller & Evans, 2008; Oswald, 2015; Rapaille, 2007).

## 2. Literature Review

### 2.1 Design innovation in context

Cultural context plays a considerable role in the perceived value of innovations. To be perceived as relevant and desirable, products and services need to be rooted in the context where they will operate (Wong, 2004). This implies that the designer should be able to navigate the sociocultural context, map existing offers, consider the user needs in light of such offers and identify what aspects of the user needs can be met, or improved by new innovation offers.

Clatworthy (2012) points out that to build desirability in services it is necessary to incorporate ‘details’ from the innovation’s context to the design: ‘details that the user can perceive as belonging to their lifestyle, are coherent with the user’s other lifestyle choices, the way they think and the things that express their identity and who they are’ (ibid, p. 85). Equally, Crilly et al. (2004) highlight the role that external visual references (or stimuli) play in influencing decision-making, paying attention to the personal, situational (contextual) and cultural factors that moderate user response. Therefore, appearance and experience are paramount when considering innovation adoption because they influence both *commercial success* and user’s *quality-of-life* or subjective well-being (Crilly et al., 2004; Kahneman, 2012). Furthermore, as ‘taste creators’ (Bourdieu, 2010), designers inevitably affect people’s orientation towards certain goods as legitimate, worthy and desirable, playing a substantial role in the adoption of radical innovation. Designers also bear responsibilities because the effects and consequences of artefacts are political (Zingale, 2016). On one hand, design outputs stimulate people’s imagination and satisfy wants and desires; on the other, people’s social attributes are reconstructed under the impact of these outputs. Therefore, understanding the sociocultural landscape of innovation draws attention to consider the *appeal* and *orientation* generated by design, but also enables more responsible practice by raising awareness of the consequences the innovation holds for users and context.

### 2.2 The sociocultural dimension in service design

Service design innovations are complex offerings whose design require the consideration of multiple aspects, such as technology, development actors, users and context (Morelli, 2002) – all equally involved in the definition of the final configuration. Morelli (2003) describes three

different aspects as complementary design domains: technical, organisational and sociocultural, which require different design capabilities and skills (Table 1).

Domain	Required capabilities/skills
<i>Technical</i>	To develop innovative aspects of the product or touchpoint design
<i>Organisational</i>	To reorganise functions/actors around innovative system configurations
<i>Sociocultural</i>	To influence innovation processes and to determine the paradigmatic context (meaning) in which new products and services can be accepted or refused

**Table 1 – Product-service system design practice domains (Morelli, 2003)**

Morelli argues that traditional design skills and capabilities are strongly projected upon the technical and the organisational domains. However, ensuring contextual insertion is a critical part that determines the innovation's success (Norman & Verganti, 2014). Symbolic meaning (desirability, identity and legitimacy) is not just a financial value added to goods, but has material impact on financial markets themselves (Oswald, 2015). Therefore, an understanding of sociocultural referents is relevant to the development of service innovations because this often *enhances* or *limits* their potential acceptance and diffusion (Morelli, 2003; Zurlo & Cautela, 2014). Fulfilling this role successfully is highly dependent on the designer's capability to observe and interpret cultures, social needs and attitudes. Although this is an intrinsic characteristic to the design activity, support and capacity to perform these tasks during the design process needs developing, because innovation framing is mostly conducted by designers in an intuitive manner (Kazmierczak, 2003).

## 2.3 Cultural deconstruction and framing

Designers construct symbolic value by 'framing' offerings – i.e. attributing identity and meanings to them by recalling on existing cultural references or 'codes' (du Gay et al., 2013). Considering that the way in which an offering is framed has great influence on how it is valued and experienced, even before use (Fitzsimons, Chartrand, & Fitzsimons, 2008; Wolsko, Ariceaga, & Seiden, 2016) it is important for designers to understand which unconscious biases (previously acquired sociocultural associations and experiences) may affect their perception of value and decision making (Kahneman, 2012; Lakoff & Johnson, 2003). Critical methods such as applied semiotics and cultural analysis can support designers in 'decoding' or deconstructing the innovation context, and 'encoding' or framing offerings using the most favourable associations, so that offerings are perceived as desirable and relevant.

Applied or marketing semiotics is well-established as a powerful methodology to obtain consumer and market insights. In contrast to traditional market research, which gains insights mostly by consulting users directly (e.g. by means of interviews, focus groups and questionnaires), marketing semiotics draws insights from the study of *discourses* expressed via popular culture representations (media, advertising, music, film, etc.) by employing semiotic, cultural analysis and ethnographic methods (Oswald, 2012).

The methodology allows the elaboration of sophisticated cultural insights by identifying emergent cultural themes (e.g. values, aesthetics, practices and trends) that have a strong likelihood of spreading into the dominant or mainstream culture (Evans & Shivakumar, 2010). It is usually employed as a strategy for mainstream diffusion of innovations.

Table 2 summarises the most common semiotics operations applied to market insight.

Operation	Description	Function
<i>Binary Oppositions</i>	A pair of concepts that relate in direct opposition (i.e. clean/dirty)	It breaks cultural and category codes into two opposite sets. Normally a good place to start the code-mapping process, see opportunities for innovation, resolve trade-offs and cultural contradictions.
<i>Code Mapping (category)</i>	A snapshot of the cultural landscape frozen in time, and the active codes present at that particular time	Searches for key metaphors and themes present in the category by dividing it up. Good for locating developing themes, and cross-fertilisation with themes from other related categories.
<i>Code Mapping RDE (trajectories)</i>	Residual, Dominant and Emergent codes	Maps the cultural shift of values, meanings and cultural codes diachronically. Useful for observing how cultures evolve, spotting new ways of thinking. Identifying emergent codes which have potential to spread as mainstream trends.
<i>Semiotic Square</i>	Paired concepts analysis based on Jakobson's distinction between contradiction and contrariety	Useful for accessing deep structures informing the communication and perception of meaning – i.e. the underlying connections with structures of power and logic.
<i>Myth</i>	Express and serve to organise shared ways of conceptualising something within a culture	Serve as process of naturalisations – i.e. they make dominant and historical cultural values seem 'normal', 'natural' and 'common sense'. They can serve to hide the ideological function of signs and codes because they appear as self-evident truths.
<i>Cultural Archetypes</i>	Rooted symbols and cultural archetypes such as gold, America, home, work, family, etc. Received wisdom, 'what everyone knows' and 'goes without saying'	Useful for building narratives and associations with deep-rooted cultural values and traditions. Normally used in storytelling material, film, novels and popular culture.

**Table 2 – Most common semiotic operations applied to market insight**

The semiotic approach acknowledges the individual's beliefs, preferences and behaviours conform or confront 'implicit' socially agreed rules expressed through social signifiers to mark status and belonging, and so forming 'in' and 'out' groups. The analysis concentrates on uncovering 'naturalised' meanings which users are often unable to articulate, because these operate largely at subconscious level (Oswald, 2012).

Figure 1 illustrates the typical 'cultural landscape' or context that is normally analysed for these purposes.

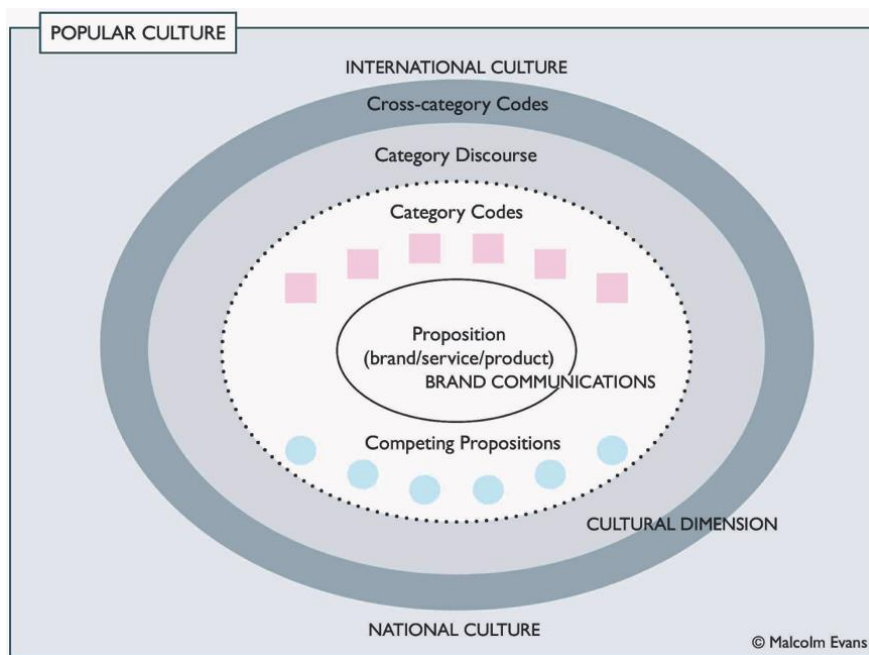


Figure 1 – Cultural context research landscape (Evans, 2014)

While these methods offer great potential to aid in the elaboration of symbolic value, they are normally implemented by professional semioticians and market researchers – not designers. Therefore, the capabilities and requirements for their integration to the service design process needed to be empirically investigated.

### 3. Method

The aim of the study discussed in this paper was to investigate the value of introducing cultural deconstruction methods to support deeper user research and identify business opportunities to reach a wider customer group.

#### 3.1 Case study selection

Crop Drop, a social enterprise that operates a vegetable box scheme in the London Borough of Haringey was identified as a good case study (Figure 2). The start-up is part of the Growing Communities Hackney, a non-profit organisation dedicated to promoting local and sustainable food production and consumption. At the point of intervention, it had been operational for two years, therefore the owner (participant) was already quite knowledgeable of the local context, and had explored most other traditional methods to understand customers (e.g. surveys, focus groups and feedback questionnaires). This made her suitable to quickly judge the value of new approaches to reveal useful insights.





Figure 2 – Crop Drop. Local, non-profit social enterprise ([www.cropdrop.co.uk](http://www.cropdrop.co.uk))

### 3.2 Study design and research strategy

A participatory action research strategy was adopted where the researcher, acting as *design consultant*, collaborated with the participant in the joint elaboration of the plan, objectives and implementation of the design intervention, as well as evaluation and reflection on results. The study was conducted over a total period of nine months, with collaborative working sessions held on a once-a-week basis.

The study design followed Tripp's (2005) four-step model of action research cycle (Figure 3): *Plan* (familiarise and set intervention objectives), *Implement* (design intervention), *Evaluate* (assess results against objectives set) and *Reflect* (evidence learnings and change of practice).

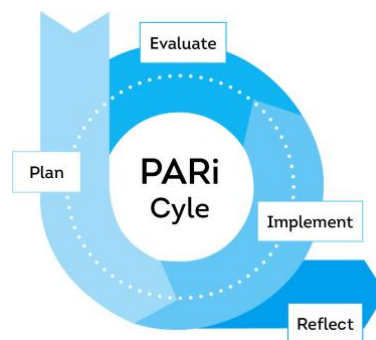


Figure 3 – Action research cycle

Further to the research methods described in detail Section 4, the researcher embarked on self-reflective practice, journaling records of the process undertaken while engaged with the participant as well as views and values, in order to learn by reflection in and on action (Schön, 1991). Journaling notes also captured the tools/methods being used, and reasons for their selection. All participatory sessions were captured in audio and photographic records. Transcripts of these sessions contributed to enrich the researcher's own journal accounts of the process. Furthermore, data was collected through a feedback questionnaire completed by the participant at the end of the cycle. Thematic analysis was used to analyse journal notes, feedback and transcripts of participatory sessions.

## 4. PAR Intervention process

The following sections describe the intervention process in four steps: Step 1 (plan) Familiarising and planning, Step 2 (Implement) design intervention, Step 3 (evaluation) and Step 4 (reflection on action).

### 4.1 Step 1 – Familiarising and planning

This consisted of a working session held with the participant to get to know each other and jointly elaborate research objectives. Conversations entailed reviewing business background and operations, publicity material, customer feedback, and existing business and marketing plans; and identifying ‘priority issues’ to tackle through design intervention.

The researcher first introduced the concept of service design and some commonly used tools – e.g. service blueprint, customer journey, stakeholders map and user personas. Secondly, cultural context analysis was presented as ‘a strategic approach to better understand users and business in context’, explaining how these methods differ from more conventional market research (e.g. surveys, focus groups) and what could be obtained (tacit sociocultural ‘clues’ that influence a customer’s choice).

As the participant’s interest was to attract new users, she expressed interest in conducting sociocultural context research to identify potential user groups, and their needs and aspirations, before embarking into touchpoint redesign.

Therefore, two objectives for design intervention were set:

Objective	How
Spot opportunities and develop strategies for scaling up	Conduct cultural context analysis
Adjust service touchpoints to appeal to wider customer group	Reframing value proposition and redesign of touchpoints

### 4.2 Step 2 – Design Intervention

#### 4.2.1 Researching Sociocultural Context to Spot Business Opportunities

The aim was to identify and map the most relevant ‘cultural codes’ present in this context (implicit verbal and visual clues) with appeal to a wider user range than the current customer base. To this end, a ‘data set’ of materials related to the business sector (food) were gathered separately by the researcher and the participant (news clippings, photos, adverts, website screenshots, book covers, magazines images, billboard ads, pictures of products, packaging, delivery vans, etc.). These materials served as the research data used throughout a series of participatory activities, as follows:

#### Activity 1: Identifying macro societal change in trends, values and meanings

The analysis started by mapping global meanings – in this case, it meant analysing the food category at its broadest level to understand associations, myths, trends and generic assumptions related to food consumption as a social practice, and identifying the position of Crop Drop’s offer within this category.

To make ‘naturalised’ meanings and assumptions explicit, the data set was first analysed by asking: *‘what is food about?’*. Two broad overarching themes emerged: *nutrition* and *pleasure*. By further analysing the materials, it was found that, at one end of the spectrum, food was represented as nutrition – its most *factual* level, as a necessity for human survival. However, at an emotional, visceral level, food is also associated with the *pleasure* derived from satisfying

that need. To understand how people might derive behavioural attitudes related to these conventions, a lens that considered ‘users as social beings’ was used. This lens prompted the observation that the ‘pleasure of eating’ can be enjoyed *alone*, or *together* with others, further breaking down the category in more specific ‘subcategories’ or themes.

These four concepts (nutrition–pleasure, together–alone) were used to form an axis based on Greimas (1989) Semiotic Square to uncover naturalised myths and cultural dilemmas by building on four logical relations. Next, stereotypical representations (relevant to the UK) were placed in each quadrant to illustrate the notions between the quadrant polarities – i.e. ‘*nutrition–alone*’, ‘*nutrition–together*’, ‘*pleasure–alone*’ and ‘*pleasure–together*’. Guided by the stereotypical representations, and asking ‘*it feels like ...*’ each quadrant was labelled. The label concepts were further elaborated into more detailed descriptions of the characteristics associated with each concept (Figure 4).



Figure 4 – Broad Category analysis axis, including Crop Drop’s position

Lastly, Crop Drop was positioned within the Broad Category Map axis, to consider its perception from the point of view of potential customers in relation to other market offers. It clearly emerged that Crop Drop was positioning itself as a convenient way to access ‘wholesome’ foods. As this was a Broad Category analysis, it was necessary to break it down further by considering these aspects more closely.

## Activity 2: Mapping local take on global trends and meanings

In globalised society, it becomes relevant to observe how global discourses are represented at local level. Crop Drop promoted being a local supplier as one of its benefits. It was therefore interesting to make explicit the ‘global’ expressions against which Crop Drop differentiated itself. To do this, the ‘wholesome’ category was mapped on a spectrum ranging from the global (widespread or mainstream) to the local, adding some visual references (representations of offerings) at each end of the spectrum (Figure 5). Analysing the representations under each polarity evidenced that the *global* offered ‘ease of access’ and ‘convenience’; while the *local* offered ‘speciality’, ‘crafted’ and ‘artisan’ (quality and personalisation) – an opposition to assert differentiation.

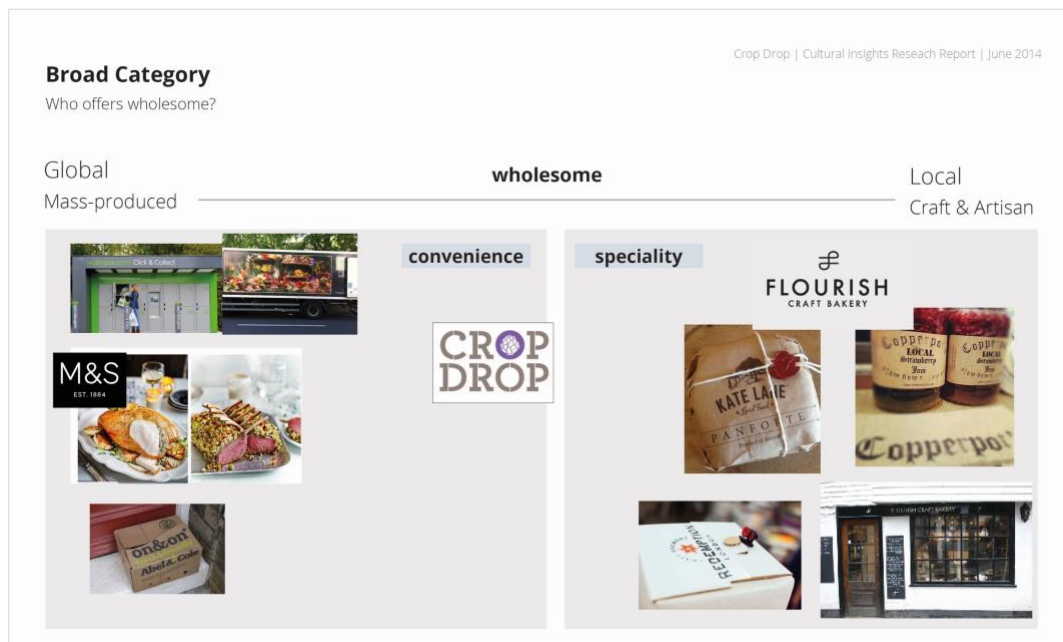


Figure 5 – Mapping the global-local expressions of *wholesome* as value propositions, including Crop Drop's position

### Activity 3: Defining the 'Local' paradigm

Next, the global–local paradigms were explored by applying a 'binary opposition' semiotic operation. This method places the polarities at the top, and deconstructs the 'implied, tacit and naturalised' meanings – a network of associations that people may have acquired through past experiences, word of mouth and the media – by listing them under each paradigmatic overarching theme (Figure 6). It was important to make these connections evident because these associations are triggered instantly and mostly unconsciously by sensorial stimuli.

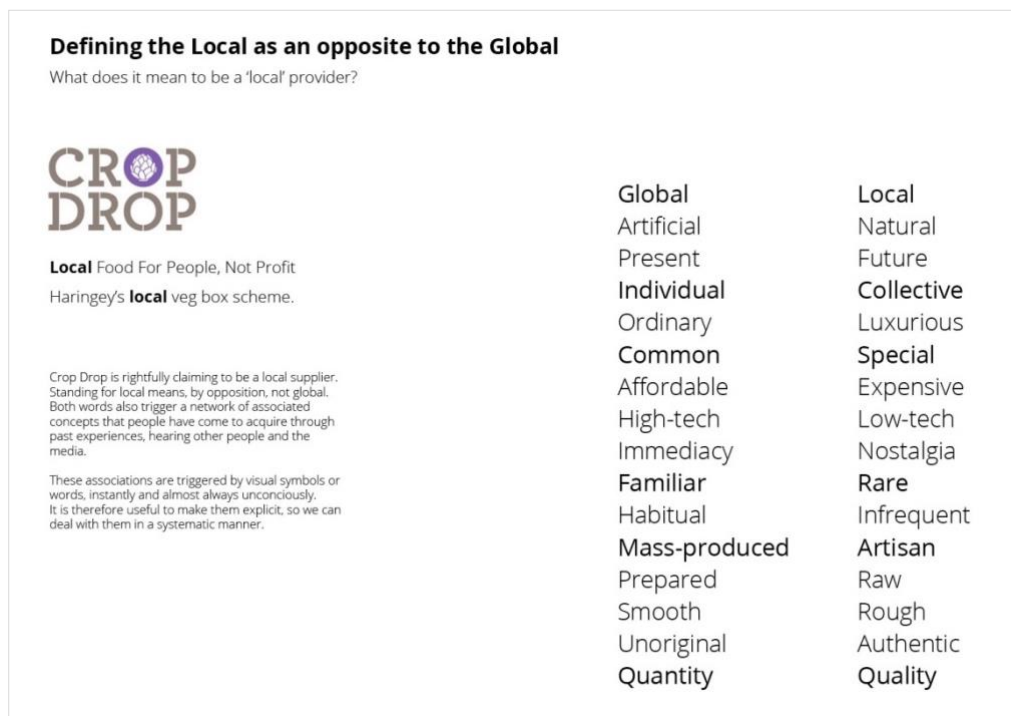


Figure 6 – Paradigmatic associations

#### Activity 4: Mapping positioning against category competitors

Four ‘factors’ that shape this category were used to map positions in an axis (Figure 7):

*Limited Choice vs Wide Choice* – Due to its proposition as a local produce supplier, Crop Drop offered quite a limited offering compared with competitors, i.e. brands offering organic.

*Speciality vs Convenience* – However, if it is assumed that people need other groceries besides vegetables, this weakness could be turned around by ‘elevating’ the perception of the offer from ‘limited’ to ‘a special selection of quality vegetables’. To do that, it becomes necessary to reposition the brand away from the ‘convenience’ space (where it currently competes badly with the global offers), and towards the ‘speciality’ end of the spectrum.



Figure 7 – Category competitors mapping

Meanings are not fixed entities, and as cultures are always in flux; discursive frames and representations of values are constantly evolved and transformed by producers and users. Consequently, residual, dominant and emergent forms coexist as varied expressions within any cultural moment (Williams, 1977). Hence the concept of what is considered ‘contemporary’ or ‘old-fashioned’.

Aspirational brands are positioned in the speciality space. They appeal to customers’ senses and emotions by using certain aesthetic associations that communicate trust, inspire and elevate people’s everyday ordinary experiences. It is the *symbolic value* of the brand as expressed through semio-aesthetic associations that makes them aspirational. Therefore, people are willing to pay more for products, which are perceived not as *ordinary*, but *extraordinary*.

Start-ups that position themselves as aspirational have much greater chance of expanding rapidly, because they are perceived as the ‘cool’ thing to do or have. Although, Crop Drop was already expressing these values, it became necessary to reframe the service offer and its representations to fit the user group’s expectations and ideals of ‘quality’ and ‘speciality’ more closely.

#### Activity 5: Exploring related categories’ codes

In general terms, people make coherent choices within different areas of their lives, guided by the values they hold (Wolsko et al., 2016). Consequently, eating wholesome, local and



speciality vegetables expresses values in just one aspect of their consumption practices – i.e. it is only ‘a piece of the puzzle’ that ‘fits’ among many other pieces (brands, practices) to form a person’s lifestyle and identity. The aim of exploring related categories is to gain a wider understanding of the interconnected pieces and see ‘the puzzle’s picture’. Its purpose was twofold: first, to identify the discourses and representations that others in the same ‘space’ (especially the successful ones) are using, in order to map favourable codes (associations) that could be useful to potentially enhance Crop Drop’s value proposition. Secondly, the exercise could help in spotting partnership and collaboration opportunities with like-minded organisations that might not have been obvious before.

## Activity 6: Identifying potential user groups

Secondary research was conducted to gain insight into the neighbourhood population, trying to identify which households are willing to eat veg on a more regular basis, but also open to accept a seasonal, unconventional range, as this implies being resourceful and creative with cooking.

Borough statistics were consulted and four customer types were profiled, using statistical figures and illustrative ‘persona’ stereotypes (Figure 8). The ‘Young Progressive Families’ were considered a good match to Crop Drop’s value proposition, as this group represented a ‘natural progression’ of the current predominant customer group, the ‘Singles and Young Couples’.

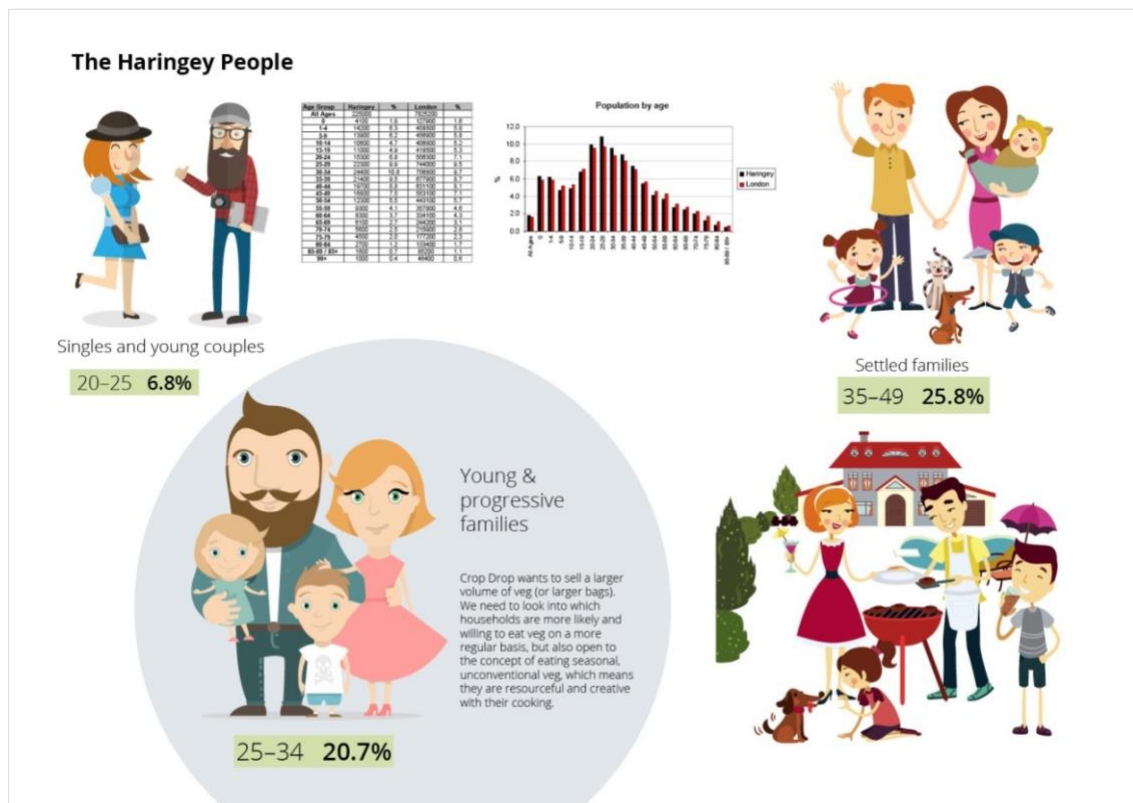


Figure 8 – Potential user group stereotypes

## Activity 7: Mapping the target group codes

Stereotypes are widely used both in marketing (customer profile) and service design (user persona). Personas are descriptive examples of typical target groups who have similar aims, motivations and behaviours, and can be elaborated at different levels of complexity (Massanari, 2010). They are a good tool for human-centred approaches where the user is the focus and empathy is key to understanding their needs (Brown, 2009).

Based on the persona profile, lifestyle choices that are popular within this target user group were mapped – i.e. brands and social practices that users have incorporated into their lifestyles – because these carry the symbolic meanings that define this specific group’s social identity. To be perceived as relevant, any innovation intended to appeal to this group must be perceived as ‘fitting’ within other choices, and meet this user group’s semio-aesthetic expectations.

Figure 9 illustrates the case. The collection of images on the right are ‘**signifiers**’ of this customer group’s cultural codes – which bind them together and as a social group, but also apart from other groups by means of a differentiated **aesthetics, values and practices** expressed in these representations (Bourdieu, 2010).

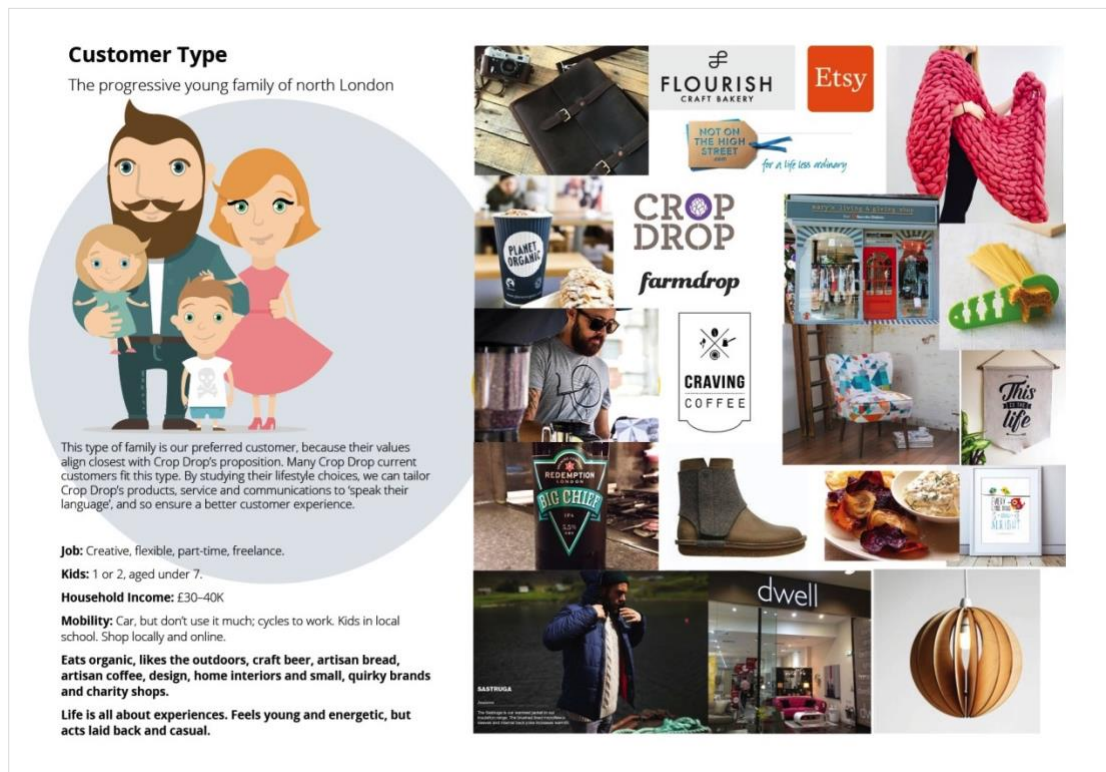


Figure 9 – Visual mapping of lifestyle choices

By understanding these codes, it was possible to begin drawing some strategies to frame Crop Drop’s offering to fit more closely to the user group’s expectations and aspirations.

### Activity 8: Producing a reference ‘Contextual Code Map’

The visual references mapped in the previous step were analysed, deconstructing them and classifying them into three groups: *Aesthetic Codes* related to matters of style and taste, *Valued Lifestyle Practices* related to what is normal and enjoyable to do for people in this group and *Appreciated Values* related to the underlying values associated with quality of life. From the analysis of each group, themes of signifiers (representations) emerged, and these are illustrated with explicit examples so that they can serve as reminders of how each ‘theme’ was manifested in its particular context (Figure 10).

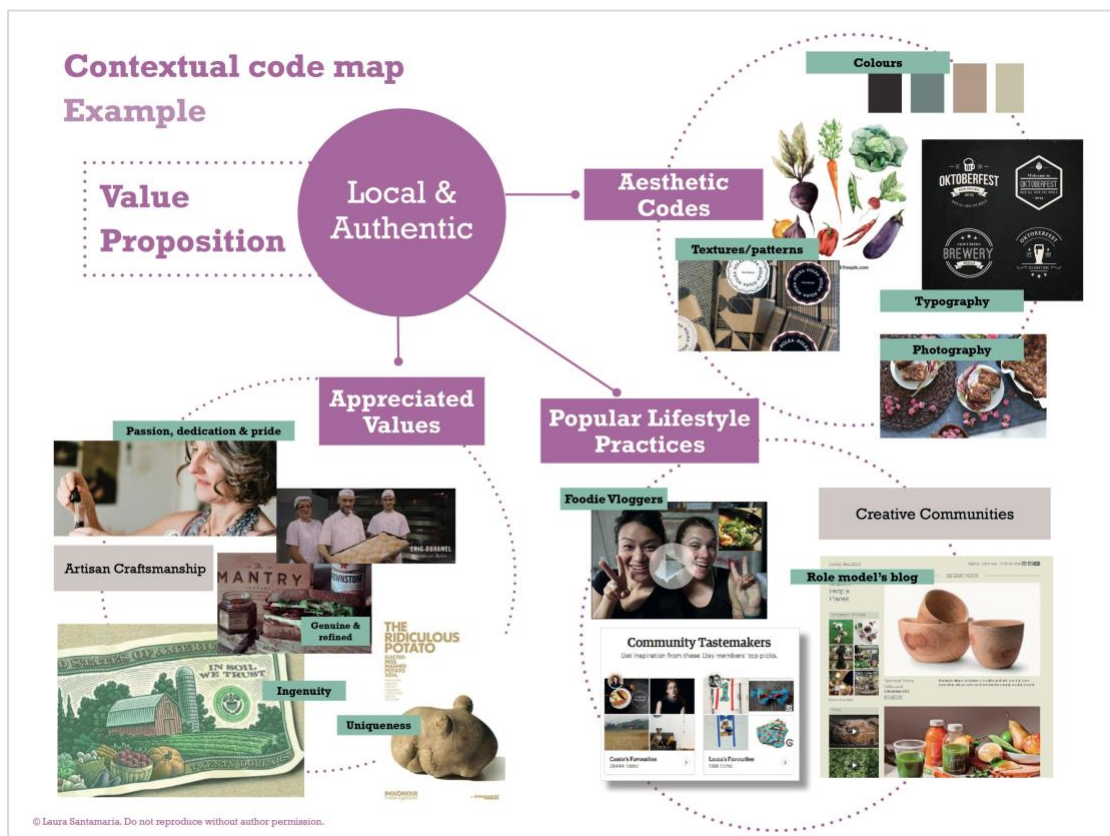


Figure 10 – Aesthetic codes mood board showing sample signifiers

A summary was produced with recommendations for the prototyping phase (Figure 11).

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## Summary

**Local is good**  
But to make it feel special, it is best to lean towards craft and artisan, and away from 'farm', rough and raw.  
Codes: Elegance, nostalgia, rarity.

Introduce some 'gourmet' feel to the brand to convey 'premium and quality' aspects. Look at artisan bread, coffee, beer and chocolate brands for references.  
Codes: black, craft paper, beige and red/orange, mustard yellow, retro/vintage-style typefaces.

Be emotional and evocative rather than factual.  
Appeal to the senses, make it tempting, delicious, fun, wholesome but special.

Watch trends in vegetarian restaurant images and communications. Show a balance of cooked and raw.

Promote intrinsic values  
Reinforce relationships over health and environment.  
It's not about a box of veg, it's about the experience of learning new ways of being together.

Figure 11 – Summary recommendations



## 4.2.2 Reframing the value proposition

In product-service system offers, the form of the items, the branding and communications and the experience of the service all interfere with each other in terms of how the innovation's value is perceived (Ceschin, Vezzoli, & Zingale, 2014). In order to improve the service visibility, credibility and appeal, the researcher proceeded to 'reframe' certain touchpoints using the favourable codes identified throughout the analysis activities. Prototypes were based on the touchpoints within the 'Aware' and 'Join' customer journey steps – i.e. publicity materials (a poster and flyer) and the website interface (Figure 12).

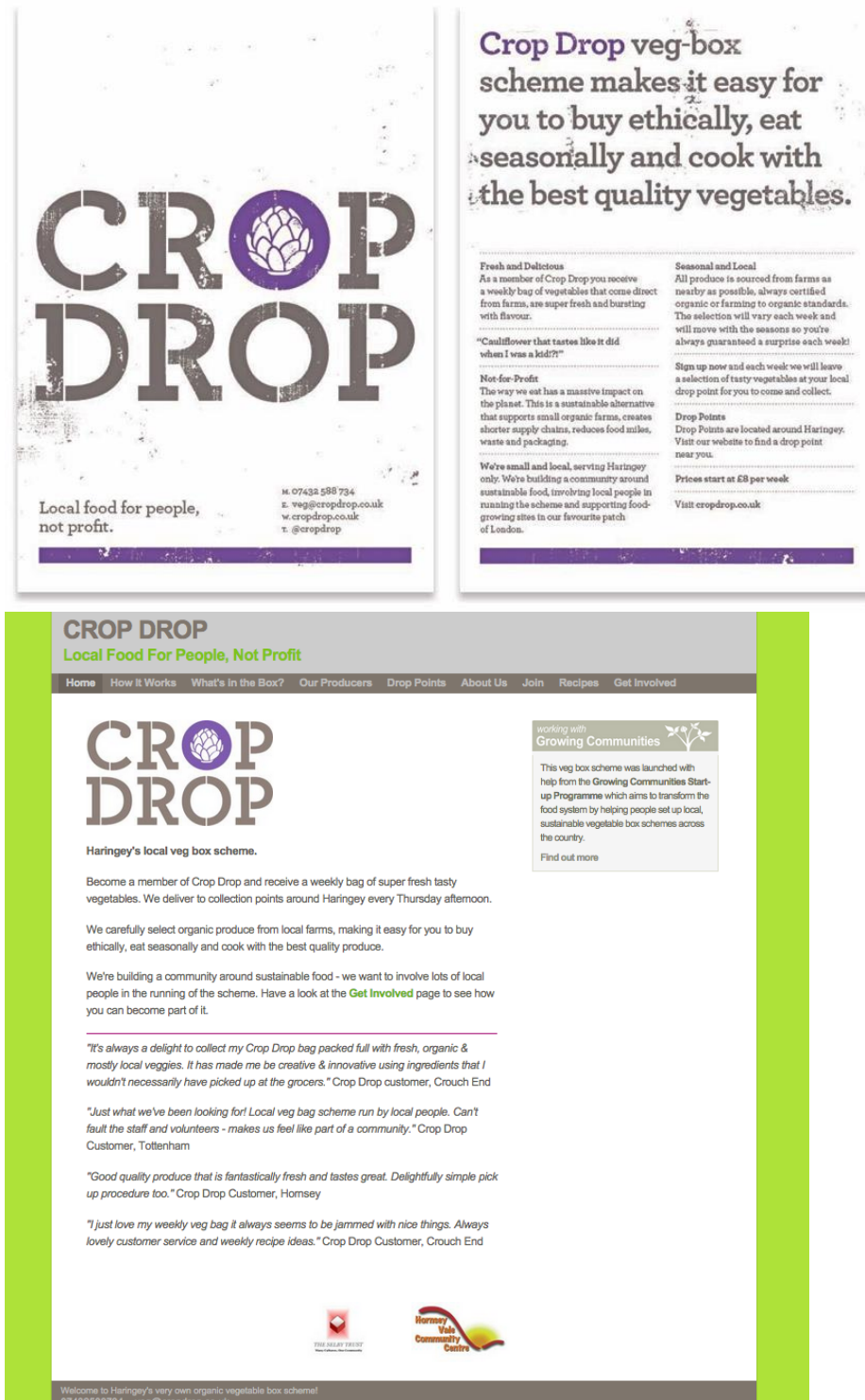


Figure 12 – Existing publicity material and website

Existing materials and distribution strategies were analysed as follows:

*Poster*: Seemed a valid and effective strategy for brand awareness and presence in the local area.

*Flyer*: Was not found as an effective vehicle to reinforce brand values and positioning. The fact that they are handed out in the street, or pushed through letterboxes, coupled with the format (A5) and lightweight paper stock, caused this piece of publicity to be perceived as lacking value and worth discarding. This is mostly ineffective as far as legitimising the service as ‘special’ and ‘authentic’ is concerned.

*Website*: this was perhaps the most misaligned touchpoint with users’ expectations and signifiers. A crucial one as it was the only means for users to join the service, it did a poor job of legitimising the service qualities.

#### *Language framing*

Firstly, the wording was adjusted using a well-being rather than an environmental discourse. Table 3 summarises the changes introduced.

	Existing proposition	Reframed proposition
<i>S strapline</i>	‘Local food for people, not profit’	‘Live the seasons’
<i>Main message</i>	Crop Drop	Hello Winter
<i>Sub text</i>	Crop Drop veg-box scheme makes it easy for you to buy ethically, eat seasonally and cook with the best quality vegetables	Eat in tune with the season. Feel stronger, be the change.
<i>Main text</i>		Big changes can start with small steps
<i>Highlight</i>		Winter’s local best

**Table 3 – Changes in language to bring framing in line with new positioning**

Crop Drop’s original strapline is ‘Local food for people, not profit’. Due to its campaigning tone, it could be argued that this statement proposes a specific ideology – that food supplying must not be a ‘profitable’ activity, a stance and assumption which might resonate with certain audiences whose values align to the socio-political implications of this ideology. This, in turn, might exclude other user groups whose interests, for example, could be to start incorporating seasonal and local ingredients into their diet for health-related reasons. On one hand, it adds value by proposing a ‘non-corporate’ approach to food retailing; on the other, it subtracts value by implying a certain ‘amateur’ approach. However, if that same statement is framed with an aesthetic that is in line with other ‘reputable referents’ – i.e. aligned to the user group’s lifestyle choices, then the value proposition of Crop Drop appears much more appealing and trustworthy.

It is worth clarifying that there is no right or wrong statement – framing should correlate with the objectives to accomplish (Wolsko et al., 2016). However, because framing predisposes the user, affecting their perception of value, receptivity and appreciation, it is paramount to be aware of the effects and implications of choosing certain framing options over others.

#### *Design framing*

Based on the code-mapping exercise, some of the most favourable codes were selected and incorporated into the design outcome. The resulting design evokes crops and ‘land’ using warm and emotional references. Figure 13 illustrates some of the codes selected and how they were used.

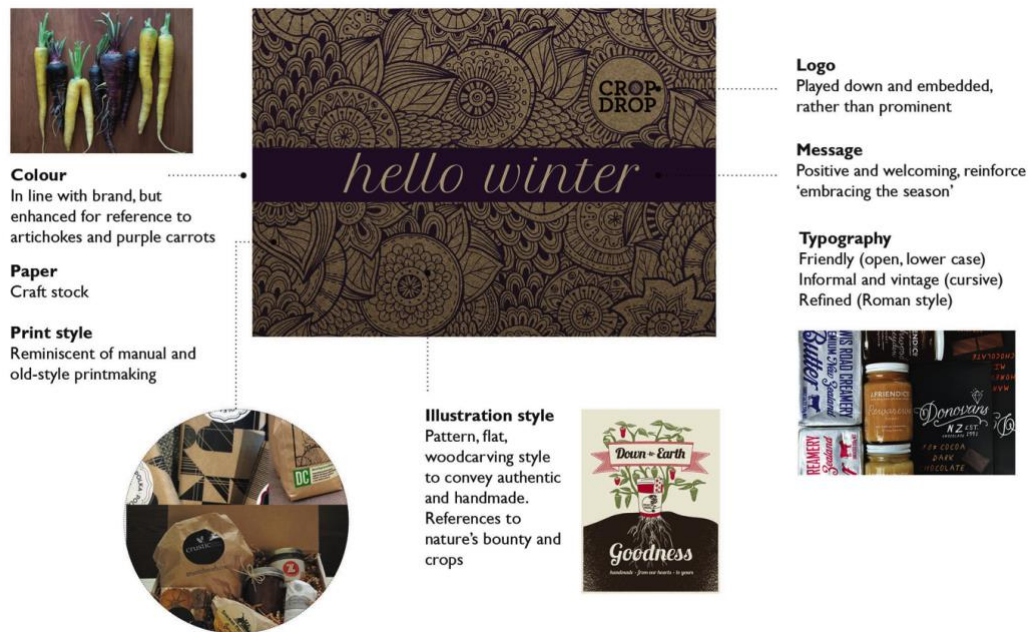


Figure 13 – Example of codes incorporated into publicity design

The website redesign (Figure 14) incorporated the *aesthetic* codes, but also allowed us to work with codes related to the users' *appreciated values* and *practices*. The most salient are:

- Ample display of visual imagery of fresh produce and tantalising, cooked meals
- Homepage company video incorporating a short presentation of the company, to communicate company values at an emotional level
- Featuring the owner prominently, to make the experience feel much more personal and welcoming but also to reinforce a sense of 'dedication, passion and love' – characteristics of small business owners and craftsmanship
- Featuring suppliers more prominently, to communicate transparency and collaboration
- Blog and social media feeds provide a sense of community, participation, openness, and keep adding to the site fresh and relevant content
- A Recipe section, where recipes are tagged by season and type of produce, so that users can easily find inspiration

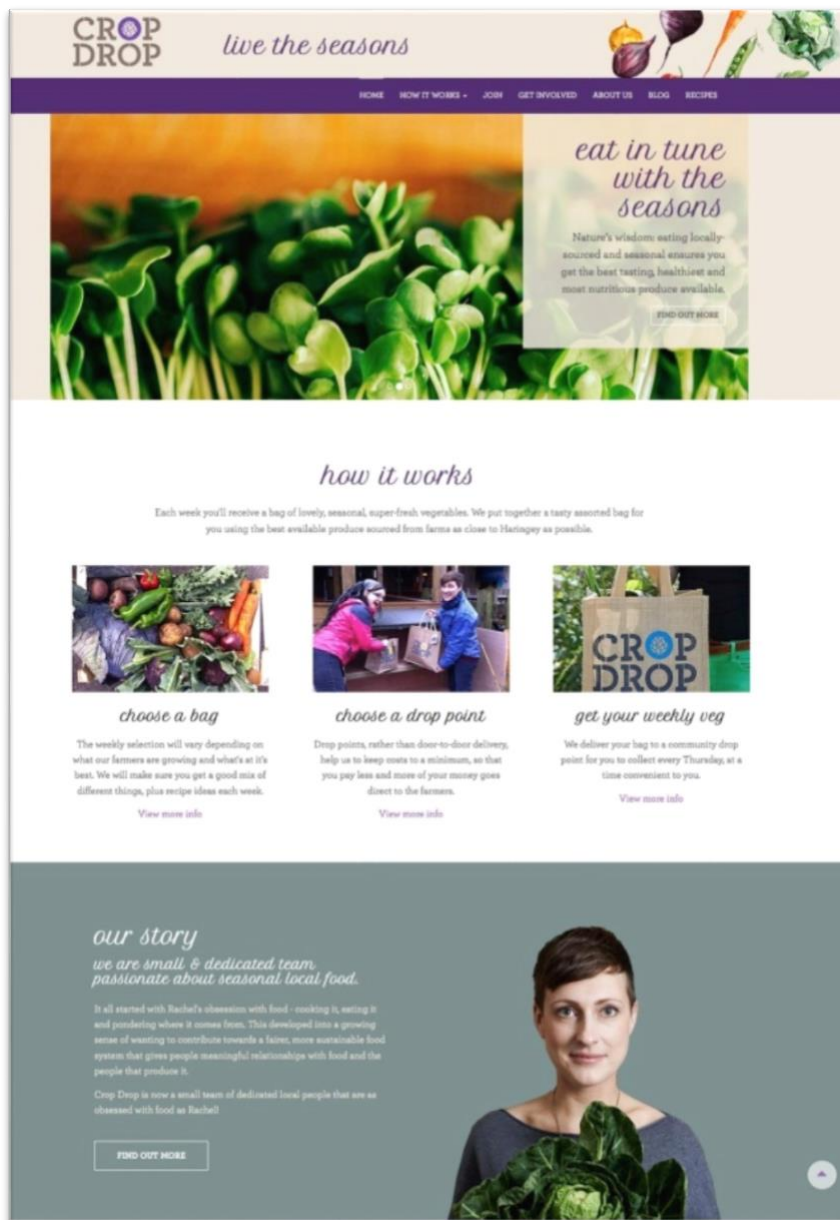


Figure 14 – Redesigned website ([www.cropdrop.co.uk](http://www.cropdrop.co.uk))

### 4.3 Step 3 – Evaluate

In this step, the results of the intervention were evaluated against the objectives set in Step 1, Plan (section 4.1):

Widening target user exploration from a user- to a context-centred approach, enabled the designer to elaborate richer insights. The most salient benefits were:

- Cultural context deconstruction research expanded the focus on ‘user needs’ (which tends to focus on users as individuals) and reinforced an understanding of what binds user groups together – i.e. the social construction of value and meaning.
- It enabled drawing a richer picture of users as ‘members of communities’ by providing a method to observe and interpret sociocultural needs and attitudes.
- Mapping user group lifestyle choices was key for understanding how this user group constructs their social identity through consumption and constituted the ‘data set’ of analysis for extracting the codes that regulate this particular group. Therefore, the advantage of mapping the users’ lifestyles visually, beyond being useful for

understanding what these users are interested in, is how the choices they make are represented and how these symbolic meanings are constructed through aesthetic and other codes.

- The designer used methods from semiotics and cultural studies, which provided adequate support to tackle meaning-making aspects more methodically. These integrated well with existing design methods and processes, adding support to deal with the sociocultural dimension of service design.
- The Code Map (Figure 10) and Summary Recommendations (Figure 11) served as clear guidelines to follow as ‘design constraints’ in the design of the prototypes. These helped to keep the conversations on touchpoint design focused on the user, rather than assumptions or personal taste and preferences.
- It is worth noting that the design trials were based on the contextual research findings, and these were not complemented with insights obtained through other user research methods which could have helped to obtain a more rounded picture of the target group’s aspirations and preferences. This is necessary because perceived value and meanings of artefacts are co-created, so the users’ response to these initial prototypes was, therefore, a missing part.

#### 4.4. Step 3 – Reflect

The intervention evidenced how sociocultural insights can methodically inform the framing process of design artefacts. Although on the outside it may appear to have done ‘just a redesign’, by focusing on *process* – rather than outcomes – throughout the intervention, the ‘naturalised’ practices of framing and meaning-making became self-evident and conscious, rather than intuitive and unconscious.

The use of critical methods prompted self-reflection and learning that impacts future practice by making both the researcher and participant more aware of how assumptions, biases and values affect the way that the service framing is constructed. It made evident how values and perceptions can be identified during the research process and negotiated through design.

Researcher’s journal note:

*‘Before the intervention, my practice was intuitive, and my confidence was based on heuristics and assumptions. Having to follow a framework and methods made me design in a different way, making me conscious of how my practice is conducted and what it is actually that I do, and why.’*

Participant feedback

*‘I now feel better equipped to understand potential customers aspirations and expectations. This exercise has opened my eyes, especially in terms of communicating benefits that are more relevant to them, rather than relying solely on communicating the product and service features.’*

## 5. Discussion

As standard practice in service design, target users are explored through user-centred methods to draw insights and ensure that the value proposition fulfils users’ real needs, and touchpoints provide a good user experience. User research is conducted employing qualitative and ethnographic methods (interviews, shadowing, direct and indirect observation, cultural probes). However, while existing methods work well to understand users’ needs that are directly observable and/or verbalised by users, the tacit aspects that influence people’s decisions – framing biases, symbolic, identity and sociocultural codes – are much more difficult to capture by these means. Research of this nature, although fundamental to understand the socio-symbolic aspects that influence users’ perceived value

is seldom considered or conducted by designers, due to a lack of knowledge of the benefits or the lack of methods to do so.

The cultural deconstruction methods used in this study supported the designer in mapping of socio-symbolic aspects of innovation that influence users' preferences, and impact upon users' perception and value judgement of the service. The insights generated helped realigning the service to the needs of a wider range of customers, improve competitive advantage by sharpening the value proposition and elaborating clear guidelines for better touchpoint design.

At the development stage of this social enterprise, repositioning the service offer and 'reframing' some service touchpoints proved beneficial in that it opened new areas of business opportunity. Therefore, this lens proved highly valuable for devising strategies based on a better understanding of users.

On the other hand, it is worth highlighting that addressing perceived value (reframing brand and communications and some touchpoints) without necessarily implementing changes to the offer and operations might be ineffective for delivering deep customer satisfaction and retention. If only the perceived value is aligned with customer expectations, there is bound to be disappointment if the service cannot deliver what the customer has perceived to be an appealing offer (Conner & Patterson, 1982). The user might be persuaded but fails to commit. This effect can be perceived as deceiving, negatively impacting the user's experience and engagement with the service.

Therefore, results of sociocultural and contextual research might imply a readjustment of the business model, the value proposition and service core operations, in order to truly fulfil user's expectations. These managerial decisions carry significant consequences in terms of service restructuring with their due financial resource allocation to which the provider may be hesitant or reluctant to commit. Therefore, introducing this kind of research prior to launch (e.g. at prototype stage) can save valuable time and resources, and avoid the emergence of ill-defined services or start-ups that struggle to attract a critical mass of customers and be self-sustainable.

## 5. Conclusions

The aim of the study discussed in this paper was to investigate how sociocultural context deconstruction methods applied in service design could support designers to identify business opportunities and develop more strategic design practice.

In that, this study contributed a useful sociocultural lens through which to make sense of the relationship between the value proposition, users and the culture(s) they are immersed in (Oswald, 2015). In turn, by building stronger skills in designers to observe and interpret sociocultural needs and attitudes, designers are enabled to adopt a more strategic approach to creating services that bear greater resonance and meaning with users.

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## Exploring the future of consumer retail

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### Abstract

This paper describes an academic/industry partnership that leveraged Service Design to explore the impact of online shopping to brick and mortar retailers. NCR, a global software company, sought a partnership with the School of Industrial Design at the Georgia Institute of Technology (Georgia Tech) to understand how different aspects of design could be used to respond to rapidly shifting consumer experience expectations.

Both partners benefitted from the collaboration beyond their original expectations. Taking an iterative multi-semester approach, the effort yielded insights beyond the original intent, resulting in a broader application of Service Design to NCR's sales approach, providing overall more integrated innovation processes. The partnership also showcased the Georgia Tech students' ability to research, analyse, and generate new ideas using Service Design methodologies.

**KEYWORDS:** user experience, service design methodologies, consumer retail, digital technologies

### Introduction: The Threat of Online Shopping

Ecommerce and companies like Amazon.com have shifted consumer habits with how they evaluate, shop, pay for, and take delivery of products and services. Traditional brick and mortar retailers are seeing their customers and revenues shift to those who provide online services, home delivery, and other conveniences enabled through ecommerce, web, and mobile applications.

Conversely, purely online retailers are having to shift their business models to incorporate brick and mortar in order to allow customers to experience their products (like eye glasses

from warbyparker.com), or provide last mile delivery for fresh food (like Amazon's purchase of Whole Foods Market in 2017).

This shift towards ubiquitous commerce presents a unique opportunity for innovative brick and mortar retailers to leverage their existing real estate and employees to compete more aggressively with online.

NCR, founded in 1884 as National Cash Register, provides point of sale, self-service, customer loyalty, and payment technologies to retailers worldwide within its retail division. As a Business to Business (B2B) entity, NCR recognizes two major developments:

- a rapid shift in consumer shopping behavior
- a fundamental shift in the way businesses buy from their partners

Recognizing that traditional computer science or engineering partnerships were not equipped to address this consumer shift, NCR sought a university partnership to collaborate on consumer and customer experience design.

In fall of 2016, the NCR's Sales Engineering arm approached the School of Industrial Design to research and prototype ideas with the goal of "prototyping" the retail store of the future. Uniquely, NCR invited some of its strategic retailer customers to collaborate in the process, providing students with direct access to retail operational leaders to conduct their research.

While the initial challenge focused on technology leveraging the latest digital mobile, display, checkout, data collection and analytical tools available to the retailer, the School iterated and recommended what turned out to be a more powerful approach to tackle this challenge that resulted in a broader application of Service Design to how NCR does business.

## Reframing the Problem

Faculty from the School of Industrial Design proposed shifting the focus from the integration of hardware and software to benchmarking the current status of online shopping vis-à-vis shopping in a more traditional 'bricks and mortar' retail venue. This benchmarking was to serve as the foundation for future Service Design work.

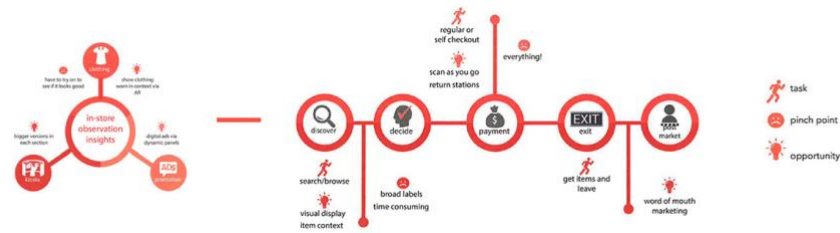


### Benchmarking: Online Shopping vs Face-to-Face Shopping

The partnership launched an open-ended project that provided students with the latitude to push conventional boundaries while also providing NCR with the insight and exposure to the potential of integrating Service Design methodology into their business operations and innovation approaches.

## Leveraging Service Design Methodologies

To meet NCR's objectives, the student project followed an established Service Design process. The first step incorporated an initial research phase that would cover both primary and secondary data collection including a literature search, surveys, interviews and observational studies in-situ. This would help identify when and where the customer came in contact with the retail operation as well as how the retail operation was structured to respond to the customer. Collectively this information would form the basis to generate a *Customer Journey Map* to outline the *Touchpoints* as well as key *Painpoints*. These *Touchpoints and Painpoints* would then be used to structure a prioritized list of *'Design Opportunities'*.



## Observational Studies are Key to Understanding the Customer Journey

The second phase involved ideation and concept development to generate solutions to address problematic issues identified in the earlier research phase of the project. New technologies are perhaps an obvious solution to minimize or eliminate the points of friction for the customer. However, technology alone can be a double-edged sword – introducing technology without consideration of the full implications for both the customer and the retailer can in fact easily complicate the shopping scenario.



## Evaluating Technology Options

Care was taken to prototype and evaluate how new ideas and concepts for change would affect both the consumer and the retailer. Validating initial ideas through a ‘Customer Walkthrough’ provided a strong visual simulation of the proposed concept and helped identify the fluidity of the proposal or unexpected new problems before refining an implementation plan. The students paid particularly attention to engaging customers in the design development process to both engage the customers as stakeholder and at the same time ensure they understood the key issues that drove the value proposition from the customers’ perspective (Trischler & Scott, 2014).

Through this ongoing focus on Service Design principles, the class and NCR identified an important insight: Service Design can be a key competitive advantage for innovation by focusing on the *human* experiences.

With full access to five strategic retailers, the students and faculty achieved the original goal requested by NCR and provided operational designs to the participating retailers, some of which were implemented and are in play today.

However, and more importantly, students and faculty suggested there was an opportunity for NCR to look inward and consider applying Service Design to how it designed products, sold them, and delivered support. This insight, made possible by completing the previous efforts, demonstrates how to successfully introduce Service Design to a non-design oriented company with positive results.

## Design & Business at NCR

NCR is in the middle of a 10-year business transformation, having implemented traditional design processes across the organization. Having leveraged traditional quality initiatives (such as Six Sigma and Kaizen) with mixed results, NCR has been looking for a more collaborative innovation methodology to address a rapidly changing marketplace. NCR needed to reinvent the way it delighted and advised their retail B2B customers. To do so required thinking beyond the technology and focusing on the overall consumer experience, the excitement of

shopping, and the promise of brand. This required a re-thinking of how to innovate, sell, and deliver.

## The Design Culture at NCR

NCR has a strong legacy of innovation, from the development of the first generation of mechanical cash registers in 1884, to process innovations related to the sales process during the early days of the company. NCR has over 1,700 patents and maintained market leadership across multiple directional pivots in its history. But this legacy lent minimal insight as to how it can guide its retail customers safely through this seismic consumer behavioral shift

NCR was aware that leading companies elevated service design to a strategic position (Fjuk, 2016), and even defined customer experience leadership as a core corporate goal. For example, NCR has been applying user experience design and design thinking principles in product development for several years. But this happened outside of the purview of the sales organization, or any other non-product functions within NCR.

The Georgia Tech partnership raised awareness to the possibility of Service Design providing a competitive edge in the sales process by applying the co-creation concepts to customer collaboration. How that would play into the sales organization was less clear, yet the school was able to help NCR navigate this change as a result of its curriculum transformation.

## Curriculum Innovation at Georgia Tech

Located in the heart of the campus of one of the world-leading technology schools, Georgia Tech's industrial design program has undergone a fundamental transformation over the last few years. Like many other academic disciplines, industrial design had been locked into an historical model that evolved in response to the industrial revolution. The Bauhaus model had served the School well, however, it was apparent that new technological innovations, had disrupted all facets of the traditional approach to the design process that business and industry relied on. At the same time, it became apparent that the development of new products, systems and service now required a unique combination of research, design skills and prototyping methods not commonly associated with any of the more traditional technical disciplines (Buxton 2007, Moggeridge, 2007, Kolko, 2010). In response, the School of Industrial Design undertook a major revision of the entire curriculum to leverage traditional strengths and integrate a robust hands-on understanding of electronics, sensors and communications technologies, while maintaining a clear focus on the core values of user-centered design.

### Design as a Strategic Tool

The goal of the program revision was to develop a more fundamental strategic role for design in business and industry to help cultivate a better understanding of the need to engage stakeholders not historically considered part of the design process, seek out new collaborators and at the same time assist business and industry understand the need to influence and revitalize organizational culture to more effectively address the changing marketplace (Yee, Jefferies & Tan, 2014, Budd & Wang, 2017).

This approach to leverage design in a strategic role within the organizational culture of business and industry has proven to be one of the more valuable outcomes of the collaboration for NCR.

## Learning Through Collaboration

The opportunity to collaborate with NCR provided an ideal platform to demonstrate the benefits of Georgia Tech's revised approach. A core tenant of any Service Design engagement is the integration and navigation of multiple stakeholders (Mager, 2004) for joint value creation (Yang, 2016). Since the first Service Design class taught in 2012, the School has taken the approach to teach Service Design in the context of Organizational Activation – not only looking at the frontline actors, but always pointing the students to higher level systems thinking in both: the analysis of current customer experiences and the creation of new experiences.

Service Design is a highly participatory design process (Stickdorn, 2012), and is best taught with industry partners. NCR proved to be a valuable partner as they quickly enabled access to an extended stakeholder set. The company demonstrated a willingness to take a calculated risk by enabling communications with NCR's own customers – giving the students better real-world information to base their suggested service design solutions on.

### Teaching Goals and Objectives

The faculty worked with the team from NCR to structure a series of projects to deliver on a learning experience that embodies core principles of Service Design.

- Sequenced: Students map existing journeys, find pain and gain points, and then suggest new and improved journeys.
- Multi-Stakeholder: Navigating and mapping stakeholder relationships reveals powerful leverage points and help with the root cause analysis of current pain points.
- Iterative collaboration: Students drive iterations through frequent interaction with the industry partner and connected stakeholders.

#### Personas

The personas the study focused on include both customers - Millennials and Generation X'ers - and store employees - Floor employees and Store Managers.



Millennials



Generation X'ers



Floor Employee



Store Manager

#### Venues

The venues compared in the study include Grocery Stores, Mass Merchandisers (Hypermart), and Online Stores.



Grocery



Hypermart



Online

### Understanding the Stakeholders

These three core principles were further amplified by developing a highly participatory collaborative relationship with NCR, evidenced by frequent and regular co-creation sessions.

The projects were created to incorporate the development of several core soft skills.

- Empathy: Students not only create personas and empathy maps to further their own understanding of the end users, they use these empathy tools when communicating with the industry partner.
- People skills: The collaboration with several stakeholders including NCR and their customers, requires rapid people skill development on the student side, carefully balancing 'gives' and 'gets'.
- Facilitation: Breakthrough service innovation happens in carefully crafted workshop formats, requiring the student to become a skilful facilitator of group processes.

### The Framework for the Student Project

Through the definition of an open-ended project, the Sales Engineering Group at NCR provided students with the latitude for exploration and innovation while providing NCR

with the insight and exposure to the potential of integrating Service Design methodology into their sales and business operations.

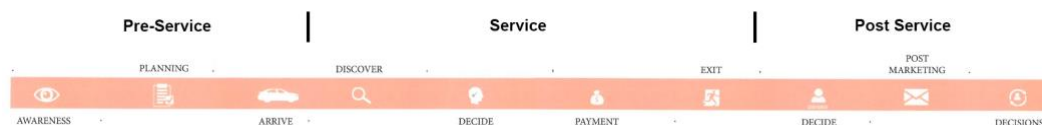
The goal was to study changing consumer habits and design the ‘store of the future’ to provide the most enjoyable shopping experience to consumers of all ages. Student teams were given the flexibility to choose a grocery store (i.e. Publix or Kroger in the US or mass merchandisers (i.e. Target or Costco in the US). They were also provided with a list of suggestions to consider:

- Address shoppers your age, as well as shoppers your grandparent’s age
- Provide a seamless shopping experience that incorporates mobile, web, and physical environments
- Consider security in your design so the retailer can address theft and fraud
- Feel free to completely redesign the physical layout of your store
- How people pay for things is critical in your thinking. How do you deal with cash vs credit card vs PayPal vs Apple/Android wallet?
- How can a store recommend one product over another, or provide coupons or incentives to buy something unobtrusively?
- What different ways can purchased items get from the store to the consumer’s house? Delivery? Drive through pickup? Uber?
- How can retailers have less people working in the front of the store? Cashiers, managers, customer service, returns, etc? With rising labor costs, how can consumers use automation and mobility without enabling additional theft and fraud to the store?

## Data Collection, Analysis, and Synthesis

The research phase of the project leveraged design research methods to identify the key criteria affecting consumer retail. NCR identified two primary shopping venues - major grocery chains and mass merchandisers. The student strategy was to benchmark the customer shopping experience in each of these shopping venues versus online shopping with a goal to identify Design Opportunities. The entire class (17 students) worked collaboratively on data collection, field observation, analysis and identification of design opportunities.

The students first conjectured an initial concept for a Customer Journey based on their perception of their own past shopping experience. They then generated and circulated a survey and spent time in the field for observations to identify and validate actual shopping habits of a range of shoppers representing different identifiable demographics.



## Key Points in the Customer Journey

By benchmarking online shopping versus shopping in more traditional physical retail venues, the students were quickly able to recognize how online retailers had much more effectively leveraged ‘Pre-Service’ – through online promotion and targeted advertising as well as ‘Post-Service’ – through testimonials and direct email follow-up.

Once the students had verified shopping habits of the different personas and updated their Customer Journey Map, they leveraged one of the key Service Design techniques to identify Touchpoints and Painpoints. As previously noted, a Touchpoint is any point of contact between the customer and a service provider while a Painpoints is any point of confusion, frustration or friction between the customer and the service provider. By correlating the Touchpoints and Painpoints against the Customer Journey Map and comparing Journey Maps for different personas, the students were able to clearly visualize the most problematic



issues for a range of different customers. A similar process was used to develop a Journey Map for employees of the retailers.



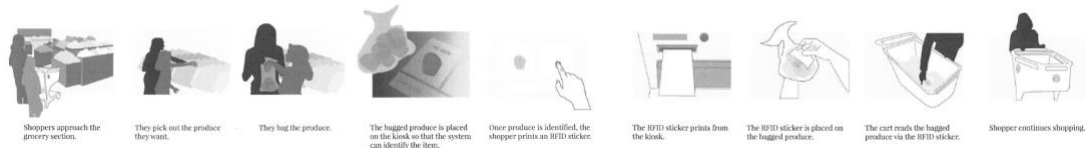
### Tracking the Customer Experience

The students then analysed the results of their findings to identify an extensive range of Design Opportunities at key points in the Customer Journey to serve as the basis for further exploration during the second phase of the project when they subdivided into teams that would focus on a specific individual target venue.

### Ideation & Concept Development

For the second phase of the project the students self-selected into five teams, each focused on developing comprehensive concepts for innovative customer experiences for either a large food retailer or a mass merchandiser. Key priorities for the students were to explore the opportunities to integrate application of new technologies to enhance the customer shopping experience and at the same time improve operational logistics for both employees and store managers in the retail chains.

#### How it Works: Produce Section



### Storytelling Brings a New Concept to Life

Storytelling in the early stages is important to support communication and clarity of ideas. Each student team developed a series of storyboards as a preliminary step in evaluating a range of ideas for the application and integration of potential new technologies as well as new concepts for innovations in service delivery.



### A New Scenario for Mass Merchandising

Concepts for the Mass Merchandisers focused on the integration of digital technologies. By providing customers with a dedicated 'retail app' and the choice to 'opt-in' to rewards programs and location tracking, retailers have new opportunities to engage their customers, provide an advanced level of personal service, while at the same time opening the door to gather data and monitor shopping behaviour.



### An Innovative Approach to Food Marketing

Surveys and interviews with customers in the food store chains suggested there was an opportunity to develop a more proactive approach to marketing new food products by

providing hands-on demonstrations. In response one student team came up with an innovative concept to engage customers in cooking demonstrations in the store – allowing them to buy pre-configured recipes and/or cook their own meal in the store to take home for dinner.

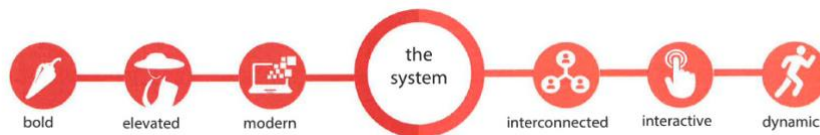


### Integrating Virtual Display Technology

One of the key observations from the research focused on the role of the cell phone and near ubiquitous use of social media. Often people shop for clothing with others and/or use their personal media to share images of items with their ‘trusted friends’ for recommendations. Concepts for new display technology allow customers to quickly scan the available stock, view any garment on a virtual model, then ‘grab’ a copy on their phone to add to their ‘wish list’ or send to a friend for reference.

### Building Brand with Service Design Strategy

In order to optimize both customer engagement and organization activation it is essential to establish a clear and consistent brand strategy. Effective brand recognition helps to support and foster both customer and employee loyalty.



### Brand Continuity is Essential

Each student team was careful to consider the selection and implementation of new marketing and display concepts as well as the integration of new technologies to ensure all proposals for change would support a consistent and well integrated brand strategy across multiple media platforms.

## Academic Benefit: Better Integration of Design and Business

The partnership with NCR proved especially fruitful. The involvement of a ‘real world’ partner underscored the value of the studio project for the entire class. The opportunity to establish an ongoing rapport throughout the project with a team of business experts willing to provide clear and concise feedback – both positive and negative was a new eye-opening experience.

The class, made up of juniors, had a semester to learn the history, architecture, and challenges with retail, and propose innovative solutions that addressed the pinch points they discovered during their research. The speed at which they did their work, the clarity and accuracy in which they quickly learned to analyze an entire retail scenario, and the excitement they generated in such a short time was highly rewarding for the NCR stakeholders involved.

The students developed several universally useful models and ideas of the consumer experience that will inform future projects in this partnership. The following are conclusive results from the class' work:

- Designed a universal consumer experience diagram that compares online to



brick and mortar grocery and mass merchandiser, along with painpoints and consumer desires.

- For brick and mortar retailers, demonstrated that table stakes are to enhance the current shopping experience with Amazon-like interactions: read or leave customer reviews for products while in store or online, leverage a secure digital "wallet" that allows easy payment from anywhere, and convenient methods for returning items anytime without interacting with live people.
- The future is about bringing the community into the built space. Examples: a town hall like feel where people meet to eat, drink and talk while shopping; providing useful health and well-being lessons, like how to cook meals which you can then bring home and feed your family; and a place to learn useful life skills related to the store's merchandise or services.

## Corporate Benefit: Service Design and B2B Customer Centricity

The class and instructors helped NCR recognize how the application of Service Design could help them modernize their sales strategy and sales enablement. Each of the student teams underscored the importance to engage a diversity of stakeholders including both customers and employees, to help management more fully understand the needs and concerns of customers while shopping, and the ability of the store employees to assist the customers and support their needs, as part of a holistic social dynamic (Snelders, 2014).

The collaboration with the school has been one of the major drivers for the recently expressed focus on Service Design at NCR on *both* sides – business development *and* product innovation. The positive uptake demonstrates the hunger and willingness for older technology companies like NCR to consider new customer-experience focused methods to rethink innovation and go to market more quickly.

The Retail Sales Team initiated a new sales strategy of design and Service Design based on the student's recommendations that enabled a more dynamic, collaborative approach to guiding their customers. For example, it is not sufficient to simply install a stand-alone self-service checkout kiosk and expect that all customers will appreciate or fully understand the operation of the device with no human-mediated support (Darzentas & Darzentas, 2014). Recognizing the strategic importance of this work has helped create a company-wide initiative to leverage Service Design at scale.

There are four key areas where NCR now is incorporating the methods and principles of Service Design:

1. Customer Co-Creation and Sales: Collaborating on journeys and stories, NCR is able to shift the focus from technology to experiences. The journeys help highlight different end users of NCR solutions: consumers, operational actors, management actors.
2. Internal change management: through stakeholder maps, personas, co-creation workshops, internal journey mapping and blueprinting, Service Design helps expedite internal change management initiatives.
3. Solution Innovation: Industry-specific journeys streamline the efforts of NCR's Industry Solutions Group (ISG)
4. Product Innovation: In the Customer Experience Design (CXD) group to streamline new software product development: Personas, Journeys, Blueprints serve as inputs for the traditional agile software development process

## A New Role for Service Design: Advancing B2B Partnerships through B2C Innovation

NCR stakeholders witnessed the power of co-creation first-hand with Georgia Tech. After gathering positive feedback from customers and sales teams, NCR recognized the power of approaching B2B relationships through a Service Design lens. By focusing on the Business to Customer (B2C) experience for NCR customers using Service Design, NCR has been able to create a competitive advantage for itself: richer collaboration, more credible innovation guidance, and a refreshing change in how to partner.

## Transforming an Organization Through Service Design Thinking

By deploying the practice of Service Design in multiple areas of the organization, NCR is positioning itself to be *the* innovation leader in the field of unified commerce. Speaking a common internal language of experiences and journeys facilitates better collaboration, quicker time to market, and deeper customer engagement which ultimately drives more business for NCR.

Leveraging ongoing efforts to deploy Design Thinking methods, Service Design at NCR adds a systems layer to the conversation. This shift enables a more integrative approach to Innovation (the creation of new platforms and disruptive customer experiences) and innovation (the creation of transformative consumer experiences based on current platforms).

Early feedback indicates that NCR's customers and partners appreciate the change as well. For example, selling was traditionally a one-way conversation: death by PowerPoint. By incorporating lower case "innovation", NCR is investing in tools and training to evolve the sales process to one of collaboration and transformation of the consumer experience. This helps NCR move into the role of advisor and partner.

## A Virtuous Cycle: Service Design Awareness

Through sharing project results widely, awareness is spreading. Internal Service Design ambassadors help coach and educate stakeholders. This in return is building interest in partnering on future Service Design projects.

The creation of NCR's "Industry Solutions Group" in 2016 was a first step towards heightened customer centricity throughout the organization. Through the partnership with Georgia Tech, company leaders now have recognized the need for service design throughout the organization, and the company is growing cross-functional capabilities, from sales to operations. A major transformation is underway to change the way NCR is approaching internal innovation processes and customer collaboration. NCR has recognized how service design can act as a translation layer (Vollmer, 2014), and how it increases the internal awareness of the end-to-end customer experience (Fjuk, 2016).

NCR recognized the strategic value with investing in Service Design by creating 5 new positions (2 full time, 3 interns) in the sales engineering group in 2017. This includes hiring a Georgia Tech faculty member to lead this initiative. The objectives for the team:

- Designing a new technical selling methodology to complement existing sales methods
- Conduct studies to determine applicable journeys and personas to drive sales focus
- Design a set of tools, templates, and training to facilitate a collaborative approach to sharing journeys with customers
- Partner with the marketing, solution management, and engineering functions to incorporate a Service Design approach to bringing new journeys to market

## Conclusions and Future Work

In the US, Service Design is enjoying a rapid growth in industry recognition, and Service Designers are in growing demand (Service Design Network, 2017). Georgia Tech's students are uniquely positioned with Service Design now fully integrated into the overall curriculum. Similarly, this project helped foster the adoption of Service Design methods as a valuable set of strategic design tools at NCR .

- Through the unique and frequent collaboration sessions with multiple stakeholders, students got a real-world service design experience, and were able to develop their soft skills at an amplified level. This hands-on approach is integral to any comprehensive service design education.
- The same collaboration sessions that enabled the students to develop their soft skills enabled hands-on Service Design immersion for NCR stakeholders, thus greatly expediting the corporate understanding of the power of Service Design. This approach has had a direct and dramatic impact on the speed of adoption within the NCR organization and its interactions with customers.
- By structuring the partnership as a multi-semester series of projects with defined handover points of information, students got to witness how their work lives on and matures over time.
- As will be investigated in a subsequent work, the Service Design team at NCR has identified the need for a new role, Solution Experience Manager. The catalyst for this insight was the discovery of competing and conflicting initiatives within the company that degraded the overall experience customers had when buying products and services from NCR.

## Closing Thoughts

Students gained rich insights of the ups and downs of a consultative B2B relationship through their project with NCR and NCR's customers. The students learned the retail industry quickly as part of their research, and were able to quickly garner trust with the retailers they worked with. They created concepts which were ripe for future investigation in this ongoing partnership, and would yield keen insights that ultimately help guide retailers as they determine how best to compete against the purely online world.

NCR and their retail customers who participated with the classes were energized by the experience. With Service Design as the catalyst, participants enjoyed the fresh design assessment to their businesses, and were prepared to incorporate the results from the students into their business plans. The company realized that the student projects surprisingly encouraged internal organizational change and the benefits to embedding Service Design into the core of the customer collaboration and innovation processes.

Based on the success of this project, NCR and the School of Industrial have agreed to structure the partnership as a multi-semester series of projects with defined handover points of information, to help make it possible for students to witness how their work lives on and matures over time. Each semester's results will inform the next semester's research such that a growing body of work continues to grow and mature.

Future opportunities for exploration include:

- Leveraging Service Design into the selling process
- The use of Service Design for cross-functional organizational design
- Leveraging academic design/industry partnerships for organizational design
- Extending the industrial design process in tech companies to influence go-to-market approaches with Service Design

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# A designerly-way of conducting qualitative research in design studies

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## Abstract

Design studies focuses on explaining the human activity of design, and is fundamental to design research. It frequently involves the use of qualitative research approaches such as case study, with the collection of a considerable amount of heterogeneous data (e.g. observations, interviews, documents, artifacts). Multiple sources and heterogeneous data can be hard to analyse. Within social sciences, qualitative analysis is undertaken through the process of coding (e.g. grounded theory) which can be supported by computer-assisted software such as Nvivo. However, this type of analysis works better for textual data and is not so effective to analyze more heterogeneous and visual data sets. Moreover, the process of open, selective and axial coding in traditional qualitative research do not have a good fit with the more visual, iterative, and participatory approaches of service design researchers. To address these challenges this article presents a case study research, where a more visual and participatory designerly approach was used to conduct qualitative research in design studies. The results show that the approach enabled a richer data triangulation and analysis; and also triggered more multidisciplinary discussions, enriching study's results.

**KEYWORDS:** design research, design studies, qualitative research, service design, case study

## Introduction

Design research is concerned with studying and understanding the phenomena of design (Buchanan, 2001), or with advancing knowledge useful for those who design (Manzini, 2008). Design research can include the study of the application of processes and tools in design practice (Fallman, 2008), as well as the development of new artifacts (Zimmerman, Forlizzi, & Evenson, 2007; John Zimmerman & Forlizzi, 2008). There are multiple models

of design research which pivot between subjective, constructivist or positivist epistemological perspectives (Melles & Feast, 2010), and evidences of a maturing field are emerging (Forlizzi, Zimmerman, Forlizzi, Stolterman, & Zimmerman, 2009).

Design studies is fundamental activity to design research as it aims to describe and understand design practice (Fallman, 2008). Design studies usually makes use of more traditional qualitative research approaches and methods (e.g. grounded theory) to study design. Some authors argue that design research should be closer to social sciences to enhance its rigor and validity (Collins, Joseph, & Bielaczyc, 2004; Friedman, 2003). The discussion is especially focused on the connection between problem framing, data collection and analysis, and theory construction (Forlizzi et al., 2009; Friedman, 2003), which are key research stages (Manzini, 2008). However, others explain that design research should develop tools which can better reflect the nature design: complex and messy (Stolterman, 2008). Moreover, there are still important gaps between the demands of doing design and the way theory is conceptualized (Dalsgaard, 2017; Rogers, 2004; Stolterman, 2008).

Within qualitative approaches, the research process has been well developed, from selection of cases and context of research, to data collection, analysis and theory building (Charmaz, 2014; Strauss & Corbin, 2015). Multiple computer-based softwares, currently broadly used in qualitative research, have also been developed to support data analysis with multiple evidences (e.g. Nvivo, Atlas.ti). However, these computer-assisted programs frame to some extent how the data is analysed (Hutchisona, Johnstonb, & Breckona, 2010). They seem to function better for textual data, but limit the potential for more visual and interactive learning process with multiple researchers.

Service design is a highly visual (Segelström, 2010) and participatory (Björgvinsson, Ehn, & Hillgren, 2010; Sangiorgi, Patrício, & Fisk, 2017) approach which aims to design new service solutions. Practitioners use visualizations to deal with complex design situations; organize, share, discuss and make sense of the data they collect to generate insights (Dalsgaard, 2014, 2017; Segelström, 2009; Segelström & Holmlid, 2009). Similarly, design researchers could better emphasize this way to thinking and doing into design research in order to enrich the research process and research results (Cross, 1999, 2001; Dalsgaard, 2014).

Based on the challenges presented above the present study explores how a more visual and participatory designerly approach can be used to conduct qualitative research analysis within design studies. The study offers a rich qualitative account of a design project which included 10 design teams developing new solutions with companies. The designerly approach illustrates how service design elements were infused in data collection, data analysis and report of the phenomena. The paper offers an important contribution to design research, when it comes to study and represent design practices (Fallman, 2008).

## Design Research

Design research is concerned with studying and understanding the phenomena of design (Buchanan, 2001). The characteristics and theories that originate from design research approaches are still a topic that is not clear amongst design researchers, although there is evidence of a maturing field (Forlizzi et al., 2009). Different classifications exist within design research e.g. *design practice*, *design exploration* and *design studies* (Fallman, 2008); *research on design*, *research for design* and *research through design* (Forlizzi et al., 2009). These classification and schemes adopt different research processes to contribute to the field of design. While design research continues to mature (Forlizzi et al., 2009), the community still faces important challenges, especially when it comes to explicitly address the connection between problem framing, data collection and analysis, and theory construction (Forlizzi et al., 2009; Friedman, 2003; Melles & Feast, 2010). It is often argued that design research could be enhanced if combined with other social science methods and approaches to enhance its

rigor (Collins et al., 2004; Friedman, 2003). However, it is also emphasized that design research does not have to turn into an imitation of science (Cross, 1999), and new analytical method should better reflect its messy and complex nature (Stolterman, 2008).

#### *Design Studies or research about/on design*

Contrary to the other types of design research, *design studies* or research *about/on* design requires more analytical work, as the aim is to describe and understand design (Fallman, 2008), rather than creating change and/or understanding a phenomena through means of design intervention or building new artifacts (Koshinen & Krogh, 2015; Zimmerman & Forlizzi, 2008). Design studies research process usually includes the use of more traditional social science methods (e.g. interviews, observations, ethnographic-like research components) to study design processes, methods, tools that practitioners use to perform their activities (Fallman, 2008). According to Friedman (2003), Collins et al. (2004) and Dorst (2008), design research should be combined with other types of research methods, to enhance rigor and validity (Collins et al., 2004; Dorst, 2008; Friedman, 2003); and more studies within service research are increasingly combining multiple perspectives to enhance the robustness of research results e.g. (Costa et al., 2017a; Costa et al., 2017b). Stolterman (2008) and Rogers (2004) however, highlight the need to build a more in-depth understanding of designerly-ways of thinking and operating of practitioners (Stolterman, 2008), building analytical methods which may better reflect design practice (Rogers, 2004).

#### *Qualitative research*

Similarly to design studies, qualitative research is composed by an iterative process of case selection, data collection, data analysis and theory building (Charmaz, 2014; Strauss & Corbin, 2015). Gathering multiple sources of evidence (e.g. text, pictures, videos, presentations) can be a crucial part of qualitative research, which enhance internal validity (Yin, 2014). Within qualitative research, computer software (e.g. Nvivo, Atlas) is used to support data analysis. Data may include multiple types of evidence (e.g. text information, interview transcripts, audio or pictures) which are saved in the same platform. The information collected is analysed iteratively using guidelines from different qualitative research methods (e.g. grounded theory, narrative analysis). The information in the software can be classified in nodes; and memos can also be developed as the researcher reads through the different evidences, and generates theory (Strauss & Corbin, 2015). The computer's capacity can support researchers to record, sort, match and link data. However, these computer-assisted programs frame to some extent how the data is analysed (Hutchisona et al., 2010) as they limit the potential for more visual and interactive learning process with multiple researchers.

It can be difficult for design researchers to understand and analyse qualitative data with computer-aided assistive programs, which are becoming more popular in qualitative research. Design researchers should be able to rely on visualizations to gather, organize, share and discuss, and make sense of data they collect. However, these activities are lacking not very much explored within computer-assisted coding software, which can restrict the richness of results. A more encompassing and visual-based approach is then needed to enrich design research.

## Service design visual and participatory approach

Service design can be interpreted as a design discipline (Kimbell, 2011), which has evolved from designing service-as-different-from-products, to a more encompassing perspective, focused on value co-creation (Patrício, Gustafsson, & Fisk, 2017; Wetter-Edman, Sangiorgi, Holmlid, Grönroos, & Mattelmäki, 2014). The visual and participatory elements (Holmlid & Evenson, 2007; Segelström & Holmlid, 2009) are core characteristics of the approach, and support the design of new services for value co-creation (Sangiorgi et al., 2017; Segelström, 2010; Segelström & Holmlid, 2009)

Visualizations (Segelström & Holmlid, 2009) and/or instruments (Dalsgaard, 2017) are used throughout the design process to support practitioners interpreting user research and communicating insights in early stages of design projects (Yu & Sangiorgi, 2017). Visualizations and instruments can be models, sketches, full-prototypes etc., which are developed and refined over the course of time and facilitate the sharing of knowledge between members of cross-functional teams (Bertoni, Panarotto, & Larsson, 2016). Segelström & Holmlid explored how service designers make sense and communicate user data through visualizations (Segelström & Holmlid, 2009). Visser et al (2005) referred to the use of visualizations in service design as mechanisms that drive knowledge transfer (e.g. personas for quick immersions, storyboards for inspiration) (Visser, Stappers, van der Lugt, & Sanders, 2005). Other methods and tools have been developed to represent new services e.g. service blueprints (Shostack, 1984), Customer Experience Modelling (Teixeira et al., 2012), Multilevel Service Design (Patrício, Fisk, e Cunha, & Constantine, 2011), and more recently other methods emerged to capture the service experience from multiple perspectives of stakeholders involved (Patrício, Pinho, Teixeira, & Fisk, 2018).

Visual representations are paramount in service design practice (Blomkvist & Segelström, 2014; Dalsgaard, 2017; Diana, Pacenti, & Tassi, 2009; Segelström & Holmlid, 2009). They are used to interpret and communicate data, substantiating design projects but this more visual and participatory components are still not explored within design studies. Moreover, a more meaningful and designerly like approach in design research could further support practitioners in reflecting upon their own practice which is becoming increasingly complex (Norman, 2010; Norman, 2010a).

#### *Research gap*

Design studies is an important area of activity of design research (Forlizzi et al., 2009), which focuses on studying the human activity of design and producing theory that describes the process of design (Fallman, 2008). Design studies can involve the use of qualitative research methods from social sciences (e.g. grounded theory, Charmaz, 2014) to undertake data collection and data analysis (Fallman, 2008). However, as the amount of complexity and heterogeneous sets of data are being collected within design studies, traditional social science qualitative methods may be limitative for design researchers.

The visual and participatory approaches are key in service design practice (Dalsgaard, 2017; Patrício et al., 2018; Segelström & Holmlid, 2009; Yu & Sangiorgi, 2017). However these components have not been explored so far in qualitative data analysis in design studies. Visual and participatory elements can improve both the analysis of increasingly complex sets of data, and could also help design researchers better deal with data analysis in design research (Bringer, Johnston, & Brachenridge, 2004; Suddaby & Suddaby, 2006). At the same time, infusing more visual and participatory elements within design studies can help design researchers describing and evolving service design practices, bringing design research closer to the demands of doing design (Stolterman, 2008).

Based on these challenges, this paper explores how a more designerly approach can better support design researchers to undertake qualitative research within design studies. The study is based on a research project which involved 10 different design teams collaborating with companies to create new solutions. The following section explains the methodology adopted namely the case selection, data collection and data analysis process.

## Methodology

To better support design researchers to conduct qualitative analysis in design studies, the study follows case study research (Yin, 2014). A research project, involving the study of design practices of 10 design teams was selected. Five teams developed new solutions using



product design approach, whereas the five others developed solutions using service design approach. The main objectives of the research project were to empirically compare product design and service design approaches and explore how these approaches could be enhanced with product-service system design components (Costa et al., 2017; Costa et al., 2017).

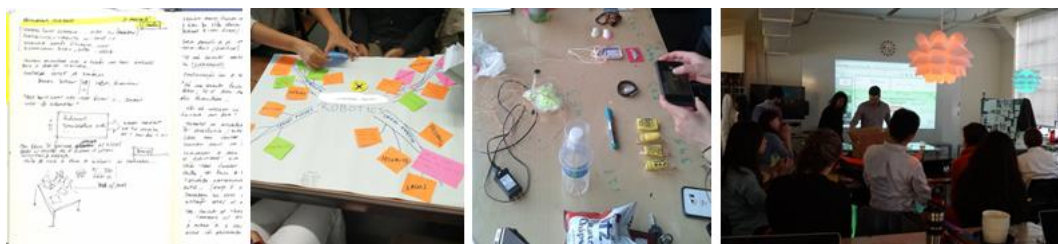
The materials presented in the remainder of this article focus on the methodology followed to conduct the designerly qualitative research. The results and conclusions of the research case are analysed elsewhere (Costa, Patrício, Morelli, & Magee, 2017; Costa, Patrício, Morelli, & Cressy, 2017).

### Case selection

The research project selected was adequate as it aimed to build new theory about design (i.e. design studies) focusing on exploring of how designers work, think, carry out their activities in two distinct design environments. The research project included the collection data through multiple research methods to build an in-depth, contextual understanding of product design and service design practices, including case study (Yin, 2014), grounded theory (Charmaz, 2014) and tenets of ethnographic research (Murchison, 2010). The complexity and richness of the dataset collected and objectives of the study, made the research project a rich ground to explore how the application of more designerly approaches to qualitative research could enhance the richness of research results in design studies.

### Data Collection

The research case involved the collection of multiple sources of heterogeneous data. Gathering multiple types and sources of evidence - text, pictures, videos, presentations etc. - is a crucial part of qualitative research which enhances validity (Yin, 2014). Multiple qualitative research techniques to collect information, namely, extensive field study, observations with field notes, video recording and photographic diary to improve the reliability of the study (Voss et al., 2002). The field study was undertaken during a total of 8 months (4 months in each design context) following guidelines of ethnographic research (Murchison, 2010). Participant observation enabled the researcher to gain a deeper understanding of the design activities undertaken by the different teams. The field notes captured the current status of the projects, behaviours of participants, working environment and design activities undertaken. Field notes included rich information including thick description of the situation observed, as well as sketches representing certain moments. Additionally, eleven in-depth interviews were undertaken after the design projects ended, typically lasting between 20 to 45 minutes each. In total, a verbatim transcript of 70 pages, two diaries with field notes, physical artefacts, design review presentations and official reports were the basis of the analysis (Figure 1).

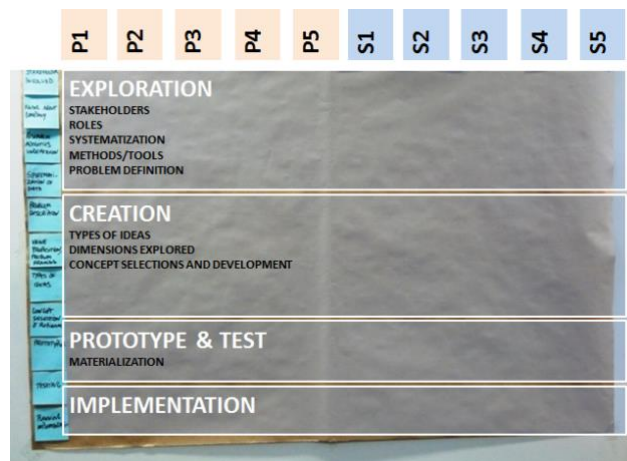


**Figure 1 - Extensive field notes with annotations and sketches of specific situation occurring in context; presentations, physical artefacts and models**

## Data analysis

The amount of heterogeneous data (e.g. pictures, texts, narratives) presented high level of messiness and complexity which required some arrangement. To support the development of the data collection and analysis, the researcher started structuring the data by developing a full-description of the 10 design projects (Yin, 2014).

First, the data was organized by design projects and design thinking stages (Brown, 2008). The different design thinking stages (exploration, creation, test and prototype and implementation) (Johansson-Skoldberg, Woodilla, & Cetinkaya, 2013), were common between product design and service design approaches, hence they were used as an initial frame. The upper line *Px* represented design projects using product design approaches; and *Sx* represented design projects using the service design approach (Figure 2).



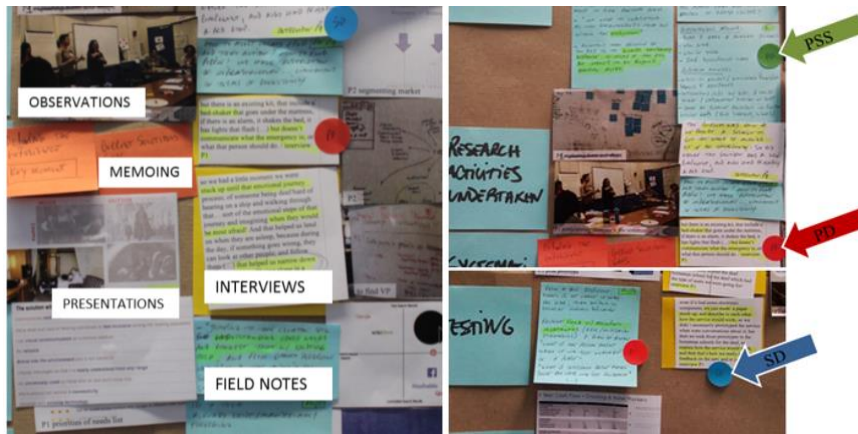
**Figure 2 - canvas structured by case and design thinking stages**

The development of a visual representation of the data, with different sources and types of evidence, enabled the researcher to understand which kind of data was being collected. It was useful to identify potential gaps in data collection, leading to further research (Figure 3). It also enabled the team to build preliminary insights based on the type of materials collected.



**Figure 3 – data collection through time**

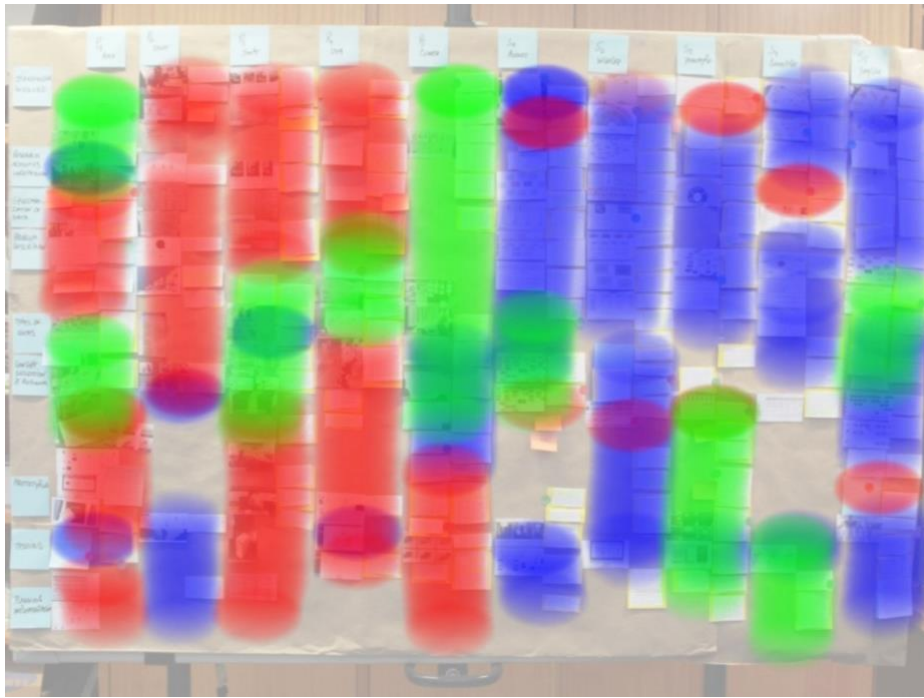
Data collection and data analysis were intertwined activities. The canvas evolved as more data was being collected, and brought new light into new data (Figure 3). The most representative evidences – pictures from fieldwork and workshops undertaken, physical models and/or prototypes, parts of interviews– were selected and continuously displayed in the canvas in a chronological manner (Miles & Huberman, 1994). Each evidence was colour coded to keep track of the type of source (e.g. interviews were in yellow, field notes in blue, pictures in white), and the parallel representation of the different evidences facilitated the analytic analysis of the phenomena under study (Figure 4).



**Figure 4 – colour codification of evidences (left); and colour codification of initial categories (service design, product design and PSS design) (right).**

The representation of information resulting from this process enabled the research team to make observations cross-cutting the cases. For example, Px-projects had a tendency to materialize their thoughts in physical models and prototypes since the beginning of the process, whereas Sx-projects tended to create more abstract models, representing connections between actors. Preliminary analyses were discussed with the research team iteratively as the data collection continued to occur. The qualitative and exploratory nature of the research determined the evolution of the data analysis through time (Charmaz, 2014). The researcher's initial theoretical framework also shaped how the data was analysed. Following qualitative research guidelines (Charmaz, 2014), the researcher returned to the research questions to develop relevant insights for design research.

Given that the objectives were to understand differences between product design and service design, and understand how they would change through the infusion of a third approach (Product-Service System, PSS design), the data within each case was categorized according to their affinity to product design, service design and PSS design characteristics which were previously studied (Figure 4 and Figure 5). This first layer of coding transformed the model into a full-colour coded map through which multiple insights were developed. For example, the characteristics of each approach were not exclusive; some product design characteristics were infused in Sx-projects and vice-versa. Moreover, PSS design approach was infused more at the initial stages of the design process in Px-projects, whereas it was more evidence in latter stages of the design process in Sx-projects.



**Figure 5 – visual result of colour coding by using the first layer of categories: product design, service design and PSS design**

Data triangulation of the different sources of data was undertaken visually, through different colour codes (Figure 4 and Figure 5). Each case individually and then, the cross-case analysis and synthesis was undertaken. The data was analysed per design stage across the 10 cases, outlining differences and similarities between the Px and Sx design teams. The composition and analysis of the data was iterated with key informants to improve the validity of the construct (Yin, 2003).

The model supports more systematic report of the design process, and more visual, iterative and engaging analysis of data, with multiple sources of evidence. It also enabled a more dynamic codification of data, and triggered multiple discussions with the research team.

#### Results of data analysis

Visual representation of data with colour coding supported the presentation and discussion process with the research team, making it more intuitive. Participatory sessions with the research team (Figure 6) as well as the meetings with the informers were key to conduct the research and construct relevant design insights. The model supported the entire analytic process and was paramount to develop the research findings. For example, it helped researchers to realize why certain Px-teams adopted service design approach components at the initial stages rather than later stages of the design process. It also triggered more discussion regarding the categorization of certain evidences. By visually observing the changes of the canvas, the research team was able to learn more from the data, and enhance the richness of results.

The main researcher was able to obtain more feedback from the research team as the story of the model and the evidences in it, was being told. The model evolved in each session, as different questions were asked, and more feedback was collected from the team members. The model then represented the current-status of the research, and was the main instrument through which researchers engaged in discussions, looking at the data through different lenses and proposing different connections between the sources, developing and connecting categories in ways that would better explain the phenomena under study.





**Figure 6 – Participatory sessions with research team**

The research case demonstrates how adopting more designerly approach to conduct qualitative research in design studies enhanced the research process and results. This section explained how the approach supported a more systematic report of research findings, and more systematic, iterative and visual analysis of data, with multiple sources of evidences.

## Contributions

Design studies is an important area of activity of design research (Forlizzi et al., 2009) which can be enhanced (Rogers, 2004; Stolterman, 2008). A research case adopted a more designerly approach to design studies, which contributed to enrich the qualitative research process and research results. In particular, at the data collection stage, the designerly approach was used to materialize and visualize multiple types of evidence (e.g. text, images), enabling a more intuitive triangulation; and detecting missing information. At the data analysis stage the approach helped researchers triggering more collaborative and multidisciplinary discussions and enrich the results.

### *Relevance for design research*

The designerly approach presented in this paper contributes to design research by developing a more visual and participatory analytical approach to design research, enabling a richer and more designerly description of design practice. The designerly approach answers to the call of Stolterman (2008) and Rogers (2004), regarding the need to develop new analytical tools which are closer to design lose the gap between the design practice (e.g. deal with complexity and messiness) and the way theory is conceptualized (Stolterman, 2008). The designerly approach enables more visual and intuitive data representation, enabling design researchers to identify missing information, look at data in a more visual and designerly perspective, and enabling a more intuitive triangulation of evidences. This approach also enables teams of researchers with different backgrounds to better communicate their ideas, questioning the data.

### *Relevance for design practice*

Although the designerly approach was developed to support the qualitative research process in design studies, it can be also useful for design practitioners. The approach provides a new instrument that can bridge the gap between researchers and practitioners (Rogers, 2004), when it comes to reflect upon service design practice, evolve the approach, enhancing its rigor and richness within complexity (Norman, 2010). A more designerly approach to design studies can better connect design researchers with practitioners, bringing them closer to the qualitative research process in design studies, and facilitating a more in-depth and collaborative discussion about meaningful contributions to service design practice.

## Conclusions and future research

The present article aimed to explore how to conduct qualitative research in a designerly way, in design studies. It develops a more visual and participatory designerly approach to analyse a research project with 10 design teams, and explores how it enriched the design research process. The approach enabled a more intuitive data triangulation, triggered more collaborative and multidisciplinary discussions, and enriched research results.

The research also has some limitations since the analysis is based on one research project. For future research, it would be important to understand how other design researchers conduct qualitative research, and explore how designerly approaches to design research could enrich the research process and research results. The current study could also evolve by developing a more systematic method to apply in the analysis of other research projects.

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# Making sense of data in a service design education

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## Abstract

Digital data has a considerable role in our everyday lives: we use publicly available data to find out about weather, traffic or pollution, we track ourselves and we release our private data to monitor our health and to get advices from our favourite apps, we relate on services that digest big amount of data to predict what will happen next.

In this era of “living services”, what kind of data literacy is needed to equip a service designer? Is there a need to rethink of service design tools so that data will be explicitly taken into account in the design process? Is there a need to update service design curricula to embrace these challenges? All of these questions will be discussed through a specific case: a workshop on data exploration held at the Service Systems Design Master at Aalborg University in Copenhagen to investigate the role of data literacy in a service design university program.

**KEYWORDS:** service design education, data literacy, service design tools

## Introduction

Although Service Design can no longer be considered an “emerging discipline”, Service Design educational programs are still not widespread and the different examples of these which can be found in Europe feature very specific identities. Various attempts have been made to map out the evolution of the discipline and analyse the multiple different definitions and dimensions of Service Design, distinguishing, for example, among the systemic and human experience approach (Nisula, 2012), or between an approach that tries to integrate practices and ideas from other fields and the one that works on the basic assumptions and methods in service design (Sangiorgi, 2009; Blomkvist, Holmlid & Segelström, 2010). In a

recent document by the University of Arts London<sup>1</sup> service design research in UK has been mapped out defining the different sectors, educational courses and modules in service design and emerging research themes within the discipline. The object of service design is also discussed as being at the core of the discipline (Blomkvist, Clatworthy, & Holmlid, 2016; Secomandi and Snelders, 2011), Lucy Kimbell highlights how the possible ways of conceptualizing the focus of design have specific implications for how we theorize about the field itself and how, we would like to argue, we teach it and prepare future service designers. In a series of two workshops, held at the Service Design Conference in Finland in 2012 and in Lancaster in 2014, the competences and skills of “tomorrow’s service designer” were discussed in order to attempt to define what an educational program should deliver for them. These competencies and skills ranged from conventional and contemporary design skills to business skills<sup>2</sup>. Among the contemporary design skills only one was related to technology “Technology - be able to create realistic concepts/design in real world”, meaning the ability to understand and act upon the digital and physical environment within the service landscape. Several disciplines are borrowed from in Service Design education to develop this specific skill: Product-Service Systems, Interaction Design, Human-Computer Interaction and even Software Engineering are just a few examples of courses that are provided to service design students in different curricula across Europe to tackle the technical feasibility and context of the designed service. The data dimension is very often relegated to the gathering of qualitative insights from user research through interviews, focus groups, shadowing, cultural probes, contextual inquiries, just to name a few of the techniques that allow the designer to better understand the context of use of a given artifact or service. However in the modern world, designers, and also service designers, need to be able to navigate into large digital datasets in their design process: we live in an era of “Living services” (Fjord, 2015) and designers need to update their skills and toolboxes in order to be able to manage this specific material that could inform the design process in addition to feeding the actual designed product/service. The aim of this paper is to investigate how designers should be equipped to make sense of data in their design process and what kind of data literacy should be supported by service design educational programs in their curricula. In following sections, data literacy will be defined, the role of data in a service design process will then be explored. Following this, a workshop on data will be adopted as a use case to discuss possible approaches to data literacy in a service design education.

## In an era of living services: the role of data and data literacy

Economic production and distribution processes have become interconnected at an unprecedented rate and have spread across complex networks (Castells, 1996) simultaneously operating in a multiplicity of geographic, social, and cultural markets and contexts (Julien, 2007). A variety of services build upon continuously flowing streams of data, which are gathered, interpreted and processed to provide an offering that is adapted and tailored to the (oftentimes presumed) needs and wants of customers.

On the one hand, this phenomenon touches upon sensitive and alarming areas such as how this massive amounts of data allows for the tracking individuals, groups and even objects at an unprecedented level of granularity (Ciuccarelli, Lupi & Simeone 2014), or how algorithms processing these huge quantities of data are increasingly regulating our lives (O’Neil, 2016). On the other hand, big (and, especially, open) data are seen as an instrument to better understand our lives and the inner dynamics of organizations and societies (Ratti and Claudel, 2016) and to build more inclusive services and government processes (Townsend, 2013).

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<sup>1</sup> <http://ualresearchonline.arts.ac.uk/7712/1/Mapping-and-Developing-SDR-in-the-UK.pdf>

<sup>2</sup> <https://tomorrowsservicedesigners.wordpress.com/>

While keeping a critical eye on these emerging issues, data can be considered a resource, which comes with a set of already configured practices, particularly if we refer to the technical procedures that allow any user to exploit it, but it is still lacking design practices that could enable social innovation through more participatory and bottom up approaches. These practices could empower a community of users not limited to public authorities, large corporations or data experts.

While analysing the reasons behind the current challenges faced by open data, Kalampokis and colleagues pointed out that “gaining access to raw data, placing it into a meaningful context, and extracting valuable information is extremely difficult” (Kalampokis, 2013, p. 99). Among the barriers and the myths of open data, Janssen and colleagues illustrate how “some data requires the use of statistical techniques, a deep understanding of the underlying data, and an understanding of the types of (causal) relationships. This is knowledge that is not available to everyone and might require considerable time and effort to achieve” (Janssen, 2012, p. 265).

Data literacy is then crucial to support new practices around data, providing the designers, and even the citizens, with the necessary means to understand and use data which would enable them to think critically about social and political issues and to identify problems and propose meaningful solutions. Data literacy has been defined in many different ways, according to the domains in which the data was used: engineering, information science, journalism, just to name a few, have different perspectives on the skills that are needed to manage data. The focus can vary from highly technical skills related to collecting and managing quantitative data in order to conduct scientific research into the mechanics of finding and managing data or the ability to consume for knowledge, produce coherently and think critically about data. We will use a definition that takes into account these diversities and that refers to data literacy as “the ability to collect, manage, evaluate, and apply data, in a critical manner” (Ridsdale, 2015). This definition fits particularly well the framework for data literacy instruction proposed by Calzada and Marzal (2013). The authors define five “data actions” that need specific competencies and skills to be accomplished.

These data actions can be briefly summarized as follows:

- Understanding data -- what is data? what is its role in society, how is data generated and by whom?
- Finding and/or obtaining data -- what are the data sources? how to evaluate and select them?
- Reading, interpreting and evaluating data -- what are the different formats in which data can be presented and represented? How to critically evaluate data?
- Managing data -- how to better prepare a data set to be ready for reuse? what is the function of metadata?
- Using data -- how to prepare data for the analysis phase? how to synthesize from data? how to represent data?

All these data actions can be performed at different levels with different outcomes. In a Service Design perspective this translation process is also important to understand “the value, structures and relationships of specific data sets” (Prendiville, 2017) and allow the designer to move one step further the statistical analysis and to adopt a user-centred approach to data.

## Making sense of data in a (service) design process

Foulounneau et al. (2014) claim that data can play different roles in a service design process:

1. the service can be based on data;
2. the service can use data as a resource;
3. the service is validated or enriched with data, but the data is not directly used or visible in the service.

In the first case, data is at the core of the service concept: the service can not work without a specific dataset that is frequently visualized through the service or used in combination with other ones in order to provide new meaning to data. The data research, in this case, begins at a very early stage of the design process when the designer is still ideating and exploring opportunities. In the second case, data is used to verify the feasibility of a service: the data intervention happens at an advanced stage of the design process, during what Foulounneau and colleagues define as the *maturation stage*. Finally, in the last one, data is used to validate the service in a late phase of the design process, to verify a business model or to check the validity of other datasets used in the service itself.

Towards operationalizing data literacy for the field of design and empowerment, D'Ignazio (2017) has laid down strategies on teaching “creative data literacy”, such as working with data that the learners can relate to. Any mainstream data expert tool (e.g., R) contains sample datasets for learning, but these are most often highly domain specific (e.g., a car catalogue from 1974 with details) or highly generic. For service design students to learn about data, a relevant dataset would need to relate to service specific characteristics, or to be relevant for a specific step in the design process. As an alternative approach, Hill et al. (2017) approach the teaching of data literacy for novices via their four-days long “democratizing data science” workshops, through getting them engaged with programming. In their approach, they teach programming as a foundational skill for working with data (and thus, programming is taught specifically for data operations), and then have the participants follow an actual data science workflow. Throughout the process, the participants learn how to use code to capture data from online resources, and to visualize data to provide answers.

The approaches proposed by D'Ignazio and Hill et al. are specific to empowering people without data skills. However, understanding what approaches would be appropriate for designers for acquiring data skills that can be applied to the design process is still in its infancy. The initial aim of our study was to focus on data used at the core of the service concept, investigating how a data exploration in the ideation phase can be facilitated with novice designers who have limited, or no, experience with data. In this phase, the designers are often exploring a problem space that they would like to complement with additional data capture and analysis. Most likely they will need to follow the five data actions mentioned in the previous paragraph using specific methods and tools in order to gather the insights that will be communicated or used in the design process. As our use case clearly shows, the students used the data exploration workshop to refine their research question, mainly gathering insights from behavioural or thick data.

## A use case: a workshop on open data for tourism

This workshop was conducted within the Distributed Systems course of the Service Systems Design Master at Aalborg University in Copenhagen. 26 students from the second semester of a Master in Service Design participated working in work groups of 4-5 people each. The workshop ran for three consecutive days and was intended as a hands-on learning activity to teach data skills and tools to students, who were invited to tinker with data while working on a specific design problem. The overall aim of the workshop was to see how design students could adopt a data-driven inquiry and build upon newly-acquired skills in data analysis to complement their research and design process. The workshop approach was based on problem-based learning; we wanted to minimize the frontal education as much as possible, and had the students figure out working with data on their own, supported by constant facilitator presence and assistance as needed. The workshop's learning goal was to prepare the students to use end-user data tools (tools that do not require programming), that can provide flexibility and can address reasonable complexity.

Prior to the workshop, the students attended one introductory lecture on theoretical and methodological approaches to working with data. The students already had an average level

familiarity with spreadsheets software (e.g., Excel, Sheets), and with typical visualization techniques (e.g., charts, graphs), these being basic technical literacy, but we also refreshed their tacit knowledge with two homework assignments one week before the workshop.

In the Service Systems Design Master's program, the students are invited to work on a problem-based learning approach and each semester they receive a brief for a design project that they would have to carry out in groups. The workshop was an occasion for the students to keep working on this semester-long project by looking at it through the angle of data analysis and visualization. The theme of the semester-long project was tourism in a Nordic capital.

Throughout the workshop, the students worked towards generating tangible outcomes (like gained insights and concepts), which were then captured and shared during mid-term and final presentations to show progress and results. We kept observational notes to document the students' processes throughout the workshop. The students' materials, their reflection sheets and the observational notes have been processed following an open coding procedure to identify patterns, key issues and challenges. The workshop was followed by a questionnaire sent to the participants to collect immediate data about the learning goals and reflections on the impact of the workshop on their future projects.

## Procedure

Prior to the workshop, the participants received two homework assignments to familiarize with data capturing, analysis and visualization methods. First, the participants were instructed to scrape a specified webpage (i.e., their university library's search-page), and second, they were instructed to visually explore a sample dataset from RAWGraphs (an online visualization tool that we recommended for the workshop) and extract three insights from it.

The three-day workshop started with a basic introduction on the data workflow and the tools provided (the participants worked on their own computers) and a debriefing of the homeworks. The workshop went on with the **Activity 1** (Question definition), where the participant groups needed to define research questions based on their semester project. **Activity 2** (Data collection) kept exploring the previously defined research questions, and the students were invited to capture potentially relevant data in relation to the research questions. The task of **Activity 3** (Data transformation) was to clean, prepare and transform the captured dataset. The workshop ended with **Activity 4** (Data exploration), when the participant groups had to analyse the dataset, produce suitable visualizations and prepare a presentation to share with the other groups. The participant groups could iterate from Activity 1 (Question definition) to Activity 4 (Data exploration), if necessary. An overview of the setup and methodology of the workshop can be found in Table 1.

<b>Our interest in running the workshop</b>	We wanted to investigate how designers should be equipped to make sense of data in their design process and what kind of data literacy should be supported by service design education in their curricula. In particular, we wanted to explore how design students adopt a data-driven workflow as a complementary technique for their research phase?
<b>Settings</b>	The workshop took place in the format of a three-day format on consecutive days. Prior to the workshop, there was a homework to familiarize participants with some of the tools. The theme of the workshop was related to the semester-long project that the students had to work on.
<b>Participants</b>	First year Master's design students (n=26, 20 female, 6 male) from Service Design. Students worked in groups of 4-5.

<b>Apparatus</b> <i>Dataset</i>  <i>Software Tools</i>	No provided dataset (the participants captured data as part of the study).  WebScraper <sup>3</sup> , Microsoft Excel, Google Sheets <sup>4</sup> , RAWGraphs <sup>5</sup> , OpenRefine <sup>6</sup> , Carto <sup>7</sup>
<b>Procedures</b> <i>Prior the workshop</i>  <i>3-days workshop</i>           <i>Follow up</i>	Homework a week before the workshop to scrape a webpage (with Web-Scraper), and extract one insight from the Titanic dataset with RAWGraphs.  Basic introduction presentation about data processing and tools and debriefing on the sensitizing task. <b>Activity 1 (Question definition):</b> Related to the semester project, defining three research questions to be answered with data. <b>Activity 2 (Data collection):</b> Capture data (by scraping or downloading) for the questions from Activity 1. <b>Activity 3 (Data transformation):</b> clean, prepare, transform the captured data from Activity 2. <b>Activity 4 (Data exploration):</b> Make sense of the dataset from Activity 3 by analysis or visualization. Conclude on three main insights gained. Iterate from Activity 1, if necessary. Prepare a presentation about the process and the insights.  Survey regarding learning goals, individual reflections and impact of the learning on participants' future work.
<b>Research Data</b>	Content analysis of presentations from Activity 4, observational notes throughout the workshop, post-workshop survey and observations.

Table 1: Setup and methodology overview

## Results

Prior to the study, the participants received two homework assignments. The task to visually explore a dataset (to be done individually) was done by all participants, while the task of scraping a webpage (to be done as a group) was only carried out by half of the groups. During the debriefing, the participants reported difficulty in extracting interesting findings from the sample dataset without having some background knowledge and not knowing what would be interesting about this dataset.

During the workshop, the groups started with Activity 1 (Question definition): they first considered their project and defined some initial research questions to be answered with data. The groups then followed to Activity 2 (Data collection). They engaged in capturing data from online resources, primarily by scraping and downloading existing datasets (i.e.,

<sup>3</sup> WebScraper: <http://webscraper.io/>

<sup>4</sup> Google Sheets: <http://sheets.google.com>

<sup>5</sup> RAWGraphs: <http://rawgraphs.io/>

<sup>6</sup> OpenRefine: <http://openrefine.org/>

<sup>7</sup> Carto: <http://www.carto.com/>

open data). The scraping process was initially daunting for participants without extensive programming skills. Nevertheless, by the end of the process most participants managed to develop non-trivial scrapers, that could tackle pagination and similarly advanced techniques. All scraping was done using browser extensions.

The groups ended up by capturing data on tourism, primarily by scraping publicly accessible data from social media and websites that focus on elements of tourism (such as community reviews). All teams scraped data from various social tourism platforms (Tripadvisor, etc.) and some teams from social media (e.g., Twitter and Instagram).

In the next step, the participant groups worked on Activity 3 (Data transformation). The main needs of data cleaning were to eliminate inconsistencies, hidden characters, encoding errors and similar string operations. As a significant portion of the participant groups' captured data was location-specific (e.g., addresses), some groups used OpenRefine - an open source application for data cleanup and transformation - to enrich their datasets with Global Positioning System (GPS) coordinates. This was accomplished by following an OpenRefine recipe that called an external API with the address input to enrich the data with GPS coordinates. The participant groups finished the study with Activity 4 (Data exploration). The groups explored their dataset with visualizations produced through data visualization and mapping tools, such as RAWGraphs and Carto.

Throughout the three day workshop all groups went through several iterations from Activity 1 (Question definition) to Activity 4 (Data exploration). In the end, all the groups managed to develop valuable insights for their semester project. As an example of the kind of research questions the teams attempted to answer, one team focused on how seasons influence tourism. When they found that the correlation of seasonality and tourism is probably low for their target group, they decided to focus on comparing the target city with similar cities, based on weather and other predictors. This was a process that allowed the group to explore, stretch and expand their research questions.

In the following section, the outcome of the workshop will be discussed reflecting on the service design educational perspective and opening up to other crucial aspects related to data that should be considered while designing for services.

## Discussion

As previously mentioned, the participants of the workshop were second semester Service Design students who had successfully completed their first semester courses in Programming, User Experience and Product-Service Systems design. All the students were familiar with qualitative data, ethnographic research and methods, co-design methods, and in general, with adopting a user centered perspective through all their studies.

One of the goals of the workshop was to have students realize that the ethnographic research they are familiar with in their work could be supported by data analysis in the design of services, and to find out what other kind of skills and knowledge the students should then acquire through the program and how.

The initial struggles for the participants were, firstly, to become familiar with the computational thinking that data capture and data manipulation require. These activities at the level of the workshop (and design students) only require basic programming skills (and more of computational thinking), but at the beginning of the workshop they found it hard to make the connections to their previous programming experience. However, after a few iterations of a trial-and-error process it became much easier for them, partly by becoming familiar with a “data mindset” as well as getting familiar with the tooling and the capabilities. Throughout the iterations they both refined their leading research question, that informed what data to capture, as well as their data capture technique, that informed what complexity they would address. In this process, they continuously improved their understanding of what were the addressable and non-addressable questions, and iteratively eliminated the non-addressable ones. This data-driven inquiry process, and the very act of continuously tinkering



with data helped them in refining the orientation of their project. With every iteration, their understanding of the potential of employing data techniques increased. Since the workshop lasted three days, the participants had a sufficient amount of time to carry out various iterations. In the end, all the groups succeeded in understanding how a data-driven approach can help in identifying and answering relevant research questions. To succeed, the students needed to incorporate a computational-thinking heavy “data mindset”, which was intertwined with their designerly framing processes.

During the workshop we also observed that participants used data techniques to seek inspiration from data; tinkering with data was approached as a generative design technique. For example, one of the groups analyzed social media hashtags for a specific neighborhood, and looked specifically into the less common descriptors of the neighborhood, such as slang and subcultural terminology. They accessed knowledge that otherwise would have been hard to gain from user interviews. They used their findings not to quantify how popular such hashtags are compared to the most frequent ones, but to explore a phenomenon that they would hardly have access to otherwise. This is a creative way of using data, and one where the human abductive sense-making is necessary to create the right connections (Kolko, 2009; Dorst, 2011). It is worth noting that the kind of data the students extracted from a critical planning of their data search was quite different from the statistical data or the public data now available in public repositories. The combination of public data and this kind of data can in fact provide a much more “live” picture of events, trends, or social phenomena. Abductive reasoning from data is a point of departure for the traditional usage of data, which is to deduct or induct conclusions from a dataset throughout analysis (Wong and Thomas, 2009).

We assume that students can be trained to such designerly sense-making from digital data the same way as they are trained to extract meaning out of insights gathered from contextual and qualitative studies. The (service) design process could then move technically driven and abstracted data ideas to human-scale service offerings, and while future research is necessary to validate this in detail we can argue that service design education should start considering specific interventions or even full courses on data literacy for designers in their curricula.

The workshop was a limited (in terms of time and perspective) experimentation within a Master’s program, but proved that service designers with basic knowledge on programming can make sense of and use data as one of the materials they have to work with in the design process. It also gave some insights regarding the software and tools that should be used to support these teaching sessions.

The challenges that data poses to service designers, however, are more complex than the ones that are simply related to transforming a dataset or capturing data through scraping online resources. Prendiville et al (2017) discuss the role of service design in making sense of data through processes of translation, visualization and persuasion to turn the abstract and intangible nature of data into human-centred services with social and economic value. The authors claim that one of the critical aspects that should be addressed by service designers concerns the transformation of data (something highly technical that we all produce every day, though letting others to exploit it) into something that can be understood and consumed by broader communities, possibly making the general public a proactive agent in data formation and use. In other words the question is to use data as a new kind of resource for service design. In particular when focusing on publicly available data -- open data -- it can be regarded as a new commons (Ostrom, 1990), with new communities of users and new practices. The question of open data as a new commons (Morelli et al., 2017; Seravalli, 2014) is also currently under discussion in the design community and the role of service designers to empower citizens in making use of data and to co-create more explicit value propositions for all the different stakeholders has to be further analyzed.

A completely new, and almost unexplored, chapter should then be open regarding the tools that could support the designer intervention in the “non expert” empowering process. Can the service design toolbox be modified or adapted to add the data level earlier in the design process?

## Conclusions

This paper discusses the relevance of data literacy in education, in a logical domain that crosses two perspectives.

The first perspective focuses on the rising relevance of data in the design of new services. The ever growing number of services that use data and/or produce data requires that service design education include teaching activities that equip the students with the tools needed to understand, analyse and transform data as well as design with this data informing the process at every step.

The second perspective focuses on the increasing the availability of data and the opportunity to use it as a resource, or even, when the data are publicly available, as a commons. The use of shared resources requires that a set of practices (and in particular design practices) for data usage are consolidated and that a community of users has access to this resource and can understand, figure out, and make proposals regarding how this large amount of data can be used.

The intersection of those two perspective creates a new working area, in which it is important to define new operative tools and practices, so that a higher level of data literacy can create, as a consequence, a higher integration of data into the design of services. The two perspectives are strongly connected, the case presented in this paper though addresses the first one, as it is a contribution to the definition of new teaching activities for service design to work with data. However, at the same time it creates the conditions for a wider use of data that will eventually create new practices and new communities around this new resource.

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# Put on your oxygen mask before helping others: mental well-being in service design

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## Abstract

This paper describes the lessons learned from Service Design projects which have tackled sensitive subjects: from young people in care, mental health, unemployment, homelessness, overcrowding, crisis and domestic violence to name but a few. It highlights the importance of adapting normal project practice to protect the mental health and well-being of all those involved in a project. It argues that project rituals must be developed to look after the participants, which requires a shift in company' cultures to truly value mental health and well-being and to reduce staff stress and trauma.

**KEYWORDS:** mental health, mental well-being, service design, research, sensitive subjects

## Introduction

As Service Designers, we accumulate, manipulate and disseminate a wealth of knowledge, skills and techniques in our quest to convert complexity into clarity. We research, design, prototype, test, and implement myriad innovative solutions destined to improve the lives of others.

At the core of this work is an ability to understand people, work out how best we can address their known needs, as well as how we address the needs that they do not yet know they have. This basic tenet of our work – making people's lives easier – is a guiding principle which we do not always apply to our own practices.

In our eagerness to understand others, we can sometimes neglect to understand and appreciate ourselves, rarely exploring the ways in which we can improve our own lives, both professionally and in more general terms. Too often we fail to apply our design approaches to our own work practices and processes and so, as our clients and end users appreciate the end results, our own house can be left in relative disarray.

One of the most fundamental of areas that we should not overlook is our mental health and well-being: not specifically the overtime or amount of travel involved in our work – though that no doubt takes its toll. We are considering here those projects that tackle the toughest subjects, those which perhaps require us to give a part of ourselves that might otherwise have stayed hidden, or those where we must relate to a participant's - and perhaps our own - traumatic experiences.

*“As a service designer, I need to know how to work with a suitable amount of empathy yet a balanced amount of detachment so that I can look after my team and myself during difficult projects.”*

Research interviews and workshops resonate with us in a variety of ways, and are often straightforward. However some may lead to serious and problematic conversations which tackle sensitive subjects head on. Discussions of this nature can have a profound effect on both researchers and participants, some triggering deeply felt emotions whether on a compassionate level or on a personal level of recognition through shared experience.

These triggers affect each of us in different ways and in different situations. We might experience emotions inappropriate to the context of an interview. We might become angry or sad and our mind may wander. We might become stressed and struggle to comprehend what we have heard. We might even suffer flashbacks based on our own intensely personal experiences.

The themes that we encounter which strike a chord or hit a nerve can be difficult to deal with at the best of times, more so whilst on a professional footing with a relative stranger present. We soldier on in the face of difficult issues, braving the situation in the name of ‘professionalism’. However it is important to take a step back and reevaluate these situations where we are faced with sensitive emotional issues.

The associated feelings that can be generated from such issues should not be ignored. No matter how important the task, it must not come at the cost of our own mental health – or that of somebody else. When we become affected, our concentration lapses and we become distanced to those around us – colleagues or participants – as well as to ourselves. We become unavailable and unable to properly interact.

If we are to be in a position to support others, we need to first be capable of looking after ourselves. This may not always be instinctive or intuitive, so we need to prepare ourselves for these potentially difficult moments. There are a variety of techniques that we can add to our skillset to help us deal with well-being issues, methods which can help ground us before we respond in tough situations. These techniques may be as simple as taking a few minutes to breathe, or they may involve bringing in professional counsellors.

For employers, the cost of doing nothing is staggering: mental health problems in the UK workforce cost employers almost £35 billion last year, £10.6 billion in sickness absence; £21.2 billion in reduced productivity at work, or ‘presenteeism’ and £3.1 billion in replacing staff who leave their jobs because of their mental health. (Parsonage and Saini 2017)

## 1. Consider your whole project approach

Looking after our participants’ well-being is only one aspect - arguably the most important one - of managing well-being within a project. We must also consider the whole project from the bottom up.

*“As a project manager, I need some guidance to plan projects on sensitive topics so we can achieve good outcomes for our client, their users and our people.”*

No project management training and very little design training prepares us for researching and designing technology to help tackle issues such as domestic abuse. We need to turn to other disciplines such as social research and psychology for guidance.

### **Establish a risk strategy for each project.**

There are a variety of approaches in preparing for a project that can reduce the likelihood of risks occurring and mitigate their impact on staff. The British Sociological Association Statement of Ethical Practice (2017) states that, *“Social researchers face a range of potential risks to their safety. Safety issues need to be considered in the design and conduct of social research projects and procedures should be adopted to reduce the risk to researchers, including, importantly, any research assistants employed.”*

### **Bring in the experts.**

As Service Designers it is rare that we find ourselves experts in a particular field and, particularly where issues of a sensitive nature are concerned, it is essential to bring in organisations with in-depth knowledge and experience in that area. By working closely together at the early stages of a project, we can shape the approach, the designs, the language, making sure that the proper safeguards are in place for participants and designers alike.

The [Aye Mind Project](#) explored digital approaches for mental well-being with young people. It was funded by CHEST (Collective enHanced Environment for Social Tasks) and led by a consortium with Snook, NHS Greater Glasgow and Clyde (NHSGGC), Young Scot and the Mental Health Foundation. The project then assembled a collaborative of 20+ local organisations to provide guidance and help with dissemination. The NHSGGC team made sure that everyone who worked on the project attended a Mental Health First Aid training course, even staff who didn't come in contact with young people. We have kept that practice up ever since, including for interns and contractors.

During the [Tech vs Abuse](#) project with Comic Relief, Snook partnered with [Chayn](#), a collaborative that leverages technology to empower women against violence and oppression, and [Safelives](#), a domestic violence advocacy and support organisation. This gave us access to advice and support from experts in the field.

### **Work with intermediaries.**

Relevant community groups, support workers, and charities are more likely to understand the people that we are trying to reach, and will be able to guide the recruitment of participants. Even more importantly, they will be able to support participants before, during and after interactions. By reaching out in this way we can be confident that participants have access to the support that they might need, allowing us the peace of mind to focus on the project and what it is trying to achieve.

As an example, the [Aye Mind](#) project reached out to a wider collaboration of agencies and partnered with [Y-Sort It](#), [See Me](#) and [GAMH](#) for the co-design workshops with young people. A staff member from each organisation supported their young people during the workshop.

### **Work with your team.**

With heavy workloads it can be all too easy to plan our projects in isolation, landing the project plan on a colleague's desk as a fait accompli. However, this is a false economy and,

by bringing a project to the team's attention at the very earliest emergence of the brief, we give colleagues the chance to bring their own experience to the table, their own connections with the community.

### **Assign projects carefully.**

It is important to consider carefully the suitability of individuals within our potential team for a particular project. A discussion about the project with possible candidates before assigning a role may well reveal strong reasons for both inclusion and exclusion. It might be that while a suitable looking candidate has experience of certain issues relevant to a project, the subject matter might be one that resonates too strongly within them, putting them in a difficult and possibly harmful situation. We should always bear in mind that something that is not of a sensitive nature for one person, may very well be a trigger for someone else. We all bring our different histories to our work, and we cannot presuppose what is an issue for one and not an issue for another. Where these issues are concerned, time needs to be allowed for colleagues to consider their feelings about possible involvement, and respect given where they decline involvement. Staff should be clear that any discussions of a sensitive nature are shared in complete confidence. Should a situation arise where it might be important to share information, we must do so only with the individual's express permission.

### **Set boundaries.**

It is important to clarify the boundaries of what can be expected of a project, what can be expected of us - by others as well as by ourselves - when dealing with those in extreme need or those suffering from a traumatic experience. When we find ourselves emotionally engaged and invested in somebody's story, the need to 'give as much as you can' can be strong. We feel frustration at our inability to facilitate change in an individual's circumstances, or the sense of responsibility in representing their voice in a wider context might be overwhelming. Boundaries provide a baseline, and being aware of these beforehand allows for warning bells to ring before it is too late. The level of engagement should always be an individual's choice, and it should be pointed out that sharing more does not necessarily make for a better job - in some cases it might actually prove counter-productive.

### **Reduce the pace.**

Projects touching on sensitive issues require a greater amount of time than those of a more routine nature. Allowing for more frequent breaks gives both researcher and participant time to recover and revitalise. Pairing colleagues up so that they can offer each other support or allow them to excuse themselves from an interview or workshop should they feel the need can be useful. A two-person approach can also be useful where an interviewee is in full flow and continuity can be maintained. Planning a slower paced project is important so that more time is taken to think, take stock of, and reflect upon important and difficult issues, resulting in carefully considered outcomes.

### **Design your internal support.**

For all sensitive projects, we now designate a staff member, within or outwith the project team, to act as support, as a trusted friend, a sort of 'supervisor'. Therapists have a supervisor who helps them work through what they hear and looks after them to make sure that they don't take their clients' issues onto themselves. Staff know that they can call their supporter anytime when they're struggling. When internal support isn't enough, we have put in place professional support to help create that culture where mental health is equally important to physical health.

## **2. Look after your participants**



Making sure that research and design participants are well looked-after is a familiar part of a Service Designers' work. Research frameworks, information letters, consent forms, risk assessments (physical), and appropriate reward vouchers display a degree of thought and regard for participants. But the truth is that the duty of care goes a great deal farther than this.

As designers of future services, we aim to meet the needs of those who will be using a new, yet to be implemented service, or an existing service in a future state. Whilst the new or evolved service is the ultimate goal of our work, we cannot put the needs of future users above those with whom we deal in the present: the well-being of participants in research or design sessions cannot be at the expense of the future design.

This doesn't mean that we should shy away from difficult conversations and difficult topics. On the contrary, with a little forethought, we can equip ourselves to support participants, researchers and designers equally, allowing us to tackle the toughest of topics in a considered and considerate way, achieving valuable insights in the process.

### **Give before you take.**

Before engaging with participants, consider: what's in it for them? What will a participant gain from taking part? Can we give before we take? Can we design our research in such a way that we can offer something to the participant before asking them for their contribution to the research?

Snook have run The Matter project twice to engage young people first around sexual health, then around alcohol consumption. In exchange for sharing their views on sexual health or alcohol, young people learn to design, create and publish their own newspaper. They present their opinions and their work at the event launch. Here is an excerpt from the invitation to take part:

"The best thing is that you don't need any previous skills to get involved and all of the activities are supported by staff from The Matter. Your participation will be recognised – we will support you through a form of accreditation that suits you, like a Youth Achievement or a Saltire Award."

The skill and knowledge exchange places the designers and the participants on an equal footing, unlike difficult situations where the disparity of power is often at play.

### **Consider end-to-end support.**

We need to think carefully about participants' experiences before and after the research or the workshop. By working with community groups, social workers and networks that are familiar to participants, we can make sure they are fully supported during and after the interaction with them.

Given what our project partners know about the participants and their experiences, how might we best present the invitation to participate? What support might they need to be able to take part? If they need to discuss something afterwards, who do they turn to? The project should make it clear to partners and participants how the support will work.

Snook worked with Renfrewshire Council to explore what customers needed to access digital services. We worked with STAR, a local community centre. After carefully checking whether we could be trusted to be given access to their participants, they introduced the project a few days beforehand to give themselves time to reassure the most nervous attendees. They scheduled the order of interviews so that relatives could come together. The STAR manager, upon hearing for a young woman's story invited her to come back the next day so that they

could work out ways she could access support for her situation. The continuity was crucial to the well-being of vulnerable participants, to the researchers, and to the research itself.

### **Re-telling stories can be traumatic.**

We are usually more comfortable sharing difficult stories with our nearest and dearest, so it's important to consider the effect of asking participants to recall experiences and recount them to a stranger. Recollection in itself can be traumatic, so we try to introduce ways to help participants put some distance between their stories and the present. Personas, storytelling, and using design games are ways we can help participants put distance between their own stories and the discussion.

The Co-designing Care project researched and co-designed digital innovations with young people in care. The team designed an interactive activity based on the popular game of the time, Crossy Road, designed to capture the young people's journey through care and their lived experiences. Young people were asked to consider phases of their lives and tell us the bad and good elements of these experiences through the use of collage. It was made clear to the young people that they did not have to disclose anything they were not comfortable with. They could also complete the activity based on a typical journey of a looked after young person.

It is worth bearing in mind that triggers can surface at any time in both ourselves and our participants – even when the research is not necessarily directly related to those lived experiences. Be alert to a person's body language and the replies that indicate a boundary which they are not prepared to explore and move on with the interview.

### **Design every aspect of the interaction.**

While we would generally visit interviewees in their home or place of work to do contextual interviews, there can be times where that is either not possible or indeed not preferable or appropriate. On these occasions, it is important to ensure that the space we're inviting people into is suitable for the situation.

In the case of a workshop with women victims and survivors of domestic abuse for the Tech vs Abuse project, the presence of an Independent Domestic Violence Advisor (IDVA) at the session was an important asset, as was a chill out area with soft furniture – for mingling, eating or just for a small measure of sanctuary. Something as simple as offering a hot drink can markedly benefit rapport, more so if such a simple experience is shared between researcher and participant outwith the confines of an interview.

During the Aye Mind co-designing workshop, Snook made a mistake: having checked what we thought was every aspect of the workshop with our project partners, we later found that the menu for the buffet had been neglected, resulting in a number of workshop participants feeling excluded. Catering for those with special dietary needs or eating disorders is now part of every project plan.

## **3. Consider all your project rituals with a mental well-being lense**

After adapting the project to the sensitive nature of the topic and designing the project to look after the well-being of our participants, it is important to embed mental well-being in all of the project rituals. Just as there are agile project ceremonies, standups and retrospectives, we need to incorporate well-being rituals.

**“As a team member, I need to know how to leave behind what I have heard so that I can return to my personal life.”**

## **Sleep matters.**

“Sleeping poorly increases the risk of having poor mental health. In the same way that healthy diet and exercise can help to improve our mental health, so can sleep.”  
(Espie 2011)

For project managers, this might mean arranging for teams to travel the day before a workshop in order to get enough sleep, even planning for the risk of delays, so that researchers and facilitators can truly be focused on their participants.

## **Debriefing rituals matter.**

The importance of debriefing sessions cannot be underestimated and these sessions should be held during or immediately after each research sprint. Identifying and discussing issues that team members have experienced can help to mitigate some of the effects of those issues that have stayed with them. Regularly asking colleagues how they are feeling can provide an opportunity to shed some of the load and, likewise, when offered the same opportunity ourselves, it matters that we take the chance to breathe and really ask ourselves how we are feeling. It is, of course, very easy to tell one another that we are ‘fine’, and even harder to tell colleagues the whole truth, however it is worth practising. While it is tempting to drop debriefing sessions when the project is behind schedule or when the themes to discuss are particularly hard, it is exactly on occasions such as these that debriefs are most critical and most effective.

## **Learn 5 techniques for self-care.**

The following simple techniques are aimed at helping us to relax and keep ourselves grounded in the aftermath of difficult and distressing experiences. Some of these rituals can work within the team context whilst others may work best for an individual. Although some may at first feel unnatural and take us out of our comfort zone, in the long run they can be extremely helpful and, sooner or later, will seem like second nature. Always bear in mind that we are all different and a technique that works for one person might not be useful for another.

### **1. Breathe**

Breathing is the cornerstone of self-care. Gradually extend your exhalation so that it becomes longer, then inhale. You can imagine that you are breathing slowly in and out through a straw. Some people like to exhale through the mouth, like a sigh. Just be aware of the air coming in and out, either by placing your hand on your abdomen or by paying attention to where on your body you can track the sensations of breathing. Find your own way to do as much of this as you feel comfortable doing – there’s no need to make yourself feel self-conscious. A few moments of awareness can make all the difference. Extending your exhalation sends a calming down message to your nervous system and can make a huge difference. Don’t worry about the in breath, it will take care of itself.

### **2. Feel your feet on the ground**

If you’re sitting down, feel the chair under your bottom, the back of the seat supporting your back. Keep breathing out slowly.

### **3. Pay attention to your environment**

If you’re on the train heading home, can you feel the wobble of the train? What can you hear around you? What else can you notice around you? Can you feel wind on your face? Keep breathing out slowly.

#### 4. Shake it off

Animals who have escaped a danger tremble to release the adrenaline. Shake your hands, your arms, your legs, your head, as if you were trying to flick something off. Return to breathing out slowly.

#### 5. Brush it off

Brush your shoulders as if you were brushing some dust off your shoulder pads. You're letting the stories fall off your shoulders. Think of the expression: *"you've got too much on your shoulders"*, or, *"to have a monkey on your back"*. Well, flick them away. You can do the same thing on your back.

### 4. Establish a culture that values well-being

*"As a manager, I need to establish a culture where it's OK to ask for help so that I know that we practice what we preach and look after our team's well-being."*

To be able to design projects that are sensitive to the needs of participants and designers, there needs to be at the root of it all a culture that truly values mental well-being. It is only relatively recently that mental health has become less taboo and recognised as equally important to physical health, and there is a great deal of work to be done.

'Busy' is a mark of success. We value 'busy'. As a culture, our business has become busyness (it is interesting to note that both words derive from the Old English for 'anxiety'). Whether it's at home juggling kids, meals and activities, or at work, juggling clients, projects or budgets, busyness takes a toll on our family lives, our friendships, and our work relationships. Our ability to switch off at the end of the day is compromised by our increasing connectivity, our smartphones chirping at every after-hours email sent by a similarly busy colleague, and the 'reward' of ticking another item off the to-do list.

But what if we valued our mental well-being more? What if we set up the different parts of our lives – work, friendships and families – so that well-being comes first? What if we better understood and accepted the sacrifices that would need to be made?

We might look at the care we've shown for an individual's well-being or our commitment to well-being within a particular project, feeling that we have done our bit. However it's that wider, second-nature culture that we need to establish, remembering not only the importance of well-being in terms of good practice, but also as playing a fundamental role in our success as Service Designers.

#### Show that it's OK to not be OK.

An important first step is establishing and communicating that it's ok to be affected by difficult issues. It can too easily feel like failure if something triggers an emotional response and becomes overwhelming. If a colleague seems emotional, is our first response to support them or to judge them? Is 'being emotional' valued in our workplace or used as a derogatory term? In these situations soldiering on should not be an option. Time, space and support, if required, should be made available without any imputation or insinuation attached. Boundaries should be respected, time taken to learn how to spot them surfacing, and support offered, as people push back to protect themselves.

#### Show that it's OK to ask for help.

When we're struggling, we need to ask for help – professional help. We can identify the particularly difficult projects ahead of time where we need to factor in professional help from the beginning. At Snook, we have an openly available list of therapists who have come

highly recommended and who come from diverse disciplines with diverse styles, so that anyone who needs the list can access it. Some companies sign up to becoming part of an Employee Assistance Program (EAP).

### **Learn to communicate better.**

Non-Violent Communication (NVC) emerged in the 70s but, along with active listening, it is surprising how little headway it has made in the workplace, even in design studios, where we are supposed to be all about listening to others. We seem to be better at listening to users than listening to our colleagues' needs, let alone our own. NVC "guides us in reframing how we express ourselves and hear others... ..We are led to expressing ourselves with honesty and clarity, while simultaneously paying others a respectful and empathic attention." (Rosenberg 2015) If we are to place mental wellbeing at the heart of our company cultures, we need to learn new skills, and it starts with better communication skills.

### **Embed your wellbeing practices.**

At Snook, we were reminded recently to keep sharing the practice of assigning a 'supporter' on difficult projects when we realised that our newest team members didn't know that they could ask any of us for help at any time. This is now duly noted in our company wiki and reflected in our on-boarding process which also includes Mental Health First Aid Training.

### **Conclusion**

Our well-being should take precedence over all else. Whether colleagues, staff, managers, or participants, we should always feel safe and supported. By taking steps to recognise and improve our mental health within the context of our projects and our companies, we can begin to effect a positive change with widespread positive results to benefit all

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# The future of visual communication design is almost invisible or why skills in visual aesthetics are important to service design

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## Abstract

Over the past 20 years there has been an increase in post-secondary visual communication education in Australia while the growth of the industry itself has been low, meaning an increasing number of graduates compete for a limited pool of jobs<sup>1</sup>. The use of visualisation in human centered and service design approaches provides alternative employment opportunities for these graduates. This paper presents a case study of a visual communication honors research project that is indicative of those opportunities and the potential benefits of having highly skilled visual practitioners involved in human centered and service design processes. Furthermore, we argue that a consideration of the aesthetics of the visualisation methods used in this context is essential and that visual aesthetics should be a significant part of the service design skillset.

**KEYWORDS:** visual communication, visual aesthetics, visual research methods, visual storytelling, visual skills

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<sup>1</sup> Average annual employment growth for visual communication in Australia: Historical 2010 – 2017, 0.69%. Forecast 2018 – 2024, 1.4% (Do, 2017).

## Introduction

Whilst we use a visual communication honors design research project as a case study to argue our case, it is not our intention to provide a detailed account of the project, a step by step guide of the methods of research and an analysis of its success or failure. Rather it is our intention to analyse how the participants responded to the aesthetics of the visual methods used in the projects development as it became apparent to us that the visual aesthetics of the methods had an impact on how the users engaged with them. It struck us that methods that users did not feel confident in engaging with would impact on the quality of the research and we considered this more significant than the outcome of the project itself.

We will mount our case by firstly outlining the changing nature of visual communication design practice and the challenge confronting contemporary graduates of an increasingly competitive work environment with a view to arguing that the skills they have are suited to human centered and service design practices. We will note that the literature on visual methods in these practices is quite extensive but argue that the aesthetic dimension of these methods is rarely discussed and when it is, it is generally dismissed as being important. We will then provide some background to the project itself to indicate its context and broad aim whilst indicating our key interest was on the user engagement with the methods and not the outcome. We will then move on to the case study analysis of the methods used and our observations of how users interacted with them. We will then conclude that the aesthetics of the methods, what Roxburgh (2010a) has called the “aesthetics of research” (p. 438) had an impact on user engagement and that this suggests to us that aesthetics are an important consideration in their use. Furthermore, we will argue that as visual communication graduates are skilled in visual aesthetics they can bring important attributes to human centered and service design practices.

## The Disappearance of Design and the Appearance of the Immaterial

The professional landscape of today's visual communication design graduate is perhaps more challenging than at any previous point in design's short history. The challenge of technological change presents itself on the aesthetic plane - anyone anywhere in the world with the right computer hardware, software and a good internet connection can compete on the basis of how well they style the things they design. The ubiquitous use of the term design thinking presents itself on the cognitive plane - once the sole preserve of designers it is increasingly used by non-designers who compete on the basis of how well they think the things they design. And finally, the phenomenal growth of the service economy presents itself on the existential plane - the decline of manufacturing in developed economies has seen a shift to designing immaterial things rather than artefacts, begging the question ‘as the material dimension of much that is designed disappears what is it that gets made and what do we do as designers?’ These three challenges call into question what it has historically meant to be a designer.

The emergence of the graphic design industry during the 19th century phase of the industrial revolution is aligned with a rise in the production of manufactured goods and was integral in marketing them (Forty, 1986; McCoy, 2001). The graphic design education that evolved in the early 20th century was concerned with teaching the manual technical skills required to prepare artwork for print reproduction and the visual aesthetic skills required to make that artwork appealing to consumers of manufactured goods (Brinkley 1949). Despite design education evolving by the mid 20th century to encompass studies in psychology and social theory (Margolin 1991), by the latter part of the century the focus of much graphic design education mainly emphasised developing student's aesthetic and technical skills (Salchow, 1981; Bierut, 1988; Frascara, 2002) - albeit in a problem solving framework - typically using a



kind of master and apprentice model of learning (Scher, 1986; Holland, 1992) within a consumer lead design paradigm (Whitely, 1993; Margolin, 1998).

Countries where the industrial revolution took hold witnessed a shift to a post-industrial footing by the mid 20th century as their service sector economy eclipsed their manufacturing economy (Kim, 2006). Companies operating in these countries that still manufacture physical goods see them as largely incidental to “the benefit or ‘value’ which customers derive from the product, and associated services” (Pawar, Beltagui, & Riedel, 2008, p. 469). The transformation from an industrialised product-based economy to a post-industrialised service-based economy heralds a move away from the material reality of a product towards a focus on the immateriality of the service as experience. This is what Jorge Frascara (2002) calls the “dematerialization of design” where design becomes “more concerned with the contexts in which objects and communications are used by people, and with the consequences that the existence of those design creations have on people in general” (p. 38). It is in this context that user-centered design emerged and by the 1990s it evolved to encompass “the active and direct involvement of all product stakeholders in and throughout the design process” (Sanders, 1992, p. 53) in a move to participatory or co-design. The tools, methods and processes used in this new conception of design signal “an emerging visual language that people, all people, can use to express and interpret those ideas and feelings that are often so difficult to express in words” (Sanders, 2002, p. 6).

In service economies companies that don't manufacture physical products and are entirely service oriented deal with immateriality as core business. Beyond the use of visual communication design to sell their services it is easy to imagine that there is no further role for it. However, many such companies are leading the way in the use of design, or more precisely design thinking, to develop business strategy and new services (Kelley & Littman, 2001; Brown, 2009; Lockwood, 2009; Martin, 2009). Design thinking is used to design things that have no material properties but need to take a material form in order to be communicated and understood. There is an emerging body of literature that indicates visualisation and visual representation are central to human-centered service design (Diana, Pacenti, & Tassi, 2009; Segelstrom, 2009; Segelstrom & Holmlid, 2009). Designers working in this space “need to be trained to go beyond the individualized expression of visual communication” and “learn how to become involved in the creation and construction” of new tools of research and communication (Sanders, 2002, p. 6). Despite the challenges outlined above visual communication designers are well placed to adapt to and prosper in this new landscape as they are expert at telling stories visually and stories are not material objects but immaterial ideas about human experiences of the world.

While the literature on the role of visualisation in user-centered design is quite extensive it tends to focus on the development of taxonomies of methods, how they are used in the process, and in general terms how they contribute to understanding and transforming the situation being researched (Roxburgh & Cox, 2016; Segelstrom, 2009; Segelstrom & Holmlid, 2009). Likewise, there is a body of literature that reports on the emergence of a user-centered approach within visual communication practice (Frascara, 1997; Fleming, 1998; Strickler, 1999; Hanington, 2003; Laurel, 2003; Bennett, 2006; Strickler & Neafsey, 2006) and it can be characterised as having similar concerns. Whilst both bodies of literature advocate the importance of visual methods there is a paucity of material that specifically interrogates the visual aesthetics of those methods and the role they play in understanding and transforming the situation being researched. On the rare occasions the visual aesthetics of visual methods are addressed in the literature it is typically to emphasise that the focus should be on their capacity to collect data and not their aesthetics, inferring that their aesthetics are either irrelevant or a distraction (Collier & Collier, 1967; Pink, 2006; Kueh & Thom, 2018). Kueh and Thom, for example, argue that “the quality of the visuals therefore should focus on the representation of experiences and exploration of events and things ... not their aesthetic value.” (2018, p. 22).

However, the idea of separating the aesthetic aspect of a visual method from what it ‘tells us’ is a positivist view that infers that such methods are objective and transparently show us the world as it is. It is surprising to find this view in the literature of a constructivist activity like design. More so when you consider that in anthropology, from which human-centered design takes many of its cues, the relationship between the research methods used and how they in turn shape how data is collected and interpreted by the researcher was discussed by seminal anthropologist Clifford Geertz (1988). Geertz rejected the dominance of positivism which he argued was concerned with preventing “subjective views from colouring objective facts” (Geertz, 1988, p. 9). Geertz argued that the ethnographer, as observer and author, transforms the reality of the situation observed through the subjective act of observation and the nature of the methods used for that. This is known as reactivity and Geertz calls the role that the researcher's subjectivity plays in the production of ethnographic knowledge, the ‘author function’.

That a positivist view prevails in relation to the aesthetics of the visual methods in design research is also surprising when we consider that “postmodern theory overturned the old idea of a world whose existence is independent of our representations of it” (Strickland, 2003, p. 125). Furthermore, ignoring the aesthetic dimension of such methods seems at odds with Herbert Simon's proposition that the manner in which “representations are created and how they contribute to the solution of problems will become an essential component in the future theory of design” (Simon, 1969, p. 24). The manner in which representations are created necessarily touches upon their aesthetic dimensions. In contrast to the positivist view there is a small body of literature that does discuss the need to consider the aesthetic dimension of the visual methods used in terms of their impact on understanding what is being researched (Diana et al., 2009; Roxburgh, 2006; Strickland, 2003) and the nature of the design outcomes produced (Roxburgh, 2010a, 2010b, & 2013a; Sanders & Stappers, 2012). In noting that design is an interpretive and constructivist activity concerned with transforming the world from what-is to what-might-be Roxburgh argues that as design researchers we should be “valuing the sensory and experiential parameters and attributes of our research methods” (Roxburgh, 2010a, p. 438) because the methods we use shape how we see, experience, and represent the world which then become the basis upon which we transform it. Roxburgh calls this understanding of the relationship between design research methods and the reality we observe and transform the “aesthetics of research” (2010a, p. 437) which “is an engagement with the embodied sensory aspects, and creative and interpretive potential of the framing, deployment and reading of design research methods” (Roxburgh 2013b, p. 288).

## Service Design and Person-Centered Care: The Project Background

The initial impetus for this project was to understand how the design process, and the visual methods used through it, could be applied to prompt a cultural change within a local aged care provider. Throughout the entire research and design process an auto-ethnographic record of observations and insights was maintained, in the form of a blog journal, which formed a self-reflexive narrative of the research process and experiences from which the following analysis is drawn. Auto-ethnography “seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)” (Ellis, Adams, & Bochner, 2011) and is commonly used in creative research practices (Crouch & Pearce, 2013).

In 2007 the World Health Organisation recommended a move towards person-centred care. Three years prior, the Review of Pricing Arrangements in Residential Aged Care (Commonwealth of Australia, 2004) forecast the growth rate of Australia's older demographic would peak in 2014-2015 and recommended users having more control over their aged care funding. In 2011 The Productivity Commission advocated the

implementation of consumer-directed care in Australia, linking user choice to wellbeing and creating a competitive market between providers to improve quality and innovation. More recently KPMG (2014) noted that consumer-directed care principles could increase quality of life in aged care homes and would be in line with international practices. Yet a study of international practice by McCormack et al. (2015) identified that care providers often fail to recognise the significance of organisational and financial culture on person-centred care and suggested a shift from care to culture to ensure all stakeholders have a voice in the process of moving towards a person-centred model. The aged care service sector's move from a clinical to a cultural approach has parallels with design's shift in focus from products to users. Consequently, a human centred design approach, as represented by service design, has emerged within the health services sector in the past decade or so (Donetto, Tsianakas, & Robert, 2014).

Polaine, Løvlie, & Reason (2013) note “it is because many services are almost invisible that nobody takes care to design them” (p. 31). 31 Volts (n.d.) explain that service design is what helps you choose between neighbouring cafés that sell the same product at the same price. Stickdorn (2011) argues that there is as yet no agreed definition of what service design is but that it can be characterised as having five principles: “User-centred, co-creative, sequencing, evidencing and holistic” (p. 26). Sanders & Stappers (2012) define user-centred as a designer controlled process focusing on the users to create a better solution for them. In contrast, they define co-creative as a participatory design process that recognises the expertise of users and designers, and all involved share control of the process. To maintain the principles of service design the process includes people who use and provide the service being designed. Andrews (2011) suggests that service design is reshaping the common perception of design by demonstrating how its powerful creative process can be applied to social issues to improve human lives. Therefore we define service design as an intentional application of user research and the design process to connect the concrete of ‘what is’ to the intangible of ‘what might be’ to co-create better service experiences for the stakeholders of that service.

During the research for this project it was evident that the form of the visual methods used was crucial to stakeholder engagement and it is this aspect of the project this paper is concerned with. The structure of the research from the initial contextual stage through to the use of generative methods conformed to the models typically outlined in the literature on human-centred and service design approaches (see Stickdorn & Schneider, 2011; Sanders & Stappers, 2012). The research itself commenced with a contextual inquiry through a review of literature on aged care as well as initial ad libitum observations of and semi structured interviews with stakeholders within the aged care provider. This research identified a silo mentality between the provider's Sydney head office and the local office that was manifest in poor communications to the families of newly admitted residents about the financial implications of residency thus creating undue anxiety at an already stressful time in their lives. Once this issue had been identified generative research was conducted, through a series of participatory workshops with the stakeholders in the aged care provider, with a view to co-creating a solution to the problem. The workshops empowered participants to be creative and used elements of role-play to explore and explain multiple stakeholder perspectives (Johnson, 2003). Through them deeper insight into the experiences of new clients and the service provided by the facility's staff was developed. At the outset, there was no concrete vision of what the project outcome would be as that would be determined through the research and co-creation process.

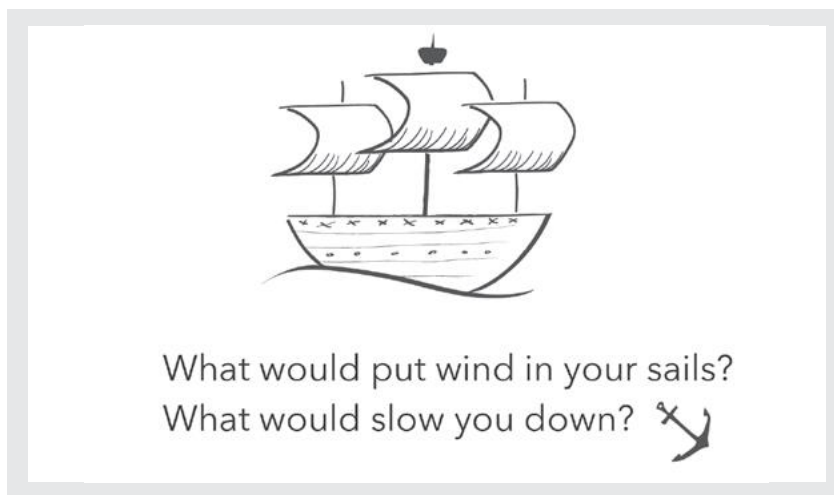
## The Aesthetics of the Immaterial

At the conclusion of the contextual interviews two visual tasks were tested to generate specific insight about how the employee stakeholders viewed their role within the organisation. The decision to do this was informed by Kirkley, et al's., (2011) view on the importance of organisational culture on person-centred care. Likewise, Dishman (2003) and

Van Oosterom (2011) encourage an understanding of the social system around the user to better understand what drives their behaviour. The first task (Figure 1) initially confused participants as they were unfamiliar with this form of matrix mapping so it was successfully simplified (Figure 2) to resemble the more familiar Likert scale. The second task (Figure 3) sought to allow staff to identify up to six key issues affecting their work, positive and negative, in response to two questions relating to the visual metaphor of a boat. As the metaphor didn't hold meaning for the participants this task also caused confusion. To develop a visual metaphor that was native to the participants they were asked how they travelled to work and what might make the trip unpleasantly longer. A stop-start, standing-room-only train trip became a participant-generated metaphor for incomplete paperwork disrupting workflow and impacting the organisation's income. This journey metaphor became central to the subsequent research process. What is significant about these early visual methods is that their visual form did not resonate with the lived experience of the stakeholders and needed to be modified to do so. This suggested early in the research that the aesthetics of the methods were important to get engagement from stakeholders and informed subsequent decisions about the nature of the methods used.

Figure 1 – Matrix map.

### Figure 2 – Likert Scale



**Figure 3 – Visual metaphor**

The data from the contextual research existed mainly in written form and needed to be analysed in order to develop clear insight into stakeholder concerns. In human centred design research this is often done through the use of the technique known as either affinity mapping (Sanders & Stappers, 2012) or affinity diagramming (Hanington & Martin, 2012). This usually takes the form of a wall covered in sticky notes that have key themes from the research written on them, grouped into categories based upon their affinity to each other. Hanington & Martin (2012) recommend an inductive approach to mapping as it allows a broader narrative to emerge than if the categories are predetermined. Thus the written data was broken down into smaller insights, written onto sticky notes, and grouped into themes as they emerged (Figure 4). These were also aligned to the sequencing principle of service design outlined by Stickdorn (2011). The sequence of events that occurs around admission, the service journey, was written across the top of a large sheet of paper stuck to the wall and these general themes were located on that timeline. Furthermore, each separate data source was allocated a different colour sticky note identifying the insights and highlighted areas of overlap between stakeholders. The analysis of this data was not unlike a ‘join the dots drawing’ but without the numbers as it involved stepping back and looking for the almost invisible connections between insights and stakeholders. In this way affinity mapping becomes an act of co-creation through a reflective conversation in action, as per Donald Schon (1983), between the voice of the participants, as embodied in the sticky notes, and the embodied actions of the researcher categorising key thematics.



focuses on selected details represented and then invests themselves into the empty spaces. In this way the viewer arrives at their own understanding of the intended meaning of the image through the imaginative interplay of what is represented and their investment in that empty space. In one of the rare papers discussing the aesthetic dimensions of the visual methods used in service design Diana et al., (2009) argue that on the scale of iconicity (Figure 5) the more abstract an image, such as a cartoon, the more space there is “for imagination to work” (2009, p.3) whereas the more realistic an image, such as a photograph, the more it resembles a specified concrete reality less amenable to imaginative acts. This impact of photographic imagery in the early stages of design research is also borne out in the empirical research of Cheng, Mugge, & Schoormans (2014) that demonstrates they constrain acts of imagination. To facilitate acts of imagination and empathy through the service experience map (Figure 6) the visual language developed was based upon simplified cartoon like imagery. McCloud (1993) argues that cartoon images guide viewers into acts of pretending as they give life to the image and start to see the journey through the experience of another. This has parallels in the participatory method of informance (the portmanteau word of informed performance) that involves conscious acts of pretending to see the world through the eyes of someone else and develop empathy (Johnson, 2003). DeAngelus & Pelz (2009) found that the gaze of the viewers of an image is initially drawn to faces and the percentage of time spent viewing faces was significantly higher than other areas of the image. Given this the decision was made to design a wide range of facial expressions for the cartoons used in the journey map to communicate the most variety of visual information (Figure 7).

Abstract ----- Realism  
Iconicity

Figure 5 – Iconicity scale

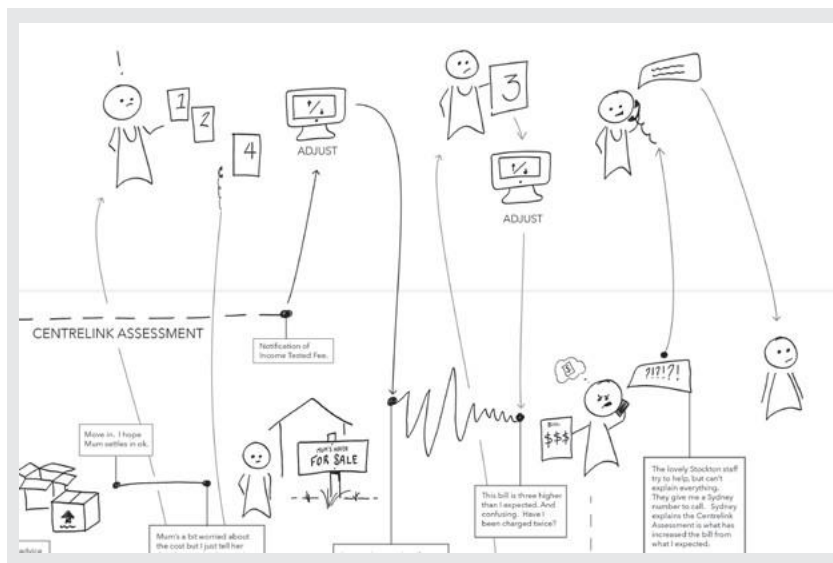


Figure 6 – Service experience map



Figure 7 – Facial expression, poses and props



The literature on participatory and co-creative design processes generally agrees on the premise that creativity is not a mysterious talent, but the process of being able to recognise and communicate ideas (Stickdorn & Schneider, 2011; Sanders & Stappers, 2012). Furthermore, it generally agrees that all stakeholders involved in the situation being explored should be involved in the design process and contribute their creativity and unique expertise to the process. Accordingly, the next phase of the research involved the service experience map being used as a participatory and generative method to co-create a shared vision of the service experience and develop a sense of improvements that could be made. The co-creative aspect of this stage also drove the aesthetic of the map and figures. Sanders & Stappers (2012) note that if the generative materials appear more polished, participants are less likely to interact with or alter them. Therefore the visual language of the map needed to walk a line between being visually coherent while inviting for participants to alter it. Hand-drawn cartoon images rather than polished vector versions were chosen as the aesthetic as including visual evidence of the almost invisible human behind the cartoons (Luckman, 2013) aligned with the idea of not being too polished. For this next stage the two key staff involved in the service journey participated in a workshop to refine the draft service map that used the earlier established metaphor of 'the journey' as its organising principle. They were asked to explore the draft service journey map on their own, and use sticky notes to mark any changes, questions or errors on it (Figure 8). Each participant was given two sets of three stickers - yellow to indicate a good experience, and red for painful one. The participants used all their red stickers, but struggled to use more than one of the yellow indicating the service experience was less than desirable.

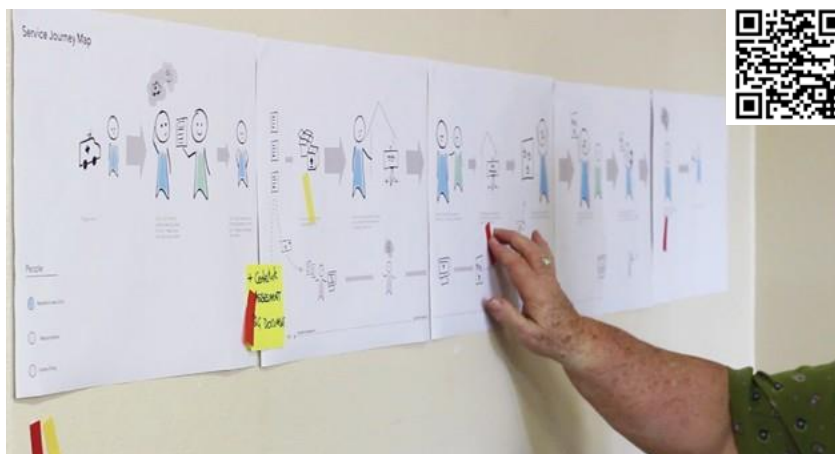


Figure 8 – Draft service journey map

The next stage of this workshop involved the participants creating physical artefacts (Sanders & Stappers, 2012) and using an adaptation of informance (Dishman, 2003; Johnson, 2003; Laurel, 2003) to reveal knowledge that may not have been made explicit during interviews, observation, or the first phase of the workshop. Each participant was provided with a black felt board as a stage, access to LEGO mini-figures and various craft materials to create props with and were instructed to select one of the yellow or red experiences to recreate and role-play using the mini-figures as the actors (Figures 9-10). Both participants selected the 'Moving In' experience of service users. Despite both stating they were not creative, demonstrating unease with the requirements of the task, the use of toys and playful materials prompted a moment of delight at the outset. After discovering a LEGO mini-figure that reminded them of their CEO, they spent some time smiling and looking for other mini-figures to represent other executives thus providing them momentum and confidence in the task. Apart from LEGO being a familiar toy, and likely connecting to participants' prior experiences, LEGO figurines themselves are cartoon-like 3 dimensional figures and provide a similar level of imaginative space to that of cartoons, again indicating that the aesthetic of



the method is significant to the process of research and what is learned through it. Through observation and discussion during both stages of the workshop it was revealed that the quantity of paperwork dominates ‘Moving In’ - both participants created miniature forms or tall piles of paper for the LEGO actors to hold - and local administrative staff offered an almost concierge-like introduction to new residents. The next iteration of the service journey map was therefore refined on this basis to ensure it communicated that understanding. The aesthetics of the final outcomes were also based upon the style developed through the research process described above as these were felt to resonate with the stakeholders in the facility, as observed in the workshops (Figure 11). Those observations confirmed to us that the aesthetics of the visual research methods are significant in stakeholder engagement and should always be considered in human centered design approaches for they are never neutral.



Figure 9 – Figure and prop kit



Figure 10 – Figure and prop kit in use

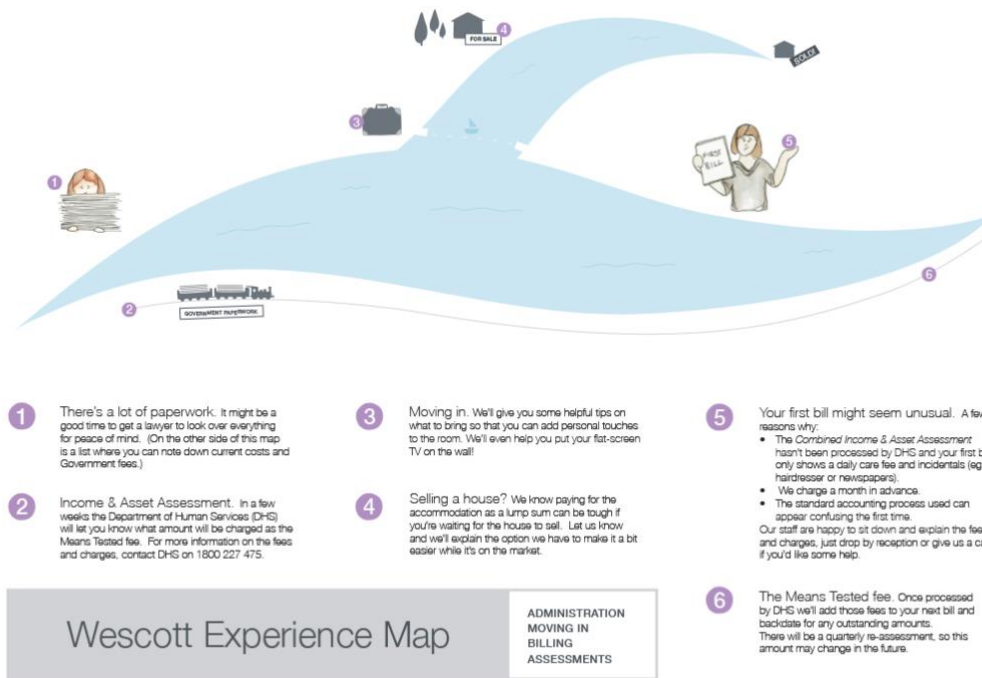


Figure 11 – Final service journey map

## Conclusion: User Centered Visual Design or Visual User Centered Design?

In contrast to the literature on the use of visual methods in design research we have argued that the aesthetic dimensions of those methods impact on the process of conducting research and the knowledge that is produced through it. Whilst that literature is less emphatic about this when it comes to the generative stages of research it is either silent on or dismissive of the role of the aesthetics of methods used during the contextual stages of research. Although the scale of the reviewed case study is modest it builds upon the nascent research into the aesthetic dimensions of design research methods and begins to build from that predominantly speculative or theoretical literature into the empirical realm. That this literature is only now emerging is simply an early sign of the maturation of the field of design research methodologies. To put this in some kind of perspective it wasn't until around the 1960s that the grip of positivism began to be loosened from the neck of anthropology, some hundred years after it emerged as a discipline, with a move to a more interpretative approach and the recognition that the nature of the methods impacted upon the conduct of research and the knowledge produced. As noted previously, Geertz (1988) called this interpretative and subjective dimension of ethnographic research the author function. Similarly, in science, stereotypically the most positivist of all disciplines, the aesthetic and subjective dimension of conducting research is discussed (Root-Bernstein, 2003) if not widely.

It is our argument that as the design profession becomes more diffuse, and increasingly concerned with designing things that are fundamentally immaterial such as services, this creates a challenge to what it means to be a designer. Simultaneously it provides opportunities for new models of practice. Visual communication has adapted once by developing a user-centered research approach, using visual methods, to designing visual communication outcomes and artefacts. What we are advocating is a slightly different orientation - taking a visual communication approach, using user-centered visual methods, to design service experiences. We make the argument that as a discipline it is particularly well

placed to take advantage of these opportunities by drawing on its capacity to skillfully tell stories of human experience through appropriate and well considered visuals throughout the entire design process through a consideration of what Roxburgh (2010a) calls “the aesthetics of research” (p. 438).

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# Bodystorming: lessons learnt from its use on a service design undergraduate discipline

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## Abstract

This article explores the use of Bodystorming on the classroom, presenting the results of a case study on a discipline carried out at Federal University of Paraná, Brazil. Bodystorming could be defined as a technique wherein designers and other stakeholders use their bodily expression to create or represent ideas about the interactions and configurations around a given experience. The paper compares this case study with key guidelines and heuristics identified on the literature, pointing suggestions for other lecturers interested on adopting the tool on the classroom.

**KEYWORDS:** bodystorming, service design, teaching, creativity

## Introduction

“Infusing creativity and arts into service innovation” processes are one of the research priorities that have the potential to advance the service field and benefit customers, organizations, and society (OSTROM et al., 2010). On this matter, Service Design can benefit from the adaptation of existing creativity methods and tools derived from conventional product and graphical design. However, in many situations these tools are not capable to deal with the multiple, and often simultaneous, interactions that occur throughout a service and the complexity of bringing together, on an empathic fashion, the perspectives from various stakeholders. Bodystorming is a tool that seems to be adequate to such characteristics and it is the focus of the current paper. Thereby the focus of the current paper is about a case of an application of the bodystorming tool by undergraduate Design students, during an optional subject of Service Design at the Federal University of Paraná - Brazil.

Besides of Design, Bodystorming has been applied in other fields of knowledge. Oulasvirta et al. (2003) has adopted the tool on ubiquitous computing where they claim that the tool enabled a more accurate understanding of contextual factors such as the physical, social, interactional and psychological that are not readily observable. In the biology field Flynk & Odde (2012) have sought to understand cellular and molecular processes, using bodystorming with human ‘movers’ acting as molecules that diffuse, undergo reactions, and



generate/absorb forces. From a Design perspective the tool has been explored at the Design & Sustainability Research Group of Federal University of Paraná (NDS/UFPR) through industry-led research projects on Product-Service System (PSS) as well as on undergraduate disciplines on Service Design.

Life Cycle Design (LCD) was the initial research focus of NDS/UFPR on its foundation in 2003. However, although LCD is still on the research agenda, such focus showed to be insufficient to tackle the need for develop solutions that could contribute to shift fast growing consumption in the Brazilian booming economy towards more sustainable patterns. The challenge of developing truly effective solutions demanded new concepts, methods and tools that could deal with the complexity of systemic innovations required by sustainable development. Based on the results of a literature review and on some preliminary pilot studies developed within an academic setting, the research team concluded that the body of knowledge around the theme of PSS presented the best prospect and such premise has resulted on the introduction of PSS as the main research topic at NDS/UFPR ever since.

More recently NDS/UFPR initiatives on the topic have been carried out within the LeNS (Learning Network on Sustainability). Currently the network has an EU-supported (ERASMUS+) project involving 36 universities from Europe, Asia, Africa, South America and Central America, aiming at the promotion of a new generation of designers (and design educators) capable to effectively contribute to the transition towards a sustainable society for all. LeNSin ambitions to improve the internationalisation, intercultural cross-fertilisation and accessibility of higher education on Design for Sustainability (DfS). The project focuses on Sustainable Product-Service Systems (S.PSS) and Distributed Economies (DE) – considering both as promising models to couple environmental protection with social equity, cohesion and economic prosperity – applied in different contexts around the world. LeNSin connects a multi-polar network of Higher Education Institutions adopting and promoting a learning-by-sharing knowledge generation and dissemination, with an open and copy left ethos.

Halen, Vezzoli & Wimmer (2005) provided the initial methodological framework adopted at NDS/UFPR, with the integration or other approaches, methods and tools throughout the years in order to cope with the peculiarities of an emerging context. One of the rich sources of knowledge expansion was identified on the bridge between the PSS research community and the Service Design research community, particularly regarding methods and tools. The Service Design research community presented a broader range of Ideation tools that could contribute directly to the PSS research community. Bodystorming is one of such Ideation tools that is further explored on this paper.

## Understanding Bodystorming

### Definition

Bodystorming could be defined as a technique wherein designers and other stakeholders use their bodily expression to create or represent ideas about the interactions and configurations around a given experience. This tool enables a better understanding about the relevance, main requirements and adequate configuration of a service by means of an empathic approach, allowing the designer to put him/herself on the role of the other stakeholders. According to Simsarian (2003), this group practice can be a complementary to the design techniques that are more usual because it could provide an additional team dynamics and insight that can bring the process to another level.

The term “bodystorming” was first coined by Burns et al (1994) while designing a computer workstation for a hairdresser who insisted that a computer “would not help her to run her

business”. In order to tackle the need for more empathy the design team produced an acting performance around low-fidelity mock-up. Based on that study Burns et al. (1994) presented bodystorming as an approach to explore ideas through a technique called “informance design”, where ideas are explored through improvisational acting. Later Burns et al (2002) defined bodystorming as “re-enacting everyday people” performances and living with data in embodied ways by performance and improvisation”. The technique allowed real situations to be simulated by real people, involving stakeholders in the process. In this way, the application of bodystorming allowed both the evaluation of human reactions in a design process, and an actuation of real experience to the designers involved.

There are some techniques to prototype design services, the Bodystorming is one of them. For Plattner (2010), the prototype is made to think and solve problems, communicate, start a dialogue, test possibilities and manage the process of building solutions. This phase can be characterized by the generation of artefacts, systems or services with the intention of enabling the interaction of the designer in order to experience the applicability of alternatives that lead to the final solution. According to Blomkvist (2011), into the Design world, prototyping has been used in many different contexts and disciplines because it is commonly believed that it can benefit the design process since clients and other stakeholders can understand the progression of different activities in the project. The tangible things, such as scenarios, provide security for the stakeholders and allow them to collaborate and evaluate the design suggestions. Modifying it as a very important tool into the Service Design world. Therefore, any prototype can be a service prototype if it is tested in the intended “place, situation and condition”.

A Service can be seen as a journey where customers can interact with the service provider in many ways as through conversations, webpage, phone call, service scenarios, and etc. Blomkvist (2011) affirms that these interactions can turn into something tangible (visible in the surface) that can improve the service experiences across these touchpoints and services moments, across physical spaces and social interactions. Hence, Bodystorming can be a technique that could help in the ideation, creation and prototyping phases.

In this context Bodystorming can be seen both as “design in place”, with creativity performed at the site; a “prototype in place”, with an emphasis on the representation of the interactions on the system; or as a “embodied performance” where prototyping happens on a location with actors taking on roles on the activity (SCHLEICHER et al., 2010). Therefore, this tool can be seen both as a tool to generate creative ideas as well as a data collection tool to understand stakeholder’s needs, system constraints and requirements for key touchpoints within a service (SMITH, 2014).

Specifically, the fidelity level encompasses visual physical aspects, interaction behaviours, navigation flow, and other aspects of the user experience that reflect the content and scenario for prototyping. Therefore, it is possible that a prototype has varying levels of fidelity for the different contents of the prototype scenario. By deliberately making some high-fidelity elements, the audience is more able to focus on the items of superior fidelity, giving them an uneven weight and thus the main focus. In this way, prototyping can reveal major problems (ARNOWITZ, J; ARENT, M; BERGER, 2010). Therefore, it is best to start early before it is too late, in a prototyping service even if low fidelity can demonstrate failures in the interaction between the actors and users of the system, allowing adjustments in prototyping of less fidelity and later, if necessary prototyping scenarios of greater fidelity.

## Advantages

This tool calls for a higher level of empathy, enabling the designer to take the role of other stakeholders. Indeed, designers acting as if they were the client/users, or showing how their concept would behave, allows them to understand options and issues that arise from their bodily and felt experience (SEGURA & VIDAL, 2016). On a similar way Smith (2014) argues that this technique uses forms of performance and improvisation to help designers become more aware of contextual issues that may not be revealed in traditional

brainstorming exercises. Mehto et al. (2006) argue that bodystorming can be used in working with data in embodied ways that is, representing the actual participants in the process.

Therefore, one of its advantages is the possibility of immediate feedback about how a particular idea would fit the target context (SEGURA & VIDAL, 2016). On a similar way Lane (2003) argues that it enables the designer to rapidly access the qualities of his/her ideas, as well as the identification of key issues for further exploration by more traditional approaches (LANE, 2003; FLINK & ODDE, 2012).

Using an embodied approach to represent ideas increases the efficiency and efficacy of the ideation process. Aligned to pro-service prototypes arguments, Oulavirta et al., (2003) argues that many potentially important aspects that are omitted from documents may be directly observable in a bodystorming session and erroneous conceptions may be identified and rejected. Since it produces embodied sketches, it carries a fundamental attribute of a sketch which is the capacity of providing immediate feedback to the designer and as such, it can be a “catalyst to stimulate new and different interpretations” (BUXTON, 2007).

Under the perspective of bodystorming as a creative tool, perhaps one of its greatest advantages is the fact that it brings into the ideation activities a great ally of creative thinking: play and playfulness. Play comes into place when exploring new ideas, embracing divergent and lateral thinking; enabling hands-on experience on building up the set for representing ideas; using role play to stimulate the designer to put him/herself on the stakeholders perspective (BROWN, 2009; SEGURA & VIDAL, 2016).

## Research Method

The research attempted to answer the question “*what would be the protocol for adopting bodystorming within the classroom of an undergraduate discipline?*” A broad literature search on various platforms using the keyword “bodystorming” has shown only 50 peer reviewed papers published in journals since 1984, of which a total of 20 papers have been published in the period between 2015 and 2017. The scope of these journals testify the multidisciplinary nature of the theme, ranging from ergonomics (Applied Ergonomics, Cognitive Processing), computing (Computers in Industry, Digital Creativity, Future Internet, Interacting With Computers, Personal And Ubiquitous Computing, Procedia Computer Science, Simulation & Gaming), HCI ( Interactions, International Journal of Mobile Human Computer Interaction, Journal of Ambient Intelligence and Humanized Computing) and natural sciences (Physical Biology, Science Scope, Trends in Cell Biology). Hence the conclusion from this review is that the theme of Bodystorming is still on an exploratory stage on the evolution of knowledge.

The study adopted a Case Study research method to investigate the research problem, focusing on the direct observation of Bodystorming within an undergraduate discipline. The overall sequence of activities on this discipline was previously planned by the main author, based on the experience of previous pilot courses of the LeNS (Learning Network on Sustainability). The data collection consisted on direct observations, video-recording and gathering of documents produced by the students prior, during and after the Bodystorming session. The results were confronted with the propositions obtained from the literature review, enabling the development of key guidelines for lecturers that do intend to bring this tool to the classroom.

## Results and Analysis

### Overview

The Case Study was developed within an intensive two weeks discipline (30 hours), as part of an initiative of the Learning Network on Sustainability. For the period between 2015 and 2019 this network has got funding from the Erasmus+ Programme to implement an action plan on curriculum development aimed at promoting a new generation of designers (and design educators and researchers) capable of DfS focused on S.PSS (Sustainable Product-Service Systems) applied to DE (Distributed Economy).

This discipline occurred between 16th and 27th October 2017 at the Design Undergraduate Course of Paraná Federal University. Based on the experience of previous pilot courses developed in Mexico, South Africa, China, India and Brazil, within the LeNS partners, the syllabus for this discipline focused on a selection of key tools that could enable the students to have an introduction on the process of designing Product-Service Systems.

The didactic approach was heavily practice-based. All theoretical contents, including the theory of Bodystorming was previously made available on the LeNS platform ([lens-brazil.org](http://lens-brazil.org)). It included slide with audio/video classes using the Camtasia® software, case studies, links to videos on the web, templates of tools and textbooks. Most classes began with a discussion with students to solve doubts regarding the theory of the theme of the day. This discussion was then followed by a period of practice and, at the end of each day, students were requested to present the evolution of their work through pitch presentations or open discussions (Figure 01).

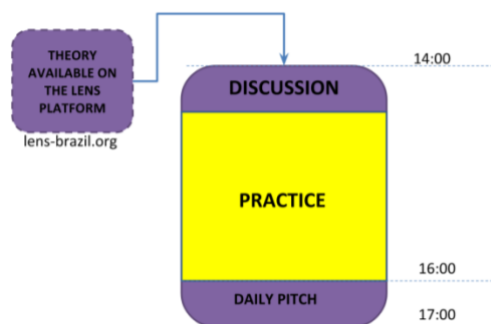


Figure 1 – Daily teaching routine

A total of twenty students have enrolled on the discipline, most of them from third and fourth year of UFPR's Product Design undergraduate course. The challenge presented to the students was open: proposition of innovative and sustainable solutions for people on wheelchair living on the city of Curitiba. Students were divided in four groups, which should choose a specific and relevant problem within the target public.

As the figure has shown (Figure 2) the use of Bodystorming occurred halfway on the discipline. The preparation to get to the ideation phase involved a general introduction to the foundations of Product-Service Systems and Distributed Economy; the development of Personas based on demographic data and the literature; the development of a System Map representing the existing situation, with the identification of all key stakeholders and their main flows (information, material, finances, work); the development of a Blueprint that represent the status quo of the existing situation, including current user activities, the main touchpoints as well as on-stage, backstage and supporting services; the environmental, social and economic assessment of the existing system using the heuristics of the Sustainable Design Orienting Toolkit (SDO). By then the students should have an initial ideal about the "unit of satisfaction" of their intended system or, in other words, the central value that should be delivered to the customer.



Figure 2 – General Programme of the Discipline

Bodystorming occurred on the fifth day of the course, in a second session of creativity. Before that, students had already held a first creative session of PSS and DM tools. To represent these early ideas students used Lego Serious Play as a tool for creativity. In this way, the initial ideas generated in the first creative session were elaborated and staged by the students in the second creative session using bodystorming as a tool. The lecturer requested that all teams revised the key aspects of the PSS concepts that derived from the previous day, including the information associated with the Personas as well as the results of their sustainability assessment through the SDO tool. Each team should choose on the on their revised blueprint of the new proposed system the vital interactions that would result on the provision of satisfaction to the customer. So, the materials for the scenes were set, as well as the scripts of what they should contain in each scene. The focus of the Bodystorming was on generating alternatives for these interactions.

### Building up empathy with the problem

Oulasvirta et al. (2003) proposes that a preliminary observation and documentation should be conducted prior a Bodystorming session, depicting interesting phenomena and easily readable design questions. Hence, producing video-personas or booklets about the context of the service/product might be a useful output of this preliminary phase (RODRIGUEZ et al, 2006).

In the first day of the course the students were presented with key information about the challenges faced by people on wheelchair in Brazil, particularly those with Spinal Muscular Atrophy. The scope of this information also included a market assessment about the range of products and services available on the Brazilian market for people on wheelchair. Besides this preliminary information, the researcher also provided contact information of a person on wheelchair that was willingly to provide further information.

Additionally, all four teams of students have developed their own desktop research, gathering key information that enabled an initial understanding on the main problems faced by people on wheelchair in Brazil. The example below shows some issues that one of the teams has identified regarding clothing provision.



Figure 3 – Example desktop research findings presented during a pitch session

Building up Personas, a System Map, a Blueprint (see image below for the team that focused on mobility for health care treatment) and assessing the existing system using the Sustainable Design Orienting Toolkit (SDO) has pushed the students to get closer to the problem.

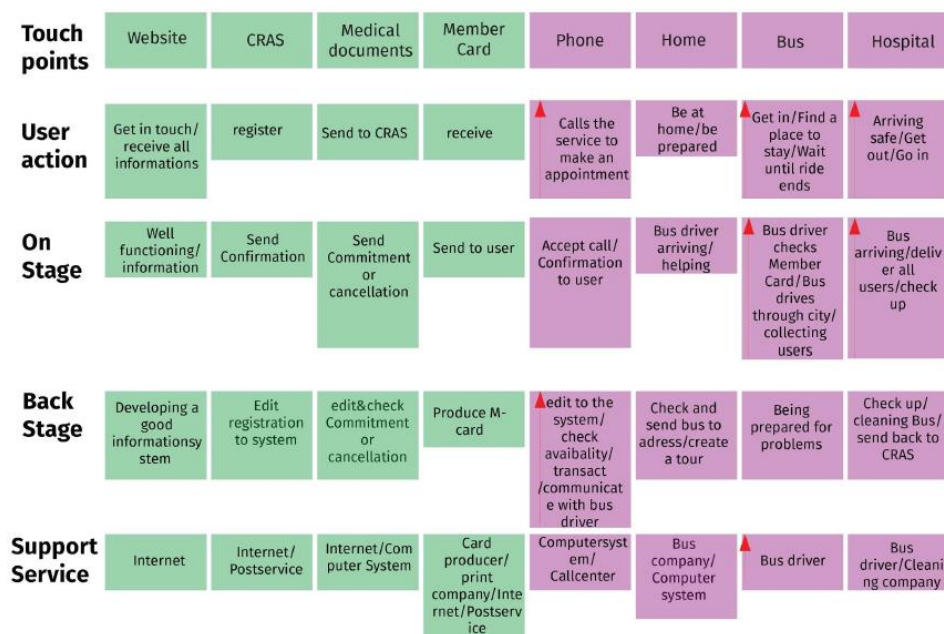


Figure 4 – Work-in-progress blueprint of the team of student that worked on health care mobility for people on wheelchair

Due to logistical constraints a visit to people on wheelchair occurred only after the Bodystorming session. Hence, further empathy with the challenge proposed by the discipline, prior to the ideation phase, relied heavily on the students own initiatives to get direct contact with people on wheelchair.

## Developing Concept Ideas Prior to the Bodystorming



The actual ideation phase has initiated with the use of the Product-Service Systems for Distributed Manufacturing Idea Generation Tool, developed by Aine Petrolaityte (PhD candidate at Brunel University) (Figure 05). This activity resulted in a series of ideas on concepts on PSS/DM and contributed to refine the “unit of satisfaction” adopted by each team of students. The concepts explored all typologies of PSS, from product-oriented, to use-oriented and result-oriented and were all oriented towards the wider concept of Distributed Economy.

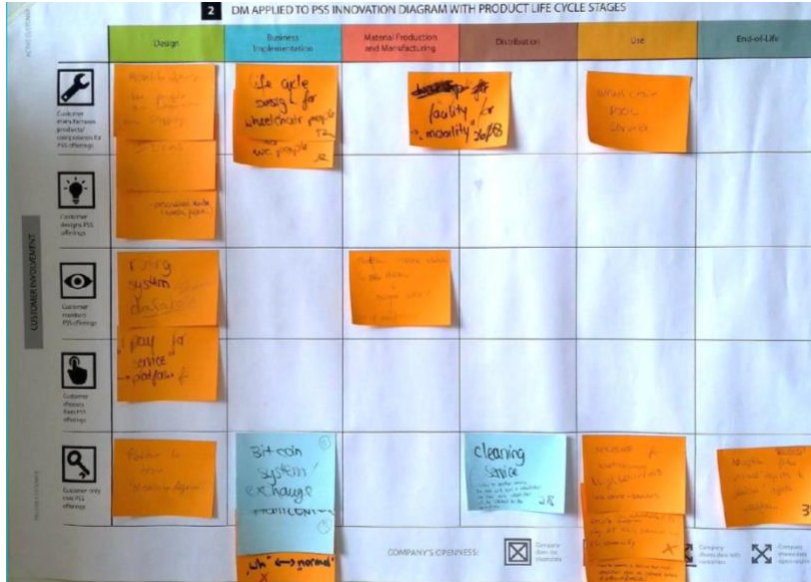


Figure 5 – Results from the Product-Service Systems for Distributed Manufacturing Idea Generation Tool

The ideation activities, prior to the Bodystorming session, also involved further development of concepts through the use of the Lego Serious Play®, as illustrated on the next image.



Figure 6 – Using Lego Serious Play® to represent key scenes of the system concepts

The tool was used in three cycles of ideation where on the first cycle the students represented three scenes of their concept; on the second cycle the teams change table and

could then intervene on each other concepts and, finally, the team would come back to their original table and develop the final proposition. Each cycle was followed by a pitch presentation with everyone able to point good aspects, flaws as well as contributions to the ideas of each team.

### The Set for the Bodystorming Session

The setting to carry out a bodystorming can range from a theatre style, relying on the imagination of the participants to fill up the missing parts, to a high-fidelity prototype, with space that resembles the real setting (SCHLEICHER et al, 2010), and, finally, to the actual setting where the service will take place (OULASVIRTA et al., 2003).

Oulasvirta et al. (2003) proposes that participants should go to an environment that has direct resemblance to the environment where the service would be implemented. They present this as brainstorming “in-the-wild,” in which designers sit and brainstorm in the same context that they design for. Smith (2014) also suggests that the environment for bodystorming might be the actual place where design interventions will be implemented, using in the activity the actual artefacts and people that would operate the service. Performing in real spaces might enhance the imagination and empathy and facilitating the communication of ideas in later stages of the design process (SMITH, 2014).

A bodystorming that uses a setting that closely represents the environment where the actual service will take place reduce the cognitive workload that would be demanded if the activities relied on the participant memory and creativity. Cues can be spread on the setting, stimulating participants to retrieve relevant personal memories, facilitating the recognition of analogies and directing attention to important features of the ideas (OULASVIRTA et al., 2003).

However, it is not uncommon that such environment is not physically accessible (ex: private homes), not cognitively accessible (requiring prolonged observation or training), not socially accessible (the actual presence of a researcher can change the studied activity) or even not ethically accessible (ex: health care center). In such cases staging might be the only option (OULASVIRTA et al, 2003) and that was the case of this didactic exercise. Students have used the classroom itself and a Photography Lab to set the stage of their Bodystorming session.



Figure 7: Bodystorming in action: creating solutions for a service directed to people on wheelchair (see video: <https://www.youtube.com/watch?v=36dC6ZZT9EA>)

Despite the precarious setting, the Bodystorming session followed Segura et al. (2016)′s proposition of principles for embodied sketching design practices:

- It employed an activity-centered approach;
- It used the physical and spatial context as a design resource;



- It used non-scripted hands-on activities, harnessing the participants' free ways of acting as a design resource;
- It used both movement and play as a method and design goal;
- It facilitated a sensitizing and design-conducive space, working at the same time towards problem understanding and a solution.

The setting for the scenes of the bodystorming session were prepared according to what was idealized in the application of Lego Serious Player. Important to emphasize that none of the students have any previous acting experience. All they have to support their embodied description of ideas were regular artefacts of a classroom and the Photography Lab such as chairs, lamps, tapes, etc (and a wig!). Despite of that high level of improvisation, the playfulness of this tool has proved to be helpful on creating a positive atmosphere with effective results on a highly inspirational ideation process.

## Conclusion

The conceptual build up that occurred through the previous days of this case study have clearly provided students with greater confidence to generate a variety of ideas, with an adequate understanding on the problem and possible scenarios for solutions. However, the literature has shown that the implementation of a bodystorming session works better when stakeholders can take an active role in the design process, extending or criticizing ideas but also proposing and bodily sketching new ideas (OULASVIRTA et al., 2003; VAN AMSTEL & GARDE, 2016). Perhaps this is the one issue that would make a great impact on the results of the Bodystorming session as the students have little or no contact with the actual everyday lives of people on wheelchair. The involvement of representative of the target public occurred only after the Bodystorming session have been developed, which was useful but less effective on supporting the ideation process.

The Bodystorming case study could also benefit from Oulasvirta et al. (2003) proposition that that one design question at a time should be given to the participants, who then attempt to represent ideas to solve the problem. Across the four case studies presented by Oulasvirta et al. (2003) the inclusion of stories from user data to accompany design questions was considered useful to increase the quality of the results.

Flynn & Odde (2012) argues that the integration of Bodystorming into our educational system is still relatively unexplored. That is certainly the current situation in the Design schools in Brazil as Service Design is relatively a new subject in most universities. The use of this tool propels the opportunity of bringing design students to collaborate with students and teachers from arts and human sciences. Future initiatives at UFPR are on the way and will explore joint initiatives with students from Theatre, Cinema, Psychology and Anthropology. Bodystorming is a handy creation tool especially when combined with other design tools. The application of bodystorming allows the designer to perceive possible flaws and make changes to the proposed ideas. Its effectiveness is related to the experience of the reality of other people, in other words, the designer through bodystorming can put itself in the role of the user in which allows a better understanding about the user needs. Thus, it is possible to perceive that bodystorming is an empathic tool. This makes bodystorming essentially useful, especially on Service Design projects, in which experiences are created. For that matter a more dedicated "service prototyping lab" could enable a higher level of proximity to the real world, contributing to enhance further the result of the creativity process obtained through Bodystorming.

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## Service design in companies

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### Abstract

Today traditional business consultancy firms are promoting their design capabilities, having spent many years acquiring and/or developing design talent. At the same time, companies are demanding design-led approach in order to deliver the right customer experience, use the massive quantity of data they are acquiring by interacting with their customers, integrate effectively new technologies, and cope with the complex evolution of their internal organization. In this scenario, service design needs to evolve and adapt by becoming more available to non-designer practitioners and building a design culture inside and outside our company at different levels, so that be fully integrated in Deloitte and deliver design-led end-to-end business transformation.

**KEYWORDS:** digital innovation, corporate professionals, end-to-end approach, design integration, spanned capabilities

### Introduction

**Digital transformation is here.** Digital transformation is the current industry watchword, as companies seek to reimagine their businesses and accomplish “digital maturity” before their competitors. Digital doesn’t mean innovation anymore: not being digital means being out of touch with the world. Service design is a natural complement to digital transformation — it helps answer the cascade of strategic choices that stem from the organization’s new ambitions: Where will we play? How will we win? What capabilities must be in place? What management systems are required? It has strong synergies with digital transformation, since it can serve as a powerful mobilizer to build the capabilities associated with digital maturity. Today our clients are demanding a design-led approach that is becoming table stakes in professional services. At the same time, as Deloitte, we’re living a significant evolution and we know that service design is just becoming an understood term of art outside of the world of design.

Companies are now taking a new look at services and a broader view of the “experience” in the search for differentiation. They interact with customers through mobile devices, telematics, IoT sensors, wearables, chatbots, virtual assistants, and crowdsourced workers, so that gather data through all these interactions and know their customers in a very granular way. Machine learning and other cognitive technologies can wrestle with this growing mass

of data and change the economics of offering an adaptive tailored experience, by collaborating with or supplementing humans. This also means a massive evolution inside companies that struggle with the complexity of their organization and redesign everything that employees operate, interact with and manage — structure, metrics, incentives, culture, processes, etc. — to deliver on the customer experience. Service design is needed to bring these new technologies into the organization in a way that is more than a bolt-on or side-of-the-desk experiment. It needs to integrate an awareness and knowledge of emerging technologies, so that it requires as much a culture change as it does new approaches. The holistic nature of service design, including the focus on the “back-stage,” plays well to Deloitte’s capabilities.

## Service design in Deloitte

The service design landscape has changed dramatically in recent years. Certainly, the last years have seen the rise of Design Thinking and similar processes which helped the big organization to increase their interest of this discipline.

Service design requires a deep understanding of the on-stage and back-stage through the eyes of different stakeholders, so that takes longer and requires a more diverse set of skills. This is not always easy as soon as time is often not long enough to investigate a problem. In a world that wants to do things quickly, service design can seem cumbersome and requires also a mindset and practices that are atypical in many parts of Deloitte today.

On the other hand, **service design itself is a discipline that needs to evolve and adapt to the needs of the client and shifting market landscape.** To be useful, it needs to become more accessible to practitioners unfamiliar with its language e.g. journeys, personas, moodboards, propositions, narratives, relationship maps, service blueprints, conceptual prototypes, mindmapping. Many service design activities overlap with traditional approaches, though they are enacted with a different mindset and set of values. In Deloitte, service design capabilities are often integrated into broader projects in the form of kickoff events, workshops, end-to-end workstreams, design sprints, education modules, or storytelling exercises.

Service designers work closely with Strategy&Advisory team to define project visions, as well as support Business Analysts to design customer experience and define technical requirements. Furthermore, service designers use methodologies as co-creation workshops not only to redesign experience touchpoints, but also to define new system capabilities (e.g. CRM) with Technology team or to create new advertising campaign with executive creative directors of Adv&Communication team.

In an environment in which design increasingly determines whether a product, solution, or business will succeed, there will be ample opportunities to assist clients in reimagining their business and **deliver design-led business transformation from end-to-end.** This means to deliver solutions that include digital strategy definition, omnichannel experiences development, user experience design, mobile/web development and solutions testing. To compete in today’s marketplace, Deloitte embeds service design into the core of the professional practice, merging design and implementation to meet the needs of digital transformation.

Many of Deloitte’s traditional competitors are now aggressively marketing their design capabilities, having spent many years acquiring and/or developing design talent. Attracting top design talent can be a challenge as these firms are not the natural go-to destination for graduates of design schools.

Deloitte has a deep pool of design practitioners and resources globally, and particularly in the larger firms and more developed markets. Relevant acquisitions made by the firm worldwide in recent years include, among others Market Gravity (UK), Mobiento (Sweden) Heat & Doblin (US).

## Develop the practice inside the organization

The future of service design as a discipline inside larger organizations like Deloitte depends on the ability to extend the reach of design, stretching practitioners to embrace a larger context, widen their overall perspective on business issues, increase their understanding of implications and long-term impacts on a project.

Innovation happens at the intersection of business (viability), design (desirability) and tech (feasibility): the best possible service experience is one that enhances business performance while delivering the best employee/customer experience. That's why service designers need to develop the ability to transform a concept/value proposition into real business value. In Deloitte hybrid profiles such as "business designers" are encouraged in their professional growth: professionals that comes from different backgrounds and acquire design methodologies.

Building a culture of design at Deloitte means to develop the practice inside and outside the organization at various levels and in different ways:

### **Fostering a global community that connects practitioners in order to create a broader design community that spans functions, practices, and member firms.**

The EMEA and the Global Service Design CoP (community of practice) are an established group of designers that comes together and interact regularly to share experiences, stories, tools, ways of addressing recurring problems, to build relationships across the member firms and enable all the participants to learn from each other.

Dedicated groups on Facebook Workplace and Yammer also work as preferred channels to share instantly updates on the results achieved, or as a quick source of knowledge exchange across the global networks.

### **Investing in designing cross-regional trainings to facilitate collaboration and skill development around service design.**

Although not everyone at Deloitte needs to be a service designer, it's key to create culture and align the working knowledge of mindsets, methodologies and tools.

Since learning service design is hands-on process Deloitte developed several internal trainings through bootcamps and events.

In Italy, a five-days Service design bootcamp developed in conjunction with the Design School/Poli.design of Polytechnic of Milan is offered.. The aim is to combine the academic approach with the working expertise to make participants understand how to use service design methodologies and tools in their daily work at Deloitte. Starting from user research activities (in field and desk) participant deep dive into the idea generation blending their different perspectives and skills. Working with an Agile approach, they then move to a hands-on prototyping session to visualize and define their service ideas: they evaluate customer experience effectiveness, along with the business feasibility and the tech development (new trends and technologies).

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# A service design experiment in the Municipality of Turin to overcome organisational silos

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## Abstract

In order to set up an experiential learning framework to support the introduction of new knowledge in the organisation and to foster cross-sectorial cooperation, in 2016-2017, in the Municipality of Turin a group of employees took part in the experimental project of co-designing a new service (To-Home).

Social integration, work integration and housing problems typically come together and affect the same families, but they are treated with separate measures by different sectors of the Municipality. The objective of the new service was thus to provide a comprehensive solution and foreseeing the identification of an external subject for a joint public-private delivery. The analysis of the experimentation shed light on a few critical issues connected with the embedding of service design in the public sector. In particular, the necessity to bridge the gap between ideation and implementation of the service and the connection between service (re)design and organisational transformation emerged as the most relevant questions.

**KEYWORDS:** public sector, service co-design, organisational change, experiential learning

## Case description

Turin is the third largest Italian city, well known in the world as the hometown of FIAT automobiles. The crisis of the automotive sector that started in 2007 led to the delocalisation of the production and to a relevant increase in the level of unemployment, which has become the biggest challenge for the city.

Under these premises, one of the objectives of the Municipality is the development of internal capacities to develop and deliver innovative services that respond to the needs of citizens affected by the crisis. As these services call for an integrated approach, the Municipality promoted a smoother cooperation among departments, with the aim of overcoming organisational silos.

The first opportunity of a real joint collaboration between the divisions was the need to design innovative services for social inclusion supported by funds coming from the central government.

Thanks to an already established relationship between the SIC (Social innovation Community) H2020 project and the Municipality of Turin, the design of the new services was conducted with the support of design researchers from the University of Bologna and the Politecnico di Milano within the SIC experimentation activities. This was an opportunity to use the service co-design process as a way to develop innovative solutions, introducing new knowledge and fostering cross-sectoral cooperation. The challenge was to combine divisions dedicated to employment, social housing, education, and support to disadvantaged families, to design an integrated service, which supports citizens and families at risk of losing their home, making them economically active.

TO-Home, the service to be designed, was meant to respond to the complex needs of vulnerable citizens at risk of eviction (families or individuals that received an eviction notice or are at risk of receiving it) due to insufficient income. The innovative feature of the service is the integration between the employment, housing and social services, which are traditionally approaching the risk of eviction with different perspectives (a labour issue vs. a housing or a social one).

The SIC experimentation allowed 20 employees from different divisions of the Municipality of Turin to take part in a design studio experience that was conducted for four months (December 2016 - March 2017) by experts/researchers in the field of service design.

To deal with the challenge, participants were engaged in a service co-design loop, structured in four phases overlapping with an experiential learning loop (Owen, 2007; Beckman & Barry, 2007): i) analysis of the problem; ii) problem reframing and envisioning of new solutions; iii) service co-design; and iv) prototyping/experimenting. The experimentation run through three phases, while the last one could not be realised, due to the fact that the Municipality was forced to externalise the implementation of the service, also for constraints bound to the use of funds provided by the central government.

The experimentation confirmed two interconnected organisational challenges: 1) how to achieve a holistic approach to service delivery by integrating services belonging to different divisions of the Municipality that affect the same citizens; and 2) how to overcome internal resistances and barriers connected with the current organisational culture and structure.

In the second phase participants were guided to the envisioning of new solutions and supported to co-design rough concepts for the new service. The final idea was a new integrated service based on a one-stop shop model and on the “housing first” principle, including and linking services previously belonging to divisions to achieve a holistic and more empathic approach improving the user experience and the efficacy and efficiency of the service.

The third phase of the experimentation was focused on the co-design of a systemic solution, moving from ideation to detailed design. The participants were guided in three different workshops through a process meant to design the fundamental components of the service through the use of diffused service design tools: personas for the users’ profile, customer journeys for the users’ experience, a system map to identify and connect the different actors and stakeholders, and a service blueprint to schematise the internal and external processes to be implemented in order to deliver the service.

The last phase of the design process (September–December 2017) included the support to prepare the tender to individualise the external partners to implement the service and the design of the service pilot. During this phase, the Municipality also identified a physical space to be refurbished, where to start experimenting the delivery of the new service, with the objective of involving 500 citizens and family units.

The implementation of the new service will be conducted by a consortium of external subjects winner of the public tender, with governance based on a quite traditional contractual relationship, in which the Municipality will monitor the service delivery and assess the results, while the private actors will actually implement and deliver the service.

## Critical issues and reflections

The analysis of the experimentation, conducted through the case-study methodology, shed light on a few critical issues connected with the embedding of service design knowledge and processes in the public sector, which are at the core of the lessons learnt.

The first issue, which clearly emerged during the design of the service, is the difficulty of the employees to assume the point of view of the end users as an alternative perspective from which to analyse the current services and design the new ones. In our perspective, the deep knowledge of the existing procedures and constraints acted as a barrier, which made the participants quite able at identifying organisational or systemic constraints (budget and other required resources, service governance, legal framework, etc.), but at the same time quite unable to find ways of spotting alternative solutions by adopting a more user centric attitude. In this respect, role-playing exercises (thinking hats, Disney creative technique) and service design tools were useful in helping them assume other perspectives, but not decisive in overcoming their organisation-centric view on services. The limited and qualitative nature of the experimentation does not offer the possibility to widely generalise the results, but they confirm the difficulty to overcome the inward-looking attitude of the public sector (Waterhouse & Lewis, 2004).

A second issue that clearly emerged, whose solution was indeed one of the objectives of the experimentation, is the employees' difficulty in overcoming internal resistance to change and barriers bound to the current organisational structure, based on a divisional model that harks back to the idea of creating efficiency through specialisation. This model is actually quite typical not only in the PA, but also in all those situations where efficiency and the exploitation of existing resources tend to prevail over exploration and the creation of new knowledge within the organisation (March, 1991). This typically leads to a low degree of flexibility, and to the creation of knowledge silos that reduce the cooperation among departments and the capacity to work in projects calling for the integration of diverse competences and points of view. In this respect, introducing service co-design processes has been a way to foster organisational transformation (Sangiorgi, 2011), combining the exploitation of internal knowledge and vertical competences with cross-sectorial cooperation. In our view, this strongly confirms the idea that the co-design approach is not only a matter of introducing a user-centred perspective, but also a wider human-centred one, which recognises the importance of employees as resources to be valorised in service design (Deserti & Rizzo, 2011).

A third issue faced during the experimentation is the difficulty of the employees to reconnect the design of the new service with its real implementation. In particular, during the design of the service blueprint we observed that the participants were unable to come out with effective solutions to four main problems, which could ultimately affect the delivery of the new service:

- how to individualise the competences of the operators that should deliver the new service;
- how to make the service visible and how to communicate it to the end users;
- how to obtain the availability of enough houses to accommodate fragile families;
- how to engage the users of the services in co-production mechanisms.

A coherent explanation of the difficulty to bridge ideation and implementation of new services could be linked with the policy - that the public sector has widely applied in Europe over the past years - of outsourcing service implementation and delivery to intermediaries. Extensive externalisation of the delivery of its services may actually prevent an organisation and its employees to learn from the interaction with users, and to better design the new services capturing factors that reside in their implementation at later stages. In our view, both to avoid this problem and to render the service co-design process effective through the involvement of all the relevant actors involved, public procurement should be redesigned. This can be done by adopting innovative and experimental public procurement processes that allow public organisation to collaborate with the whole system of actors potentially



involved in the delivery of the service, as well as with the interested stakeholders, while ensuring transparency and fairness in decision making and public expenditure.

Note:

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# The Designers Italia project - building the community of public services designers

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## Abstract

Service Design is entering the Public Sector in several ways. A year of experimentation of human-centered design for the Italian Government Digital Transformation Team is discussed here. Design has been seen as a contagious agent to inoculate Digital Transformation into complex organizations, and has attempted to reverse the design perspective: transferring power to the user and making projects more important than organizations.

The Designers Italia project was therefore born to provide guidelines, tools and a distinctive design-centred approach to the Digital Transformation Team, with the vision of building a nation-wide team of Service Designers, to develop projects in a participated, open-source way.

**KEYWORDS:** digital transformation, government, guidelines, tools

## The Digital Transformation Team and Designers Italia

Italy needs a new generation of better public services that are inclusive, easy to use and effective. The Digital Transformation Team - Italian Government - was born to build the "operating system" of the country, a series of fundamental components on top of which we can build simpler and more efficient services for the citizens, the Public Administration and businesses, through innovative digital products. The team of the Commissioner Diego Piacentini (former VP at Amazon.com in Seattle) has been created on September 16, 2016

In the design perspective, to achieve this goal and design better services, we use design system, or systemic design. This is the approach that all big companies and large

organisations use to develop services nowadays. Design is seen as a contagious agent to inoculate the digital transformation into complex organisations, transferring power to the user and making projects more important than organisations. For these reasons, the Digital Transformation Team created Designers Italia, the design system of the Italian Public Administration and a community of designers focussed on public services. A year of experimentation of human-centred design for the Italian Government Digital Transformation Team is discussed here.

## The project: disseminating a culture of design in digital services

The Designers Italia project is one of the pillars of the digital transformation strategy. The project was born to provide guidelines, tools and a distinctive design-centred approach, with the vision of building a nation-wide team of Service Designers, to develop projects in a participated, open-source way and create a bridge between digital technologies and people. The objective of Designers Italia is to disseminate a culture of design in digital services that makes the citizen the focal point, in order to save time and money for the public administration and to improve the quality of the services. The Designers Italia project creates guidelines, examples and development kits that can help all administrations in offering digital services that are easy to use for the citizens.

Furthermore, each administration can use our collaboration tools and feed the design system, providing user interface components, code and case studies. A central team coordinates the development of the design system and the creation of standards in a human-centred perspective. The platform constitutes a competence centre and a meeting point between the world of design and the public administration, spreading the design culture at all levels and helping Public Administration to engage freelance designers and design agencies in their projects.

The design kits are the best way to start using the resources of Designers Italia. Every kit provides the tools to solve a specific design problem in a way that complements the other kits and is coherent with the design guidelines of the community. The discussions on Forum Italia and the blog posts on Medium help spreading the use of the kits within the Public Administration. The kits are organised according to the purpose they serve: understanding, envisioning, and building.

The first step in the design process requires an understanding of how the users interact with the service and who are the players involved. For example, the kit includes some tools for Usability tests, that help finding how the users interact with a system. Ecosystem maps and User interview tools identify the stakeholders and their connections and analyse the users' needs. The Web analytics kit is useful in observing usage data about the service.

In a second step, the kits can help to envision the new service concept and its requirements. In particular, the Personas and User journeys tools are useful in describing the users and their needs, together with their experience with the service and the ways to improve it. User stories help describing how the service will be used in order to identify needs and features. An Information architecture kit gives all the necessary tools to create a content map, design a card sorting activity and organise content. Finally, the Co-design workshop offers some ideas on how to organize a design session.

After this preparatory work, it is possible to use the kits in the Build area to start creating the service. In particular, the UI kit can be used to create a user interface with a simple and consistent style. The Content kit contains a set of tools that streamline the creation of content through language style guides, writing templates, and suggestions for revisions. The Web toolkit simplifies the creation of websites by providing building blocks ready to use. The Wireframe kit defines an interaction model and the ways to organise the information and the content. Finally, the SEO kit allows for the creation of the website content according to the actual user needs and priorities, established from the data collected during the web searches.

The design kits are the result of a multi-disciplinary approach to design that takes advantage of the various skills available within the Digital Transformation Team. These tools have been created with a collaborative approach that is possible through digital collaboration tools like GitHub, Trello, Sketch, and Slack..

More importantly, these kits are aimed at outcomes, that is creating, redesigning and optimizing services, in a way that is scalable and efficient. The use of open formats allows everyone to easily access and contribute to the kits, encouraging the entire community to enrich the materials. Versionable systems offer a method to do this in a secure and consistent way, keeping track of all the changes. All the decisions are based on data and on tools that help ground the decisions on real needs and existing behaviours

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## *Track 2: Sharing and collaborating*

The discourse on co-created and/or co-produced collaborative services has today spread to all service-related organisations. Collaboration is a multifaceted construct that merits reflection on its actual effectiveness to generate relevant services (co-designed services), to produce implementable solutions (co-produced services) and to introduce more democratic yet effective methods of working (co-creation as a service).

This track aims to reflect on:

- collaboration as an approach to designing services: it refers to the capacity of a design process to engage stakeholders. This practice is claimed to be beneficial to the quality of the design output with regard to the user's needs and experience, the likelihood of a service being implemented, the ability of a group to work as a team.
- collaboration as a way of delivering services thanks to the participation of the beneficiary, whether user or provider. It is typical of p2p services, services in a collaborative & sharing economy and in a platform economy.
- collaboration as a way to foster a participatory mindset in society and to raise awareness about issues of public interest. As such, collaborative services can be embedded in private and public entities to bring about more democratic processes.

Finally, all forms of collaboration can benefit from digital technologies that enable otherwise impossible interactions to become key channels for co-creating and collaborating.

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## Sharing and collaborating in service design

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### Abstract

This paper introduces the track on co-created and/or co-produced collaborative services within different types of organisations, from the public realm, to the private and third sector. We navigate this wide field in the wake of three main interpretations of what collaboration may entail: collaboration as an approach to conceive services, i.e. co-design, collaboration as way in which services are implemented and delivered, i.e. co-production, and collaboration as a way to raise awareness about issues of public interest, i.e. participation and democracy. The various papers submitted to this track are clustered according to these three domains: the part on co-design explores the development of tools and the inclusion of stakeholders, the issue of co-production mainly refers to the empowerment of individuals within professional networks and local communities, while questions of democracy and power relationships highlight the importance to address in future how service design practice for sharing and collaboration intersects and contributes to a larger societal development.

**KEYWORDS:** service design, co-design, co-production, social innovation, participatory design, democracy

### Introduction

The discourse on co-created and/or co-produced collaborative services has today spread to all service-related organisations, from the public realm, to the private and third sector. Terms such as co-design and co-production have become widespread and have opened up questions related to the role of designers, the object of the design action and the relation between stakeholders and professionals as well as between the stakeholders themselves. To enter this wide debate, we propose to navigate the “sharing and collaborating” track in the wake of three main interpretations of what collaboration may entail.

Firstly, collaboration may be considered as an approach to designing services that involves engaging multiple stakeholders. Thus it entails investigating the benefits of co-design

processes in the quality of the outputs, the relationships between actors and organizations and the innovation paths enabled by such an approach.

Secondly, collaboration is connected to the way services are implemented and delivered, with particular reference to the involvement of users, and more in general of the beneficiaries, in the co-production of a service. Peer-to-peer networks, collaborative and relational services (Jegou and Manzini, 2008, Cipolla and Manzini, 2009), sharing economy and open platforms are well-known examples in which digital technologies enable otherwise impossible interactions to become key channels for co-creating and collaborating.

Thirdly, collaboration can be seen as a way to foster a participatory mindset in society and raise awareness about issues of public interest by introducing questions that relate more to the democratic nature of processes, as well as to power relationships and empowerment.

These three domains, co-design, co-production, participation and democracy, are helpful to frame such a wide concept as “sharing and collaborating”, which the service design community has extensively discussed and investigated. Having clarified our terms we shall briefly introduce an overview on the current research agenda while introducing the papers in this track.

In recent years we have observed the emergence of a multiplicity of initiatives labelled “codesign activities” that encompass private, public and third sectors. As Smith et al. (2017) argue, we are currently experiencing an “era of participation” and a “participatory culture” in which people can share their interests and concerns thanks to the rise of internet and Web 2.0 applications (Bannon and Ehn, 2012).

Numerous participatory events and programmes are organised all over the world under different names, such as codesign sessions, creative workshops, public consultations, civic hackathons etc. One reason for this is that the idea of tackling the most pressing societal challenges through collective creativity is emerging as fundamental within governments and organisations in general. The main notion at the core of codesign is that people with different voices should collaborate in the process of designing a variety of items, ranging from products to services, strategies and policies. Services in particular are “complex items that demand complex processes be tackled, processes in which it is necessary to involve a variety of players who are largely interdependent and therefore who must collaborate in order to achieve any goal” (Meroni et al., 2018).

Codesigning a service actually requires the participation of multiple and various actors from both expert and non-expert domains: they are the end-users and the stakeholders, who should collaborate in all phases and circumstances of design processes (Sanders and Stappers, 2008; Steen, 2013), from opportunity finding to prototyping, from creation to assessment, and from laboratories to the streets (Ehn, 2017). Furthermore, as Meroni and Sangiorgi (2011) argue, methods and tools from the service design discipline are particularly useful in framing interactive design processes between multiple entities. Hence, codesigning services is a progressive alignment of diverse actors and resources from the initial stage of understanding a problem to the final development phase.

In this perspective, codesign may be viewed as the first step in a more extensive collaboration process, or, as Selloni (2017) states, as an essential pre-condition to co-production, co-managing and co-governance in general. Codesign is here understood as a useful way of aligning the interests of diverse actors who are involved in a creative process, considering all participants as partners and substituting responsiveness with collaboration (Branden and Pestoff 2006). People are considered as actual resources, and their participation in codesign and co-production processes in general has great transformative potential for all the actors involved (both from the private and public realms). In this sense, codesign may be viewed as an important pre-condition to any kind of collaboration, meaning that it could work as a facilitator and as a way to prepare the ground

and prevent conflicts among actors, thus becoming a useful, iterative form of ‘reflection-in-action’ (Bannon and Ehn, 2012).

Within this framework, the shift from passive users to active contributors, from customers to co-producers lies at the basis of a widely shared definition of co-production, which points back to Ostrom’s original definition: “co-production is a process through which inputs used to produce a good or service are contributed by individuals who are not in the same organisation” (Parks et al., 1981). The connection of co-production with the public realm (Osborne et al., 2016, Pestoff, 2012) is largely discussed as a matter of improving the quality of public sector responses to citizens’ needs through the integration of users’ knowledge and competences in the delivery of services (Cahn 2008, Nesta 2012, Vorberg 2017, Boyle & Harris 2009, Nambisan & Nambisan 2013).

On the other hand, when referring to the private sector, the emergence of collaborative services, of the sharing economy paradigm (Botsman, 2013), and more in general of a ‘co-production economy’ (Von Hippel, 2005), which enables the sharing of resources (whether goods, competencies, or time), reveals both a vertical (provider-users) and a horizontal (among users themselves) collaboration trajectory (Cipolla et al. 2013), as well as a bottom-up and top-down organizational arrangement (Seravalli and Eriksen, 2017). Since they generate social relations, as well as more sustainable ways of consuming and living, these forms of sharing and collaborating have been considered as potential social innovation practices (Manzini and Stazowsky, 2013, Selloni, 2017).

Moving beyond the traditional provider-customer duality, the service design community has acknowledged the importance of analysing services from a system perspective, One where design focuses on developing both the conditions for these collaborative relationships to happen, and the flexible physical and digital platforms or “infrastructures” to be released and adapted, transformed, owned by people (Freire and Sangiorgi, 2010). Undoubtedly, technology lies at the basis of such relationships, enabling the interconnection (and often the exploitation) of existing, under-used, distributed resources, which are shared in trust-based contexts, thus innovating service delivery models.

Finally, reflecting on co-production as “making services together”, calls for further discussion, firstly, on promoting authentic reciprocity and shifting the balance of power from professionals to individuals and communities (Selloni, 2017, Boyle & Harris, 2009), and secondly, on the risks of a progressive commodification of human relationships (Seravalli and Eriksen, 2017, Thrift, 2006)

In this perspective, sharing and collaborating are also discussed in relation to their potential (and limits) when it comes to empowering citizens with possibilities to be part of, and influence, service design and delivery. Participatory cultures (Jenkins 2006) are spreading, however, as Arnstein (1969) already warned long ago, participation is not democratic per se, since it can be instrumental to empowerment as well as to logics of control and tokenism. Hence the need to carefully consider how sharing and collaboration are designed and performed.

The Participatory Design community has long been exploring how co-design processes can empower users, support dialogues between stakeholders with different interests, and provide space to marginal voices in matters that concern them (Simonsen and Robertson, 2012). This exploration has been revealing how co-design is intrinsically political, with issues of representation, power and control playing a key role in the unfolding of processes and their outcomes (Kensing and Blomberg 2008; Bratteteig and Wagner 2012).

In a broader perspective, the concepts of collaborative services (Jegou and Manzini 2008) and creative communities (Meroni, 2007) have been highlighting how sharing knowledge and resources and peer-to-peer collaboration can empower local communities to respond to their own needs, without waiting for and engaging with the public sector or the market. In a



similar way, co-production is also discussed as a matter of providing citizens with opportunities to influence processes and decision making in the public sector (Nesta 2012). However, there are also many examples that clearly show how sharing and collaborative services do not necessarily entail users' and citizens' empowerment. In the public sector, it has emerged how co-production initiatives can favour concentration of power in the hands of private actors rather than communities (Civil Exchange 2015). The notion of platform capitalism (Srnicsek 2016) refers to companies that, through the creation of (digital) platforms, enable sharing and collaboration among users for the creation of different services. Yet, users are excluded from any control over the platforms that define the conditions for sharing and collaboration, and which profit from the participants' interactions.

Questions of power and control are thus emerging forcefully in relation to sharing and collaborative services and there is a growing interest towards experimenting with logics and models that might ensure participants' control over processes and their outcomes (Benkler 2006, Bollier and Helfrich 2015, Scholz 2016). The need has also been discussed for new policies and regulations (Smorto 2015) and a new role for the public sector, which, while encouraging and enabling sharing and collaborative services, should pay attention to questions of control and power distribution in these initiatives (Bauwens 2012).

In a nutshell, sharing and collaboration can promote more democratic ways to design and deliver services. However, they can also be instrumental to logics of pure information extraction from and, exploitation of, participants by transferring responsibilities and duties to them, without providing them with increased control or influence over processes.

Service designers are thus meeting with two challenges. The first one relates to how to deal with the democratic opportunities and challenges that co-design entails. The second one is about understanding and navigating the power and control struggles that the participatory turn in the public and private sectors entails.

The 3 main themes, around which we have articulated the theoretical framework on "sharing and collaborating", are here used to reflect on the contributions proposed in the accepted papers. They introduce a discussion focused mainly on codesign tools and processes, rather than on co-production ones and issues such as participation, democracy, power and empowerment. Indeed, we expected more insights on evaluating such processes and on assessing their real impact on both short and long term perspectives, and on the phases that follow the "design before use" (Ehn, 2008).

## Codesign as a way of sharing and collaborating

The majority of the papers submitted to this track mention co-design as a way of sharing and collaborating. The notion of co-design is discussed under different perspectives and we here highlight a selection of issues mainly related to:

- the conception and application of different tools;
- the inclusion of a variety of stakeholders;
- the dark side of co-design.

### On the conception and application of different tools

Extensive reflections about co-design tools are present in numerous papers: they deal with their possible classifications, with the application of traditional service design tools within co-creation processes and their actual effectiveness, and they also discuss issues such as the tangibility or intangibility of tools.

For example, Hannula and Harviainen (2018) propose the use of design games as tools of organizational co-development: such design games can be card games, board games, or role-plays that have some physical components and their main aim is to support innovation and reflection through play. They experimented a design game named Topaasia whose application within organisations was efficient and useful, because it brought existing processes within organizations into play.

Both Auricchio et al. (2018) and Mahamuni et al. (2018) argue that traditional service design tools (persona, customer journey map, service blueprint etc.) are valuable for other professions and contexts, highlighting that, in applying this tools, it is useful to blend an agile approach, multiple iterations and stakeholder workshops.

Perez Mengual et al. (2018) analyse co-design tools in the specific environment of a Living Lab. They identify three categories of tools for visitor interaction: tools for passive integration, for reactive integration and for co-creation. They argue that an extensive repertoire of tools of reactive integration for diffident visitors already exist, while new tools need to be developed for time-sensitive visitors and enthusiasts. More in general, within co-creation spaces, it is important that each visitor follows his/her own path, encompassing multiple roles, which should not be perceived as fixed categories, but may vary. Future research should explore elements that influence the factors of time and commitment, “such as perception of time, self-assessment, prior knowledge, personal interest and even individual contextual reasons such as mood and atmosphere”.

Rygh (2018) distinguishes between intangible and tangible tools, She focuses on the latter, which are divided into generic tools (tools that lack specificity and are regarded as products for facilitators), template tools (tools that have a predefined format used as a starting point for a particular application) and contextual tools (tools that are designed specifically for a certain context or tailored for an activity). The use of tangible tools is specifically important within the service design discipline, as services are intangible by definition: these are three-dimensional cognitive scaffolds that accelerate and enable collective sense-making, triggering dialogue through the placements, movements and arrangements.

Finally, Koo and Ahn (2018), in their comparative analysis of co-design processes in the Western and South Korean context, highlight the importance of developing tools appropriate to clients’ levels of knowledge and involvement, which may vary according to the different scopes of a codesign process. They argue how service designers “need to develop co-creative tools based not on specialized methods, but rather on stakeholders’ understanding and continuous exploration of how to deliver the progress of the tool to stakeholders”.

### On the inclusion of a variety of stakeholders

The inclusion of non-design actors within co-creation processes is viewed as fundamental in numerous papers of this track: for example Mahamuni et al. (2018) highlight how design concepts generated by participatory design teams are more innovative and useful than those generated by design professionals alone, emphasising that this inclusion helps in gaining better knowledge of users’ needs and long-term benefits such as more successful innovations, higher loyalty of users and higher satisfaction of users.

Righ (2018), in analysing tangible tools to support collaboration in healthcare services, highlights how co-design for services results in a particular case of cross-organizational collaboration where the boundaries between different realms need to be overcome. She points out that co-design for services is specifically characterised by the utilization of methods and tools to gain contextual knowledge and bring actors together, which is why she focuses on the development of appropriate tangible tools to support this dialogue and enhance collaboration among different stakeholders.

Auricchio et al. (2018) state that the integration of designers with other professions to better respond to business demands is crucial and they make an original proposal of integration. From professional experience and from confrontation with students, they realized that the design world is increasingly connecting with the world of HR agencies, and, more specifically, service design and HR consultants have some competences in common. Currently, both professions are involved within strategic projects that support businesses facing change: from the design perspective, through developing new services, and from the HR consulting point of view, through enabling people to engage in change. The encounter between these two professions is still at the beginning, but it is promising and it puts collaboration at the centre of business transformation processes. In such processes, the role of designer changes, as also Muratovski (2015) argues: the designer is no longer viewed as the expert who comes out with an idea, but as a facilitator able to interact with very different stakeholders and guide them to find solutions together. According to Auricchio et al. (2018), this represents a big shift in the traditional service design activity because it implies facilitating non-designers with very different backgrounds in co-creating solutions. They highlight a lack of a specific competence in facilitation for the service designers and this is matter for further research and experimentation.

Cacciamatta et al. (2018) analyse the benefits of applying co-design tools and processes when developing a free-floating bike sharing with a traditional manufacturer company. In particular, they focus on the impact of co-design activities involving, not the end users, but rather the stakeholders, who will act as providers (the SME), and hosts of the shared mobility service (Municipality of Milan). They argue how the role of the designer evolves from facilitators of a shared process, to being enablers of a common learning process and triggers of innovations, thus reinforcing the concept of “co-design as driver of change” (Meroni and Sangiorgi, 2011). Moreover, they highlight the educational value that co-design could generate in transferring design thinking competencies and tools to companies, thus fostering collaboration among departments and introducing a service-related culture, as well as a shift towards collaborative approaches to innovation within companies.

## On the dark side of co-design

The majority of co-design activities are far from being coherent and linear processes. We noticed that in some of the papers in this track a “dark side of co-design” emerges: collaborative creative processes, especially when they include multiple and different stakeholders, are difficult and exhausting, and not always are effective. Mahamni et al. (2018) state that, even though collaboration is essential and beneficial, it often implies conflicts in the group, business functions wrangling, snail-paced decision-making and bureaucratic complications. This occurs even more when dealing with services, which are multi-dimensional, complex, intangible and heterogeneous in nature and need the participation of numerous stakeholders. The organisation and coordination of co-design processes takes a lot of time, resources and institutional commitments, and sometimes stakeholders leave the process, leading to delays in project completion. To face this challenge, Mahamni et al. (2018) suggest a “quasi-participatory” design-approach which “enables team members to work together as well as separately, to use synchronous as well as asynchronous methods, to work concurrently from multiple locations along with the flexibility of full or partial participation”.

Vink and Oertzen (2018) highlight several risks in co-design processes and, in particular, an over-reliance on empathy. As other authors state, an over-reliance on empathy can generate single-mindedness, a present-day orientation, reinforce otherness and enhance exclusion, ironically supporting designers to design for people like themselves (Abbott, 2017; Meill, 2015; Staffer, 2015; Wendt, 2017). As a possible solution, Vink and Oertzen (2018 - 22) suggest better integrating individuals with lived experience in co-creation processes. They also offer a framework “for how the processes of eliciting empathy and leveraging lived

experience can be integrated within co-creation”, highlighting several important directions for future research in this area.

There is another emerging “dark side of co-design” which arises from the reflection of Auricchio et al. (2018) about the intersection between the competencies of HR consultants and service designers. There is actually a risk that co-design processes just become team building accelerators, without achieving the main goal of the profession, which is to co-design solutions. As Selloni (2017) and Manzini (2016) also point out, this opens up the issue that co-design processes may be interpreted as mere collective performances that achieve no particular objective, actually transforming designers into moderators and entertainers of “nice events”.

## Co-producing services as sharing and collaborating

Themes related to co-production are emerging in a limited number of contributions, and mainly refer to the recognition and the empowerment of individuals within professional networks and local communities, the role of technology in supporting the sharing of resources and the growth of relationships and the nature of trust-building processes in favouring a collaborative environment.

Moving from analogy to social innovation, Carrera et al. (2018) investigate the potential of nurturing existing recovery oriented initiatives as promising practices for the re-orientation of mental healthcare provision: “*recovery* oriented and co-produced practices can favour the shift from a traditional top-down culture to a more collaborative one, with a higher level of involvement of both patients and professionals”.

Co-production is here introduced as a collaborative process, based on reciprocity and mutuality within multidisciplinary teams and considering people as “having human assets, resources and networks that go far beyond their institutional roles” (ibidem). This process of empowering people cannot omit the creation of a safe space for experimentation and change. Indeed, the authors argue how it is “only after building some evidence on co-production values and negotiating this experimentation space that the design intervention could start working on the enabling solutions” (ibidem). Finally they highlight the importance of developing dedicated co-design tools to sustain such processes.

The involvement of users’ knowledge and resources as fundamental ingredients of the co-production of services is discussed also in terms of the capacity to generate streams of data, in both an active and passive ways. In his paper, Park (2018) introduces the process of map-making as a co-production activity that can lead to the generation of innovative collaborative services. By presenting a case study developed in response to a call of the Transport for London, Park investigates how the collection, integration and use of users’ data can enable the ideation of innovative services aimed to reduce urban pollution and improve the efficiency in taxi transportation. Within this framework, citizens are increasingly shifting their role from passive users of cartography to generators of datasets and ultimately to co-producers of maps, by voluntary knowledge-sharing at a hyperlocal scale. Maps have therefore the potential to become a participative service platform, facilitating the collaboration of multiple stakeholders, who co-exist and live the urban scale and can benefit from a co-design approach.

On the transformative potential that technology may have within the sharing and collaborating framework, Overkamp et al. (2018) investigate “potential effects of technology introduction on value co-creation from a multi-actor perspective prior to the deployment of technology”. Based on the discussion of two illustrative cases, the authors provide five contextual factors that function as guidelines to assess transferability of research knowledge to, from or between projects. Moreover they suggest that “vocabulary for roles and role change from Role Theory literature helps researchers and designers to articulate and make

sense of what service actors anticipate as effects of technology deployment on value co-creation” (ibidem).

A second area of investigation and discussion is related to the concepts of collaborative and relational services, where the latter are defined as “an emerging new service model, deeply and profoundly based on the quality of interpersonal relations between participants” (Cipolla and Manzini, 2009). These peculiar forms of service are discussed in relation to the potential of the design discipline to create the conditions that favour the blurring of traditional roles, empowering users to become co-producers and to sustain collaborative systems, which nurture personal relationships as drivers of local change.

More specifically, Ferreira de Freitas and Cipolla (2018) investigate the mechanisms of trust building in relation to the development of an online platform, designed to be “a virtual environment for conglomerates of local networks”: a “fertile environment” where collaborative and relational qualities can develop. In analysing the process connected to peer-to-peer collaborations and resources-sharing within a neighbourhood, the authors identify three possible trust building processes: towards the platform (product-service system), towards the users (peer-to-peer) and towards the local network (neighbourhood). Moreover they discuss two main directions of trust creation and their gradual and cyclical manifestation: bottom-up participation processes, where existing interpersonal relations nurture online exchanges, and top down ones, when an online platform enables and strengthens the connections between unknown users, thus opening spaces for future research on trust-building in relational services.

Bencini et al. (2018) further discuss the contribution of co-production in nourishing and strengthening relationships at a local level and in a multi-stakeholder dimension. By introducing the notion of gifts as “devices able to propel and catalyse interpersonal relationships” (Bencini et al., 2018), the authors developed and assessed a collaborative peer-to-peer service, named Sur, which enables the creation of a complex local network composed of designers, “craft(wo)men-makers”, givers and receivers in the co-production of personalized gifts. They argue that “personal and social relations (...) always happen through mediations” (Bencini et al., 2018), which create the operational and cultural space for the designers to operate both on a tangible (the gift) and intangible (the service) dimension.

## Democracy, power and empowerment in sharing and collaborating.

Questions of democracy, power relationships and empowerment in sharing and collaboration are discussed in a limited number of papers in the track.

Carr (2018) and Schmitt-Rüth et al. (2018) focus particularly on how co-designerly approaches in service design can provide space to vulnerable groups and marginal voices in the development of new solutions and services. Both the papers focus on the design process highlighting the importance of creating and adapting tools to participants’ abilities and characteristics and of choosing settings that might put them at ease. They also stress the importance of collaborating with different professionals and integrating different forms of knowledge throughout the process. There is also attention to ethical aspects and particularly to attitudes and values that designers might need to develop in order to engage in these kinds of processes.

Salinas et al. (2018) describe how service design has been at play in a process aiming to identify opportunities for civic engagement in local decision-making processes. Here, civil servants together with design researchers have been using service design approaches to map and understand a local-council decision-making process and highlighting opportunities for civic participation in these processes.

All three papers focus very much on service design approaches, they also highlight the importance of developing alliances and strong collaborations between service designers and other professionals who might offer support in navigating specific challenges and questions related to participation.

## Final considerations and future challenges

Collaboration is a multifaceted construct that merits reflection on its actual effectiveness in generating relevant services (co-designed services), producing implementable solutions (co-produced services) and introducing more democratic yet effective methods of working (co-creation as a service).

As stated, some papers highlight the “dark side of co-design”: organising and coordinating co-design processes, especially when dealing with multiple and different stakeholders, may be very demanding compared to the quality of the outputs. The majority of papers focus on the process rather than on results, and we noticed especially a great emphasis on tools, which, in some cases, is very sophisticated but at the same time tends to lack reflection on what these tools did actually generate. We believe that, when speaking of co-design, the discussion on tools has reached a certain level of redundancy and a more balanced reflection between “process” and “results” needs to be made, especially in these times in which co-design activities are popping up all over the world under various labels.

However, as Meroni et. al (2018) state, despite the entanglement of collaborative design processes, the design of complex socio-technical artefacts, such as services, calls for engagement and participation. Manzini (2016) states that “co-design is a complex, contradictory, sometimes antagonistic process, in which different stakeholders (design experts included) propose their specific skills and culture. It is a social conversation in which everybody is allowed to bring ideas and take action, even though these ideas and actions could, at times, generate problems and tensions (p. 58)”. Here, Manzini identifies a co-design space that reflects the increasing complexity of service design, which deals with value constellations and service ecosystems characterised by multi-player networks, largely interdependent but collaborating out of need (Sangiorgi et al., 2017).

This is why it is important to research into a co-design approach that could become a standard for most services and might help organisations to develop the social infrastructures that empower individuals to creatively and continuously support each other and take projects forward (van der Bijl-Brouwer, 2017). It is not by chance that Meroni et. al (2018) talk about “massive codesign processes (...) which are likely to become the new standard in improving results and which will, hopefully, increase the level of transparency, accountability and democracy of today’s (service) design projects”.

In this perspective, sharing and collaborating when it comes to stakeholder involvement in the co-production of services has been investigated mainly according to the relational qualities that could both reinforce and be nourished by collaborative services, and to the value that is co-produced and that unfolds more in the long-term perspective than in immediate results. A deeper and more extended reflection on the impacts of such processes is needed, especially if we consider that most of the papers investigate projects mainly focusing on what Ehn (2008) defines as “design before use”, which extends to include the start-up phase of a service. They do not, however, cover a longer period of time, when co-producers are independently running, managing and hypothetically adapting a collaborative service. Observation should therefore also move on to a more mature generation of services, which should comprise a propedeutical codesign phase, in order to consider the real transformative potential of co-production on sustainable service models and stakeholders relationships.

A further consideration takes into account the role of ICT and, in wider terms, of technology as enabler or barrier to co-production, and as a support to the transformative potential of this kind of process. Within the track, very few papers have discussed such a topic, and mainly in terms of online peer-to-peer platforms, opening space for further discussion on the role of technologies in empowering people in co-designing, delivering and managing services and on the conditions that enable an effective and long-lasting collaborative approach.

Finally, as regards users as co-producers, there is an initial tentative to discuss the recognition of vulnerable groups of users in contributing to the production of services. The paths for their involvement and empowerment challenge designers to both adapt tools and processes, but also to be able to identify unusual and marginal stakeholders. This strictly connects with issues of social inclusion, democracy and participation.

As already pointed out, questions of democracy, representation and empowerment are only marginally discussed among the papers in the track. Where they are considered, these questions are particularly discussed in relation to two focuses. The first one regards service designers and their own practice and it entails a reflection about how service design processes can be adapted and further developed to focus on the involvement (and empowerment) of participants and, particularly, of weaker stakeholders. The second focus regards the possible role of service design in the growing interest towards co-production in the public sector. Particularly, the reflection is on how service design could support civil servants and other professionals in dealing with sharing and collaboration, by providing both practical approaches and formats that support reflection on questions of participation.

The first focus points towards opportunities to reflect about democratic aspects in the service design practice. The second focus highlights the role of service design in a broader context, and it particularly opens up the question of what kind of role the service design field might play in relation to a public sector that is increasingly interested in and working with sharing and collaborative approaches. Both the focuses point at how sharing and collaborative processes and services entail political questions related to representation, control and power relationships among the people involved. Thus, the question is, how the service design community might relate to and find ways to navigate these questions in its own practice and in its relationships with public and private actors.

The increase in participatory cultures is leading to the spread of collaborative and sharing processes and services in different realms. These processes and services are often framed as a matter of empowering users and citizens and providing them with new opportunities for creating their own solutions and/or firmly influencing the way services are designed and delivered. Yet, the rhetoric of democratization and empowerment are often contradicted by the reality of these services and processes, which, instead, are often presenting issues of representation, control and power.

Within the service design community, there is a preliminary understanding and interest towards how it might be possible to create more inclusive and democratic design processes through collaboration and sharing, as well as supporting reflection and discussions in relation to questions of decision making and control in sharing and collaborative initiatives. Yet, these reflections are still quite marginal within our community and still focus on opportunities rather than addressing possible challenges and criticalities of dealing with processes that aim for democratization and empowerment of users and/or citizens. At the same time, as the popularity of this track showed, the service design community is increasingly interested in and working with sharing and collaboration.

Thus, we see the opportunity of developing a research agenda that aims at addressing the political concerns of sharing and collaboration. The focus would be on understanding and navigating questions of representation, control and power within service design processes characterized by sharing and collaboration. Moreover it would be important to address how

service design practice for sharing and collaboration intersects and contributes to a larger societal development.

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# Service co-design for the shared mobility sector

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## Abstract

In this paper, we present an action-research process within an Horizon 2020 project conducted through a co-design approach with the SME Zehus. In order to define a new model of free-floating bike sharing service to be implemented in the city of Milan, co-design activities were conducted with different project stakeholders and structured in the form of an explorative workshop, creative sessions, and user tests. This approach allowed envisioning and validating solutions, sharing competencies, and make decisions through collaboration in a iterative process.

The adoption of co-design had relevant influence on the design of the final solution, going beyond the users' perspective, but rather focusing on those of the service provider and the municipality of Milan, which is going to host the service. The active involvement of Zehus in co-design activities also had an educational value, given by the transfer of service design competencies and tools, which can empower the company in approaching future businesses able to answer to the evolution of shared mobility.

**KEYWORDS:** service design, co-design, organizational changes, free floating bike sharing, shared mobility

## Introduction

Among different methods that have been developed and applied over recent years in order to involve end users and other stakeholders in the design of new products, services, or public policies, co-design have been highly adopted as a way to generate innovation in a more efficient and inclusive manner (Dubois et al, 2016). It is, in fact, one of the most studied issues in design research (Brown, 2008) and it is possible to observe a big amount of literature dealing with co-design in terms of general definition and proliferation (Sanders, 2006). Co-design (Sanders and Stappers, 2008; Binder and Brandt, 2008) can have different connotations depending on the level of collaboration among the actors involved - who can vary from users, providers, employees, decision makers, design experts (Steen et al., 2011) - the scale of application - e.g. the company level or the wider urban level - and tools adopted. Moreover, co-design activities can be introduced at different steps of the design process:

- during the explorative research phase, in order to identify possible future scenarios and to deepen knowledge on users or the context at hand;
- during the ideation or development phase, in order to generate, prototype and test ideas with end users and stakeholders involved;
- and eventually during the evaluation phase of the service, in order to set up an evaluation strategy aimed at assessing values shared by the different actors of the service system (Foglieni et al., 2017).

Through co-design workshops and creative sessions, it is possible to imagine new ways of interaction, to design new products or service solutions as well as new business models, or to improve or validate existing ones (Steen et al., 2011).

The analysis of literature (Deserti and Rizzo, 2001; Dubois et al., 2016; Pirinen, 2016; Sander and Stappers, 2008; Reason et. al, 2016) highlights that co-designing with end users seems to increasingly diverge from co-designing with companies, especially in relation with tools adopted and the role of designers. According to Deserti and Rizzo (2011), one of the main difference among the two approaches lies in the goals pursued by the companies involved, which are usually focused on designing new business models and envisioning innovation as a dynamic and systemic change at each level of the organizations. Accordingly, co-designing with companies differs in the way the project is managed, since interactions occur among experts rather than final users. Co-design projects with companies, in fact, involve specialists and employees, with specific knowledge on the sector, the market, the company production processes as well as its mission and vision.

An additional aspect that differentiate co-design with a company from co-design with end users consists of the level of impact on the final solution and on the company itself. Over the past years, numerous design professionals operating in the field of service design had the opportunity to conduct projects able to stimulate and introduce changes within organizational systems. Accordingly, many researchers have been focusing on the topic and the transformative role of design has been largely investigated (Bate and Robert, 2007a, 2007b; Buchanan, 2004; Junginger, 2008; Junginger and Sangiorgi, 2009; Sangiorgi 2011; Somerville and Nino, 2007).

Literature about the topic shows that service design practitioners have been moving from providing solutions to specific problems, to providing organisations with the tools and capacities for human-centred service innovation (Junginger and Sangiorgi, 2009). According to Burns et al. (2006), there are 6 different key characteristics of service design's transformational power, that go, for example, from the formulation of the right problem and the definition of the brief, to applying participatory design techniques in order to bring together all stakeholders' ideas, expertise and knowledge, to finally creating fundamental change, as projects can initiate a lasting transformation process within a company. The transformational strength of service design constituted an important cause of reflection during the Bitride project, helping us to frame the results, even though we did not specifically direct our work towards transformational aims.

This paper focuses on a Horizon 2020 project where co-design activities with the company acquired a distinctive role.

The first part of the paper introduces the topic of shared mobility and it describes the project, called Bitride Bike Sharing, which aimed at defining a new bike sharing service model to be implemented by Zehus, a SME based in Milan. Then, the action-research methodology applied to the project is described.

The second part of the paper illustrates the co-design activities that have characterized the three phases of the project. Service design activities, in fact, were organized involving all the project stakeholders, and leveraging co-design as a facilitator of collaboration (Sanders and Stappers, 2008) between the project partners rather than with final users (Pirinen, 2016). This allowed researchers exploiting the knowledge and expertise of professionals involved, building up a collaborative setting in which they could come together and play an active role in all the phases of the process (Dubois et al., 2016). Accordingly, we present some of the first results emerging from the different phases, in particular focusing on the role of co-design in:

1. The design of the bike sharing service solution as a result of collective creativity based on the collaboration between design researchers, Zehus, project partners, and potential users selected from the stakeholders internal teams;
2. The educational value given by the transfer of design thinking competencies and tools to the company, fostering, on the one hand, collaboration within different departments of the company and facilitating, on the other hand, the shift of Zehus from being a manufacturing company to becoming a service provider.

To conclude, we formulate some considerations related to the main results of the Bitride project, describing how co-design impacted on the design of final solution and on the organizational changes related to the company's internal processes.

## Bitride Bike Sharing: an action-research approach to design a free-floating bike sharing service

In recent years, fostering sustainable urban mobility has become one of the most important challenges for big cities (Cohen and Kietzmann, 2014). In the field of shared mobility, various innovative initiatives and best practices are emerging all around the world, tailoring and scaling services according to emerging user needs, behaviours, and preferences. Zehus Srl is an Italian SME operating in the field of human-electric propelled transport vehicles that addresses the B2B market, while its marketing division FlyKly Srl is in charge of the B2C sector. The company created the brand Bitride, which aims at creating a community of urban commuters, whose mobility experiences are improved by the use of hybrid vehicles. For this reason, the bike sharing project is conducted under the Bitride brand. Prior to the starting of the Bitride project, Zehus business model focused exclusively on developing and selling the patented hybrid technology to bikes and e-bikes manufacturers, but the dynamic nature of the company allowed the shift from a product-based to a service-based model. The intuition was to exploit the potential of the hybrid technology to introduce a new bike sharing model into the urban context.

To turn this intuition into reality, Zehus participated to the Horizon 2020 program of the European Commission, including service design competencies into the project and involving the Department of Design of Politecnico di Milano. Other project partners are Labor, a research and engineering laboratory, and AMAT, the Milanese Agency for Mobility, Environment and Territory, in charge of providing strategic planning and technical studies for urban mobility.

As experts in service design and design-driven innovation, the researchers of the Design Department of Politecnico di Milano collaborated with Zehus in order to design an innovative and effective bike sharing model that takes into considerations both business and users needs, and supported them in the design of the main touchpoint of the service, the Bitride App. Among the others, the role of design researchers revolved around the organization and management of co-design activities conducted during all the phases of the project.

The methodology adopted by design researchers can be described as an action-research (Stringer, 1999) in which researchers, Zehus managers and employees, and mobility experts of the Milan municipality were involved throughout the whole process, in order to frame research questions and validate them step-by-step through experiments, prototypes, and tests.

The action-research process was structured according to the traditional phases of the service design process (Meroni and Sangiorgi, 2011; Polaine et al., 2013; Stickdorn and Schneider, 2010; Foglieni et al., 2017; Moritz, 2005; Villari, 2014), including:

- The analysis and exploration of the shared mobility context, with a particular focus on the Milanese one (research phase);

- The interpretation of the research insights and the generation of ideas useful to define the final bike sharing service concept (concept generation phase);
- Design and implementation of the service solution and the Bitride App (service development phase).

As mentioned before, co-design played a crucial role in the project. Co-design activities have been structured in the form of collaborative creative sessions (such as workshops, meetings and user tests) aimed at generating and testing solutions, sharing ideas and taking decisions through collaboration.

Going into deep, they consisted of:

- During the research phase, some co-design sessions with Zehus and AMAT were organized in order to frame the research questions and better define the focus of the research. In addition, we conducted some interviews to external experts in the field of sustainable mobility;
- During the concept generation phase, a co-design workshop and several co-design sessions were used to actively involve all the stakeholders in the project. Workshop activities were designed ad-hoc for the project and documented with pictures and reports;
- During the service development phase, some co-design sessions and user tests were run with the aim of designing and testing the first mock-up of the Bitride App. User feedbacks were registered and integrated with pre- and post-session questionnaires.

To better support the process, a design researcher daily collaborated with Zehus, in order to structure and support all the activities on spot, informally talking with employees, directly observing their daily activities and procedures, and facilitating the information exchange with key actors.

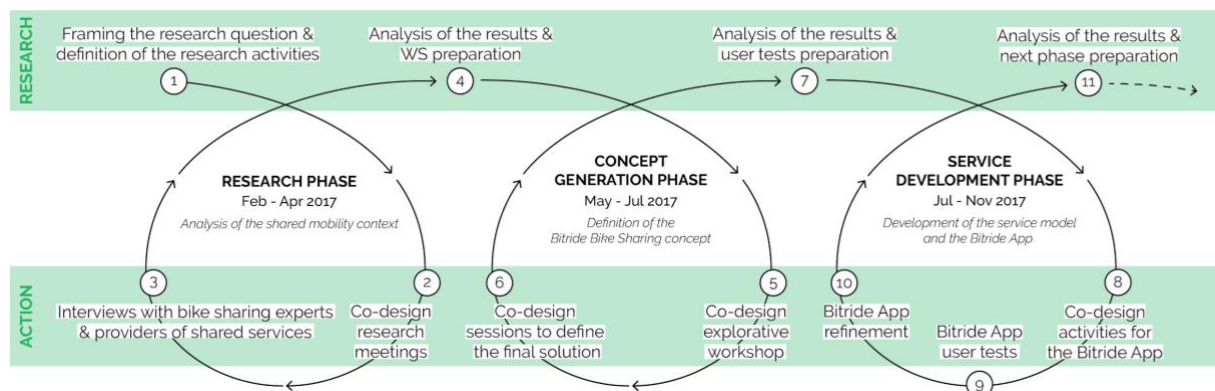


Figure 1 - The Bitride Bike Sharing action-research process

As follows, the first three steps of the action-research (Figure 1) are described, highlighting how the strong collaboration between design researchers and other project stakeholders brought to a co-designed solution and helped Zehus to start adopting the service design approach within the organization.

## Research phase

The analysis of literature on shared mobility (Li and Voegelé, 2017; Ikeda et al., 2015) conducted during the first stage of the project, helped design researchers framing the context of operation and triggered a reflection on the innovation drivers that will characterize future mobility services.

The research phase was mainly qualitative, since the purpose was to understand people, contexts, and relationships, exploring behavioural patterns of users and, at a higher scale, market and society transformations. To frame the shared mobility context in which this project is embedded, we opted for a qualitative desk analysis on mobility trends



(Osservatorio nazionale sulla sharing mobility, 2016), academic papers on mobility services (Cohen and Kietzmann, 2014; Shaheen et al., 2010), informative articles, and best practices at the national and international level.

The collaborative design activities conducted during this phase mainly consisted of some co-design meetings with the project stakeholders, in particular with Zehus employees from different internal departments (such as the management team, sales specialists and engineers) and members of AMAT. Their purpose was to share specific knowledge and expertise regarding the shared mobility sector and its emerging trends, to better define the framework of the research in the wide current panorama, and to comprehend possible opportunities and barriers for the service implementation within the Milanese context. For this purpose, the design research team opted for an explorative map, where the different research areas of investigation were identified, clustered and finally selected in collaboration with Zehus and according to the company's interests and directions. This kind of approach was fundamental to benchmark existing solutions and understand the socio-economic drivers that will characterize the field of mobility in the next future. The benchmark analysis was also supported by interviews to some worldwide providers and experts of shared services in order to comprehend the peculiar elements of contemporary models, the most challenging and critical aspects, and the most diffuse user behaviours according to the different solutions. AMAT was involved in some of the co-design sessions with the aim of providing data about mobility and vehicles sharing services in Milan and to help in understanding the sudden evolution that the city was going through, due to the introduction of two new free-floating bike sharing services in September 2017. The contribution of AMAT was key in order direct the research towards some emerging issues, such as wild parking, vandalisms phenomenon, and the lack of regulation regarding these topics, both by the municipality and the service providers.

The results of this analysis allowed identifying a design guidance and potential target users, useful to address the following steps of the process.

### Concept generation phase

The second step of the process aimed at transforming research insights and interpretations into ideas and it revolved around the organization of a co-design workshop, involving all the project stakeholders, regardless of their specific design knowledge, in an intense process of co-creation. The workshop itself has been fully co-designed, in its contents, purposes, adopted tools and structure in collaboration with Zehus, during some dedicated meetings. The workshop involved Zehus, AMAT, Labor, and few members of the Milan Municipality and ATM (Azienda Trasporti Milanesi), for a total of 17 participants (Figure 2 and 3). The purpose of this activity was to generate ideas and share opinions and competencies useful to the definition of the service concept. At this stage, the involvement of all the project actors was crucial to identify solutions that were coherent at various levels of the service system (i.e. back-office processes, customer experience, system of touchpoints).



Figure 2 - Workshop service co-design activities with the project stakeholders (1)



Figure 3 - Workshop service co-design activities with the project stakeholders (2)

To reach this objective and stimulate participation, the design research team, in agreement with Zehus, selected a list of topics on which to focus the discussion, based on the analysis of case studies previously analysed. Each topic was presented and addressed individually thanks to the use of some topics canvases and some facilitation cards reporting inspirational

questions, useful to foster the discussion and cover some of the most crucial aspects of the service. We also adopted some specific tools typically used in service design practice, elaborated on the insights emerging from the research phase, such as personas, describing behaviours and attitudes of target users, and storyboards, visualizing the service experience of these users while accessing and using the service (Figure 4).



**Figure 4 - Workshop material: personas, storyboards, topics canvases and facilitation cards**

The workshop lasted approximately 4 hours, during which the topics were deeply investigated and analysed by all participants, according to their specific expertise and experience regarding technical solutions, the shared mobility sector and the context of operation. Each group of partners was assigned with coloured post-its on which participants could report their comments and considerations. During the discussion, the design research team started clustering the comments according to their contents: some ideas suggested new possible solutions, while some comments were aiming at discarding or criticizing possible solutions.

Concepts emerging from each topic of discussion were later analyzed and clustered during a dedicated co-design meeting with Zehus management team, in order to identify key features to be embedded in the final solution and start defining the final bike sharing service concept to be further detailed in the next phase.

This allowed designing a first version of the Customer Journey Map of the overall free-floating bike sharing service, in order to visualize and detail the user experience, highlighting step-by-step all the options available to the user and the touchpoints (physical and digital) necessary to interact with the service.

### The service development phase

The third phase of the project was dedicated to the service development, and focused in particular on the design of the Bitride App as the main touchpoint for accessing and using the service. The service development activity also included detailing the service solution, in terms of back-office and front-office processes, relations occurring among stakeholders



inside and outside the provider organization, resources, competencies, and technologies required to perform the service.

Also in this phase of the project, the adoption of a collaborative approach had relevant influence on the design of the final version of the App. Several co-design meetings (Figure 5) were organized by the design research team involving two UX and UI designers, the project manager, back-end and front-end developers, and software engineers from Zehus. In this case also, the purpose was to embed the specific knowledge of different experts in designing an effective and valuable solution. Starting from a draft version of the Customer Journey Map emerged during the co-design workshop, experts began defining the information architecture and the app wireframe, in agreement with the characteristics of the service concept previously detailed.

Thanks to this approach, it was possible to share step-by-step progresses with the project stakeholders, up to the fine tuning of the proposal.



**Figure 5 - Co-design activities of the Bitride App involving service designers and UX/UI experts**

Once the wireframe was developed, the App needed to be validated before being effectively implemented. For this reason, the design research team, in collaboration with the UX experts, set up two rounds of user testing (Figure 6). The tests focused on the service conceptual model on the one hand, and the app usability (in terms of navigation system, main features flow, button labelling, and error and feedback messages) on the other hand. The two rounds involved 10 potential service users, selected according to the clusters emerging from the research, among Zehus employees and design researchers of Polimi not directly involved in the Bitride project. Based on tests' results, UX experts and design researchers integrated users' feedback in a new version of the App wireframe, ready to be implemented.



Figure 6 - User test activities of the Bitride App

### Main results of the co-design activities

Co-design activities conducted during the three phases of the Bitride project influenced in a strong way the design of the service solution and the company's internal processes.

During the research phase, one of the most relevant outcome achieved thanks to the co-design approach and the involvement of key stakeholders, was the definition of the research framework and the decision to focus on some emerging issues, generated by free-floating bike sharing services, that are currently concerning local authorities around the world: wild parking, vandalisms issues, and the impact of such services on the urban environment. The research activity, in fact, focused on the rapid growth of bike sharing services around the world, where cities' infrastructure and regulations were not prepared to handle such an overwhelming phenomenon. The constant exchange with the project partners, in particular with AMAT and the Municipality of Milan, drew attention towards the lack of regulations regarding these topics and the lack of control over where users park and how they use shared vehicles.

Accordingly, the adoption of a co-design approach favored the generation of service ideas that already embedded some critical thinking from the different perspectives of the service provider, the project stakeholders and the municipality of Milan. During the concept generation phase, and in particular during the co-design workshop, the core of the discussion revolved around how the provider could promote and encourage responsible behaviors and actions, informing users about the parking rules. The broad participation and the high engagement of the members of AMAT, the Milan Municipality and ATM, allowed the researchers to design a coherent and consistent service solution able to address this important topic. Two of the distinctive features of the Bitride Bike Sharing service are, in fact:

1. The multi-polar service area composed by several geo-fenced "virtual parking areas" where users are encouraged to park;

2. The adoption of a peer relocation approach that, thanks to a scoring system that rewards users for their active contribution to the service, is able to promote responsible and conscious behaviors.

During the service development phase, the user tests of the application represented another key moment for the co-design process. Also in this case, the iterative approach of prototyping, testing, and reviewing was experimented by Zehus for the first time. At first, this activity was not perceived by the company as strictly necessary for the overall purpose of the project, since it could have slowed down the development phase. However, the direct experience and involvement of Zehus employees during the activity, convinced the company of its value. The test, in fact, highlighted some critical aspects of the digital experience and some issues regarding the user interface, while, at the same time, it validated some of the most crucial aspects of the service conceptual model before being effectively implemented. Thus, the process helped reducing the risk of errors from both the user interface and back-end development perspectives. Thanks to the company's active involvement, prototyping the solutions at different stages of the design process was finally perceived as a strong value, not only for the Bitride project but as an internal approach from which employees will benefit in the future.

## Discussion

Reflecting on the overall design process and the adoption of co-design within the context of shared mobility, lead us to formulate some considerations about the benefits of co-designing with companies.

### *Co-design with companies allows designers to play an extended role*

During the project phases described above, design researchers played an extended role, from facilitators to triggers of innovation.

1. Facilitators of the design process (Senge, 1994; Tan, 2012), with the essential purpose of sharing common goals, building a common language among the various participants, bringing out their tacit knowledge, and promoting dialogue through the visualization of ideas and concepts (Segelström, 2013).
2. Enablers of a deep learning process for the company (Argyris, 1977; Senge, 1990). Zehus experienced co-design sessions for the first time, actively contributing in the service ideas generation on the one hand, and acquiring new design capabilities and tools to be embedded in order to tackle ideational processes, on the other.
3. Triggers of innovation (Deserti and Rizzo, 2011), since they were a source of inspiration for the company, experts able to bring in new visions, analyze the market trends, empathize with the stakeholders, describe future scenarios, boost innovation at the levels of strategic choices and business models.

### *Build trust relationships and a close collaboration for high valuable results*

In the case of Bitride project, co-design played a crucial role as driver of change (Meroni and Sangiorgi, 2011): the collaborative approach facilitated the process of knowledge sharing among the project stakeholders, which were able to build a common language and to reach, guided by designers, a coherent and innovative service solution. We valued the importance to generate genuine interest among all the stakeholders, a strong commitment, and to build trust in the process (Junginger and Sangiorgi, 2009). Involving the project stakeholders since the first steps of the research phase, the constant exchange of information among all of them, the close collaboration with the company thanks to the full involvement of a service design researcher, and the organization of various iterative co-design sessions, proved to be the key to achieve the aforementioned goals, enabling a strong learning process for the company.

*Co-design promotes user-centered approaches within the company*

The overall benefits of co-design can be identified as improving the creative process and organization of the project, enabling creativity, awareness on the customer's perspective, internal cooperation on innovation, and better matching between offer and needs (Steen et al., 2011).

The active involvement during the research phase, for example, supported the company in better understanding the shared mobility context in which it aims to position and to identify its customer segment through an innovation-driven and user-centered analysis of the current panorama.

Moreover, thanks to the user tests and the numerous sharing sessions with the project stakeholders, the company reinforced its capability of connecting the needs of customers with those of the company, improving the quality of experiences, reducing the delivery gap of its services (Allen et al., 2005) and differentiating from competitors (Moritz, 2005).

*Co-design helps to establish new innovation processes within the company*

The co-design approach supported a shift in the internal innovation processes of the company towards new collaborative approaches, encouraging employees from different internal divisions to change perspective while working together. During the co-design sessions, they were supported in using creativity to analyze the material obtained from sharing sessions and turn them into meaningful directions for their work.

The co-design approach also implied a learning process for the company as a whole, given by the transfer of service design competencies and tools which can empower the organization in approaching future businesses that better answer to the evolution of the sharing economy. For example, the co-design workshop encouraged Zehus employees to think "out-of-the-box", especially in the situation where the deep knowledge and the familiarity with the technical solutions would have inhibited innovation. Besides, the company began adopting some service design tools, in particular Personas and the Customer Journey Map, and embedding them into daily activities. Since the Bitride project, in fact, these tools have been largely used also in other projects, such as the redesign of the Bitride App for the B2B market or the definition of the online user experience of customers buying the Flykly products.

*Co-design helps shaping future steps of projects*

The co-design activities also helped shaping the future phases of the Bitride project, such as the definition and implementation of the pilot project.

In light of the sudden transformations occurred within the Milanese bike sharing context, thanks to the involvement of AMAT which provided key data about mobility and vehicles sharing services in Milan, and due to the limited involvement of end users during previous project phases, Zehus opted for reorganizing the pilot project by splitting it into two different phases. Therefore, during a dedicated meeting with Zehus and AMAT, it was decided to set up a pre-pilot with a lower number of bikes, a selected number of users and within a delimited area of the city, in order to specifically validate the technology and the service model.

Moreover, the launch of the Bitride pre-pilot helped to formalize the new innovative approach acquired by the company. Since the first days of implementation, in fact, it played the fundamental role to open up the way to transformative changes (Junginger and Sangiorgi, 2009). It was perceived by Zehus as a seed for change, making the intangible tangible, providing the first valuable insights, actualizing the knowledge gained during the co-design sessions and generating new visions able to guide new organizational changes.

*Co-design helps acquiring new competencies within the company*

A side-effect the of co-design approach applied to the Bitride project, was the introduction of new competencies within the company, such as UX designers, two graphic designers, one product designer, a marketing and social media manager, one person in charge of the customer care service, and different external consultants. This demonstrates a shift on how Zehus perceives, engages, and incorporates design approaches and competencies, starting the real shift from being a manufacturing company to becoming a service one.

To sum up, the adoption of a service-oriented and user-centred approach required a deep change in the way the company used to develop its business and deal with innovation (Sangiorgi et al., 2016) and it can be analysed as an evolution on how Zehus will engage with end users and stakeholders in future projects.

## Conclusions

Shared and sustainable mobility has become a trending topic in the last few years, raising interest from the public opinion and administrations around the world. The emergence of innovative initiatives tailored according to user expectations and behaviours towards mobility, clearly reveals the importance of fulfilling such needs. Based on our experience, and informed by the aforementioned literature, we think the case of Bitride Bike Sharing proved that a constant and close collaboration between service providers, public agencies, and experts working in the mobility sector constitutes a crucial approach for delivering innovative and coherent service solutions.

Similarly, the co-design approach with the company allowed us to reflect on the types of expected or unexpected transformational outcomes that such projects can generate within the organization, and the role that service designers can play in such processes.

In our opinion, a further exploration of the links between co-design activities with companies and the impact of organizational changes that occurs within them, could potentially constitute an interesting topic for further investigations.

To conclude, the case of Bitride discussed in this paper allowed us to highlight the importance of co-design occurring between service designers and a non-service company. Our opinion is that, in these cases, such an approach enables the emphasis on user needs as a driver to achieve business objectives, allowing creating value for both customers and the company. Business and technological requirements and constraints comes to dominate the development process only in a later stage, namely the effective implementation of the service.

In a competitive and constantly evolving sector, such as the shared mobility one, this approach can represent the key factor for distinction and successful replicability into other urban contexts.

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# Adapting the design process for different learning styles and abilities

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## Abstract

We begin by exploring what is meant by cognitive impairment, and some of the difficulties and challenges faced by people with varying levels of cognitive impairment, including specific issues related to adaptation and abstraction. We consider how designers (who can also be viewed as ‘outsiders’) can act as enablers, supporting people with cognitive impairments to contribute their insights and ideas to design services that work for them. We emphasise the importance of mindset and methodological framework, and, in the spirit of sharing and collaborating, use examples from practice to illustrate the iterative development of a range of methods and tools to create a safe and supportive co-design environment.

**KEYWORDS:** co-design, service design, inclusive design

## Introduction

In beginning this paper, we must make it clear that Snook do not take a ‘deficit’ based approach to our work with people with cognitive impairments. We believe there is no such thing as ‘normal’ and we all need different levels of support at different phases of our lives, and each face our own challenges related to information processing, social interaction and communication. We take an asset-based approach, recognising that, as Paul Hunt, the noted disability rights campaigner, stated in 1966,

‘The value of a human person transcends his social status, attributes, or possessions, or his lack of them.’

This is not to negate the support needs of those with multiple and profound learning disabilities, but to concur with the UN Convention on the rights of persons with disabilities, which stated in 2006 that it recognised,

‘that disability is an evolving concept and that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others.’

## Learning disabilities and cognitive impairment – what are the common definitions?

The term cognitive impairment covers a wide spectrum of learning disabilities and difficulties, from people with profound and multiple learning disabilities to those with Mild Cognitive Impairment (MCI) and specific learning difficulties such as dyslexia. The Scottish Government strategy for learning disabilities (2013), *The Keys to Life* (developed with learning disability advocacy groups) defines those with learning disabilities in the following way,

‘People with learning disabilities have a significant, lifelong, condition that started before adulthood, which affected their development and which means they need help to:

- Understand information;
- Learn skills; and
- Cope independently’

The Scottish Government strategy excludes specific learning difficulties, such as Dyslexia as it has alternative strategies for dealing with this. It also states that, “We recognise that some people with learning disabilities are also on the autism spectrum. However, people on the autism spectrum do not necessarily have learning disabilities.” (Scottish Government 2013)

### Specific Challenges of working with people with a range of cognitive impairments

As a lot of our work as Service Designers at We are Snook involves working with communities to innovate new models of public or community services, we have worked with a wide range of people with different abilities and challenges. We have encountered a range of specific cognitive impairments, from foetal alcohol syndrome to dementia, in our co-design work with communities. We recognise that there is a range of support needs for people with general, non-condition specific, learning disabilities, and that every condition is on a spectrum, from those requiring intensive support and care, to those living independently.

We have found the following list of signs and symptoms, while specifically related to Foetal Alcohol Spectrum Disorder, to be indicative of some of the challenges we have faced in co-design projects with people with a range of cognitive impairments:

- Problems with language
- Lack of appropriate social boundaries (such as over friendliness with strangers)
- Poor short-term memory
- Inability to grasp instructions
- Failure to learn from the consequences of their actions
- Egocentricity
- Mixing reality and fiction
- Difficulty with group social interaction
- Poor problem solving and planning
- Hyperactivity and poor attention
- Poor coordination.

(Drink Aware 2013)

Through our own learned experience and through reviews of the literature related to cognitive impairments, we have grouped cognitive difficulties into four main categories:

## Information Processing

Working memory, reading difficulties, ability to remember or recall instructions, problems understanding meaning and intent (literal interpretation), difficulty in understanding abstract concepts or being able to abstract from personal experiences to general principles.

## Focus and Transition

Intense focus and repetitive behaviours related to specific areas of interest - and inability to recognise when this is not appropriate; difficulties in making transitions between activities; lack of tolerance of, or ability to cope with, change.

## Social Interaction

Lack of self-control and social awareness; inability to moderate or control emotional responses; lack of inhibition, demonstrating impulsivity; problems recognising or responding appropriately to social cues.

## Communication

Very poor literacy skills- limited ability to write by hand; language difficulties – inability to express needs and opinions verbally; occasionally accompanied by poor hearing and eyesight.

## Designing in a social context – designers as ‘outsiders’

Obviously all of these symptoms are on a scale from moderate, requiring minimum support, to extreme. However, at Snook, we have recognised that often we are sending our designers into situations that are the domain of qualified social and community development workers, and they need to be equipped to deal with the issues that arise. We put all of our staff through Mental Health First Aid training and Sexual Health training (kindly provided by NHS Greater Glasgow and Clyde), and Protection of Vulnerable Groups (PVG) screening. We recognised that our staff needed to be able to recognise signs of mental distress (in themselves as well as others) and also indicators of physical and sexual abuse. Our concern is twofold – firstly that all groups are run with appropriate concern and attention to the wellbeing of group participants; secondly that staff themselves can recognise when they are being emotionally affected by the personal stories and circumstances of those involved in projects.

Designers themselves have been identified as ‘outsiders’ by Gamman and Raein, (2010) who suggest that creative people often set themselves outside of social norms and adopt a ‘critical inquiry’ approach to society. They also highlight the link between creativity and dyslexia and the fact that up to 60% of Art and Design students exhibit some degree of difficulty with reading, spelling, written language and processing instructions, often making them ‘outsiders’ in educational processes. Quoting West (1997) who states “adaptability in complex situations evidently allows dyslexics to solve problems in unusual ways that employ unconventional methods”, they suggest that this makes them particularly suited to more creative disciplines where they can work in very practical and visual ways (Gamman and Raein 2010). Csikszentmihaly (1997) and Runco (2007) have both suggested that overcoming disability, whether intellectual, mental or physical, is often a defining feature of creative people.

It is worth noting here that while dyslexia is linked to enhanced capacity for creativity, it is recognised that other developmental disorders, such as Autism Spectrum Disorders (ASD)

and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) seem to limit an individual's capacity for imaginative creativity. It appears that they cope better with reality-based creativity and a limited variety of options or choices (Craig and Baron-Cohen 1999; Happé 1999). Having taught Design Thinking to IT students (a high percentage of whom were ASD) I can concur that they were much more comfortable in analytical tasks compared to those that involved inductive reasoning and abstraction.

## Understanding Learning Styles

Experiential Learning Theory (ELT) is not just a theory of education but a model of personal development, outlining how we all learn and grow. Kolb states that 'learning is *the* major process of human adaptation' (1984). Piaget proposes that resolving states of 'disequilibrium', where existing knowledges or 'schema' are challenged by new encounters results in 'intelligent adaption' and 'formal operational' maturity (1958). It is recognised that this is a particular challenge for people with learning disabilities, who Scottish Government have defined as having specific 'problems in adaptive functioning' (2013). From experience, we recognise that some people with cognitive impairments face challenges in assimilating new knowledge and may be able to critically evaluate their own experiences, but are less able to abstract from that to general principles for service delivery. Figure 2 illustrates the design process We are Snook use, which is built on the Design Council Double Diamond (Design Council 2005) and ties this in with the different learning styles proposed in Kolb's ELT (Kolb 1984; Kolb and Kolb 2005). We have identified that the phases of the design process that involve more divergent thought and abstraction (indicated by the dotted ellipse) are those in which people with cognitive impairments require additional support.

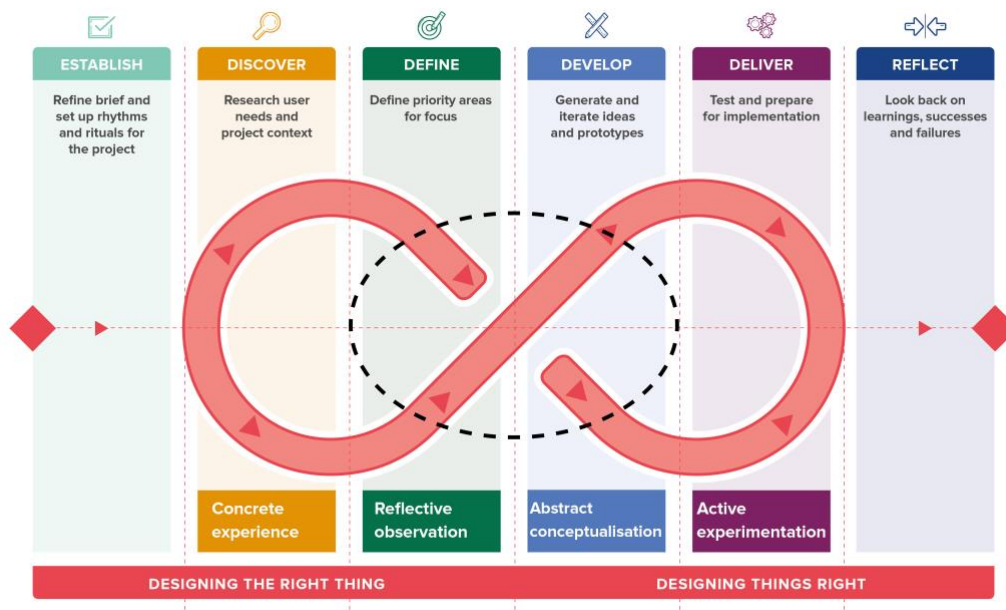


Figure 1

## Current challenges in service co-design with people with cognitive impairments

Initiatives to allow people with learning disabilities to exercise choice and control over how they receive support have grown in recent years, building on programmes such as 'In Control' (Leadbeater, Bartlett and Gallagher, 2008).

Scottish Government has a programme for direct payments called Self-directed support (SDS) which,

‘empowers individuals to have greater choice and control over the support they receive, either through receiving a direct payment in lieu of services, or by having greater control over decisions about what types of services or supports are provided. Rather than being a passive recipient of services, citizens can become actively involved in selecting and shaping the support they receive.’ (Scottish Government 2013)

The Scottish Government has confirmed that this involves including people with learning disabilities, “to deliver the changes necessary they need to involve the third sector and most importantly people with learning disabilities and their carers to ensure that developments are fit for purpose.” (Scottish Government 2013)

A recent Scottish Government report (2016) has reiterated the commitment to ensure that:

- ‘Disabled people can participate as active citizens in all aspects of daily and public life.
- Support for independent living for disabled people of all ages, with increased say over how that support will be managed and provided.
- Delivery of high quality health, social care and third sector services, with services working together to remove the barriers faced by disabled people of all ages
- Increased opportunities for disabled people to be fully involved in the design and delivery of services.’

Robertson and Wager (2012) explain that this is the core value of Participatory Design, ‘It expresses the ethical stance that different voices need to be heard, understood and heeded if a design process is to be genuinely participatory.’

Traditionally people with cognitive impairments have suffered from having things done ‘to’ them and ‘for’ them, with little involvement on deciding what services are appropriate or desirable. Older people with learning disabilities have suffered the most from this and sometime struggle to think independently about what they really want, as opposed to what they have been offered and always accepted.

One older man (60s) with learning disabilities told us how, in the institution he was previously in, they were actively discouraged from forming romantic relationships and even too close friendships. This man also had a work placement for many years in a factory, doing very repetitive assembly work. He can’t remember if he was paid, but said that, if he was, he was given no choice about what to do with the money or how it was spent. We can see from these stories that being suddenly offered the opportunity to decide what to do themselves can be very unsettling and often leaves people feeling more vulnerable and exposed to possible failure: “But what if I think it might be the right thing to do, then it doesn’t work out. What happens then?” People have even expressed incredulity, “No, there’s no way they’d let you do that!”

How can we, as designers, support people to consider their needs and wishes in this new (and for some, completely revolutionary and unsettling) landscape? How can we create a safe and supportive environment that facilitates co-design of new service models?

## Creating a safe and supportive space for co-design

One of the most important things in engaging people with cognitive impairments in any project is providing clear explanations, in easy to read language, well in advance of any engagement. People should be given the opportunity to address any questions or concerns they may have after reading at the Establish kick-off meeting (see Figure 2 for illustration of co-design process). Written communication should cover, at a minimum, these three main headings:

1. Project purpose, process and participant’s roles



2. Activities and tools
3. Expectations of outcomes

It is very helpful to work with a learning disabilities Advocacy Group, such as My Life, My Choice, Change, Grapevine, Mencap, Enable or People First; or with a condition specific group such as Alzheimer's Scotland. People with cognitive impairments who receive support from, and are members of, such advocacy groups have been empowered to recognise that their opinions are important and people should listen to them. Others, with FASD and particularly alcohol or drug related cognitive impairments, are often less able to articulate their preferences, as groups they may be members of focus more on support than advocacy. As this latter group can be quite unpredictable, it is vitally important that support and/or social workers are involved in any group work.

Actually the involvement of formal or informal carers and support workers is often key to success of any co-design project with vulnerable groups or people with cognitive impairments. At Snook, this is a clear requirement in our Vulnerable Adult and Child Protection policy. Support workers bring an understanding of the background and specific challenges of participants in a group; can also alert designers to any potential conflicts between participants; and can provide continuing support to participants, talking through, and providing support, on any particular issues that may have been uncovered during the co-design project. Ethically, this is very important. Asking people to reflect on their lived experience, especially in a group situation, can mean that one person's story prompts a different person to recall something that happened to them that may be distressing, and may potentially involve a traumatic memory, or disclosure of ill-treatment or abuse. Any project working with the public should have Ethical Approval that provides guidelines for dealing with such situations.

## Explaining the purpose, the process and roles

Part of any ethics application focuses on clearly explaining the purpose of a project so that participants can decide whether or not to be involved. We must be clear about who is sponsoring the project, who will ultimately benefit from the outputs, what will happen to any information they provide and who will have access to this.

Explaining clearly how the co-design process will work can alleviate nervousness and anxiety. We should explain here how important their role is in bringing insight into the everyday lived experience of the service (or product) we are co-designing. We always say that any non-designers joining our co-design projects (whether part of the senior management team, or service users) are experts in their own lives. Czyzewski, Johnson and Roberts (1990) perspective on the expertise of workers can also be applied to service users,

‘It assumes that the workers themselves are in the best position to determine how to improve their work and their work life. In doing so, it turns the traditional designer-user relationship on its head, viewing the users as the experts – the ones with the most knowledge about what they do and what they need – and the designers as technical consultants.’

Robertson and Wagner (2102) explain the additional care required when engaging ‘vulnerable’ groups:

‘A related concern is vulnerable and frail participants, such as children, people with disabilities including dementia, refugees, immigrants and in general people in marginalised situations. We use ‘vulnerability’ here as a term indicating that some groups of users may require special sensibility and care.’

It is very helpful for people with cognitive impairments to have clear and detailed outlines of exactly what will happen in any workshops. As designers we often seek to be dynamic and



responsive in our workshops, ‘going with the flow of energy’ as we say. This can be very disconcerting for participants if they have taken the time to study the programme and familiarise themselves with the schedule. We must either make it clear that the programme is indicative only, and may change, or make every effort to keep to the programme. This, again, avoids unnecessary anxiety and distress.

## Explaining activities and tools

This is a very important issue that we must address sensitively. Often, in co-design workshops we use playful, primary coloured tools such as lego, playdoh, and other toys such as dolls and building blocks, alongside stickers and simple graphic images. If we are not careful our co-design participants can think that we have provided these tools specifically for them and interpret this as patronising and indicative of our judgement of their abilities. When I asked one group why a previous participant had a negative reaction to such tools, when we used them with senior professionals all the time, they said, “Yes, but they have not been told all their lives they are just children in an adult’s body.” It is helpful, therefore in any material sent out before the project, to provide illustrations of these tools in use by ‘professional looking’ people and explain our reasons for use of naïve tools. We should create our own stickers that have clear, simple icons without being childish in any way.

If we indicate that workshops will involve writing or drawing we must emphasise that people will be available to support them with this, and that they can talk while other people scribe or draw for them if required. However we must also respect project participant’s desire to do this independently if preferred: “Please don’t try to finish my sentences for me. That just shows your impatience and is disrespectful. I know what I want to say but just take longer than other people to say it.”

Understanding learning styles and preferences should prompt provision of a range of different activities. For example there might be a video diary space, supported drawing of journey maps, and labelling or voting with stickers on a prepared grid. It is helpful to try to move people around, but there are activities that some people feel more comfortable with than others.

## Managing expectations of outcomes

At the project outset we must be clear about what will happen as a result of the project and what the timetable for any service changes might be. Sometimes people are delighted just to have been asked to contribute their views and ideas, but, understandably, there is an expectation that something will change as a result of their feedback and involvement. Complex procurement processes, particularly in the public sector, can extend the time period between producing a service proposal and actually implementing a new service. This can cause frustration and disappointment if not managed appropriately. Because co-design projects often involve close working over an extended period we must agree together some boundaries around friendship and continuing contact. As Stalker (1999) has made clear, it is sometimes difficult for people with learning disabilities to realise that this may be a professional relationship that will not continue beyond the project’s end.

Because designers can produce mock-ups and prototypes that look professional, sometimes project participants can interpret these as indicating that something, (such as a web-based service) they have helped to co-design, is almost ready to launch, and want to direct others to it. It is helpful to give project participants a takeaway, in the form of an illustrated, easy read version, of a project report that they can show others to demonstrate their involvement in the project.

## Tools to support self-expression in people with cognitive impairments

Having discussed all of the challenges and ethical considerations of creating a safe and supportive space for co-design with people with cognitive impairments, what methods and tools best support project participants in actively contributing to the co-design process?

As mentioned previously most people with cognitive impairments are more comfortable working with ‘concrete’ experiences, rather than abstract or conceptual ideas. In any team or group work situation the best results are achieved by allowing each member to work to their strengths, and this also applies to participants with cognitive impairments.

### Establish – the pre-project or project preparation phase

At the establish phase of a project it is important to clearly articulate desired outcomes and how these will be measured. These are not only outcomes required by the client, but also outcomes expected by the service users involved in the project. Working together to set a range of Key Performance Indicators at this stage of the project allows effective evaluation at the end of the project. If some of the Key Performance Indicators relate to attitudes, behaviour and capacity (skills development) of those involved in the project, it is important to establish a baseline for these measures before the project commences.

The ideal way for the designer to understand the lived experience of the service (or product) users is to spend time with them, mostly just observing daily life, but asking questions where appropriate. This is the design ethnography phase, which is often squeezed when project budgets are tight. However it is incredibly valuable in forming our understanding of the capacity and skills of the service user, the challenges they face, and their adaptability in overcoming these.

As an introduction to the project and a prompt to begin to think about the issues to be considered in the project some preparatory work can help people get into the right frame of mind. If we want to start with some insights into their daily experiences of using a service (or place or product), cultural probes, particularly cameras with GPS, work very well. Rather than being asked to suddenly describe their lives in detail in a workshop with people they don’t know, they can take time to take photographs, or make videos of their daily routine. It is best if the project introduction is quite instructive about what is required and perhaps asks specific questions, as sometimes the amount of material produced can be overwhelming. If the cultural probe material is available in advance of the first workshop, the project team can take the time to analyse and synthesise the information and identify some specific issues or themes to be considered in the workshops.

### First activity – the discover phase

In our first workshops with project participants we are usually looking to obtain some further insight into their lived experience of a service if they have completed some cultural probe activities beforehand, or to support them in describing their experience if this is the first activity they have been involved in. As Liz Sanders says, ‘Asking even highly creative people to write in a blank book was just over the border, they didn’t know where to start.’ (Sanders 2012) So it is important to have prepared materials to support people in telling their stories.

We usually try to obtain two specific insights at this stage

1. What does your world look like? Who are the people supporting you in your daily life?

Using pre-prepared stickers and maps makes this activity accessible for everyone. A support person can help scribe any comments the person makes to identify the different

people and places they engage with. We usually put the person at the centre of the map and ask them to place the other places and players in order of importance, from the centre outwards. (Figure 3)

We must be aware of two specific issues in mapping lives like this.

- Some people we have worked with become very distressed when they see the paucity of their social network in visual form
- Routine and support structures are often very important to people, providing a sense of comfort and security. They may become stressed if they feel we are questioning these or suggesting change.

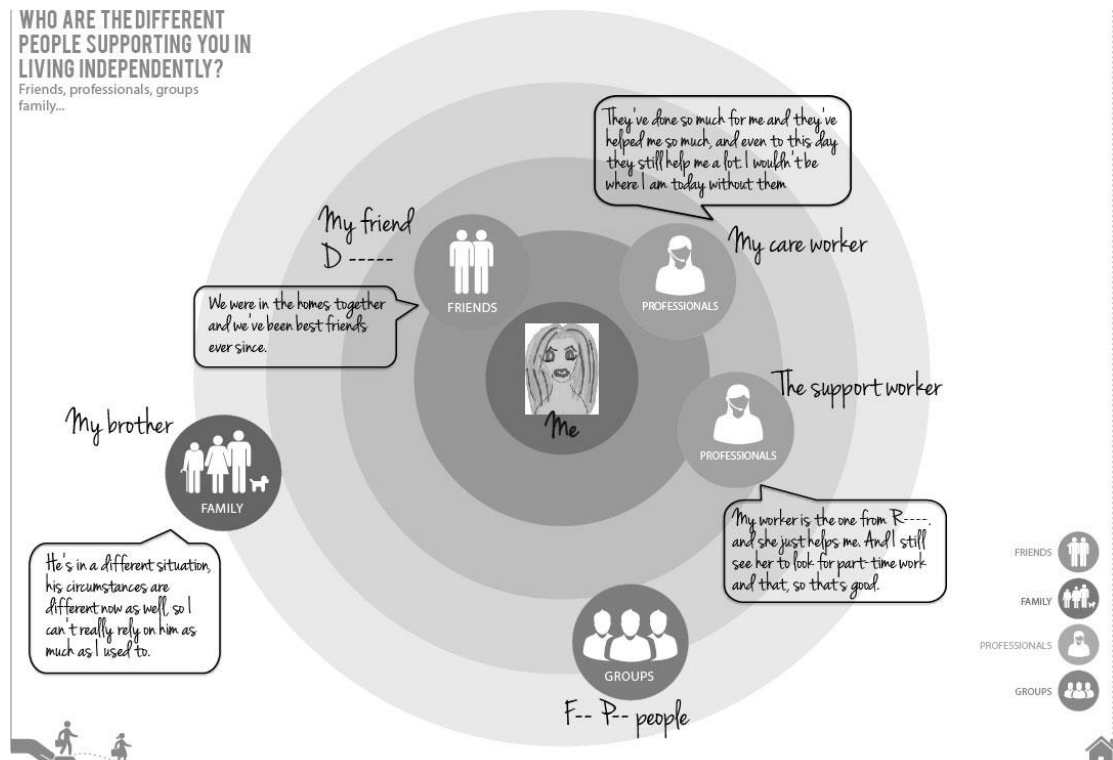


Figure 2

## 2. What does your experience of using this service (place or product) look like?

In a small group, where there is one to one support, it is possible to use reasonably standard journey maps, where the participant is supported to draw or write in step-by-step captions to describe their experiences. The journey map below illustrates the experience of a young person who was supported to move into independent accommodation, only to have a party where someone was stabbed, which resulted in her being evicted from the flat. This confirms the need to have support for the designers who are asked to illustrate such experiences and who may be emotionally traumatised by the stories they become involved in.



(Figure 3)

If the participants have previously taken photos of their day-to-day experiences these can be mapped along a timeline and emotions can be mapped to specific points. Some people find the interpretation and expression of emotion difficult due to their specific learning disability. Others because they have been admonished to control their emotions, and suppress emotional expression so often, they find it uncomfortable and stressful when asked to do this. We have used emoticon and coloured stickers to make this easier. Use of colour and symbol can be problematic, however, and we must be aware of cultural and sectarian associations (Riley 1995, Gage 1999).

## Second activity – the define phase

Defining the key aspects where a co-design intervention might have the most impact involves a degree of analysis, synthesis, and evaluation. There is a level of abstraction here that is sometimes challenging for people with cognitive impairments. Some people find it hard to abstract from their specific experiences to general principles that apply to everyone and can be addressed collaboratively.

It is easiest to do this in a series of simple steps,

1. grouping similar experiences and phases together to create a series of themes (such as going out, contacting professionals, getting help in an emergency) This can be done by creating on-the-spot visual headings that participants can add their existing images, notes, stickers or comments to.
2. Interrogating these themes to identify some keys insights, such as,
  - a) What things can you see that are working really well? (we like to retain an asset-rather than a deficit-based approach)
  - b) What do you think could make them even better?
  - c) How might we make improvements?

This can, again, be done with emoticons or with clearly labelled colour stickers.

Usually it requires a scribe to write out people's comments and add them to the board or table.

3. Identifying the areas with the most potential for impact.  
It is useful to have a simple grid or chart (derived from the previous two exercises) where each individual can indicate what they feel are the most important issues to take forward. It is best if each individual has colour coded stickers so that the project team can trace the individual contributions and identify if anyone has significantly different views from the rest of the group. If we allow the group to vote on what to take forward to the develop phase, it is important to manage the disappointment of those who feel the most important issue for them is not being addressed.

## Third activity – the develop phase

Overcoming the challenges of developing ideas and concepts into something more tangible, often involves an interim phase where the designer takes the nascent ideas away and works them up into something more tangible which is then re-presented to the group. However, simple cardboard or paper prototypes can also be quickly produced in a workshop to allow participants to act out how they would use a product or service very effectively. These can also be adapted quickly to address comments or refinements suggested.

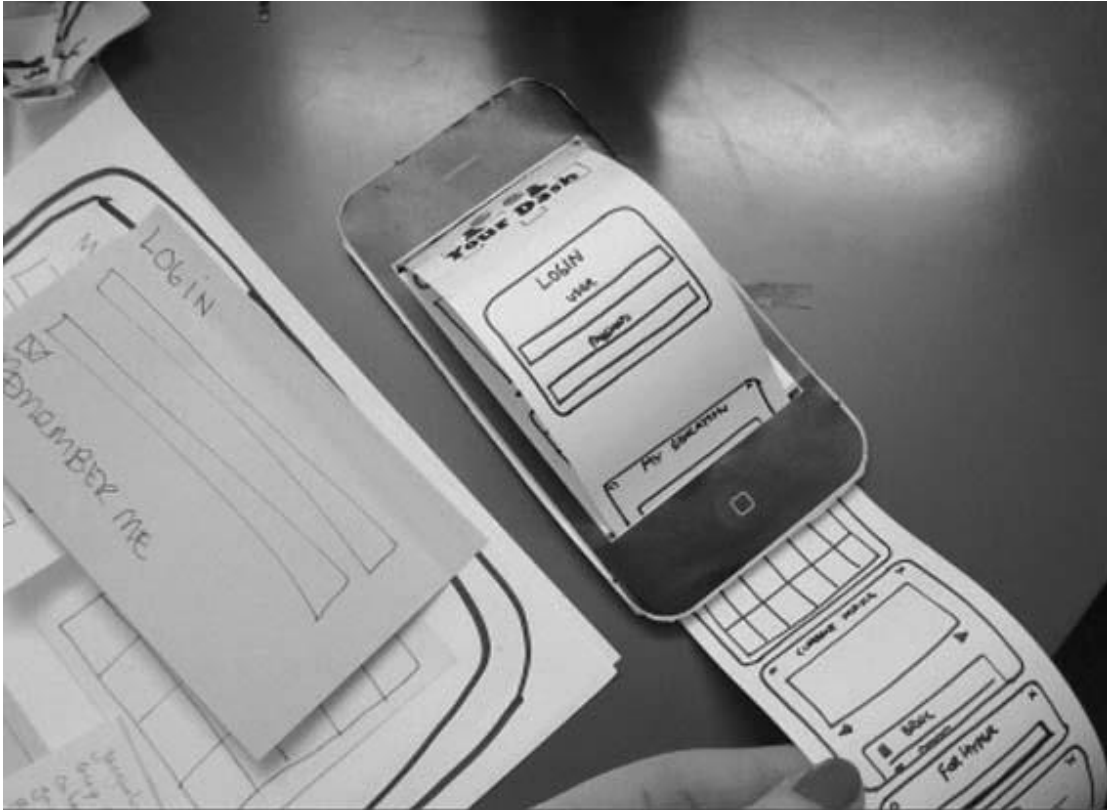


Figure 4

Asking participants to think about web page layouts is a particular challenge. People can quickly tell you what they don't want and what doesn't work for them but are absolutely frozen if given an image of a blank screen and asked to draw what they want. Pre-prepared components with standard elements, such as search bars, play buttons as illustrated in Figure 6, work well.

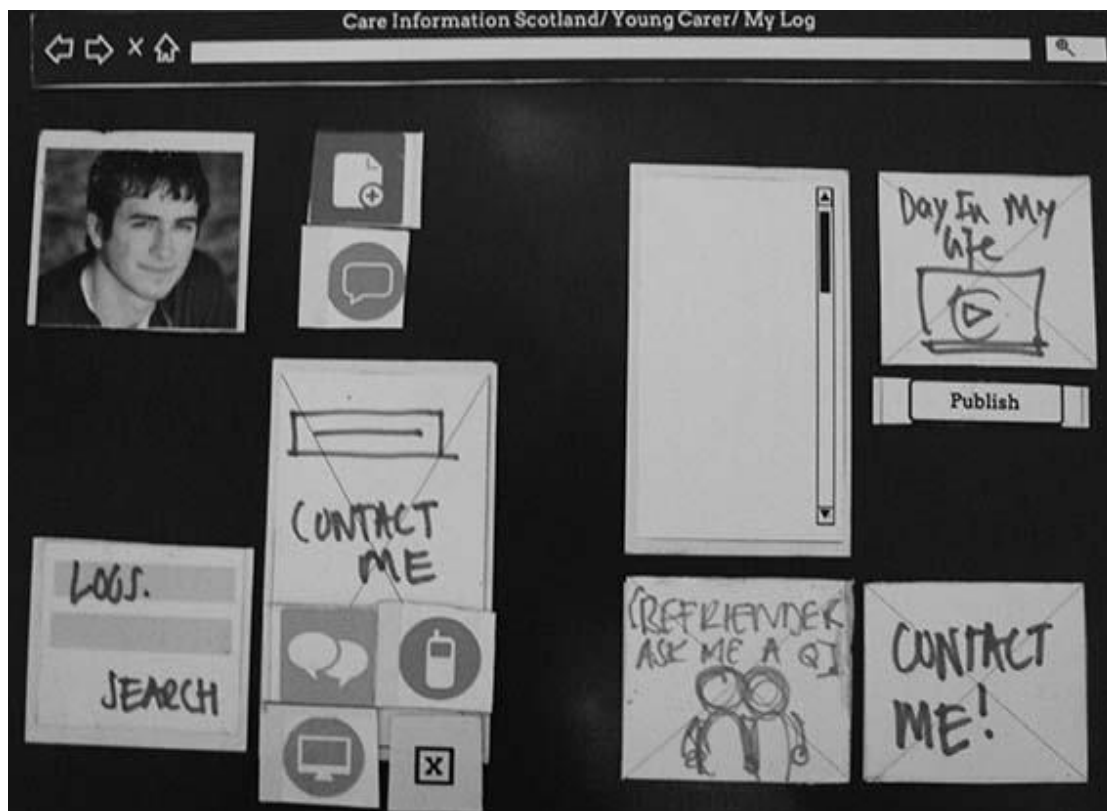


Figure 5

As this phase moves from developing concepts to more tangible outputs, people with cognitive impairments often become more confident about giving feedback on products and web layouts specifically. Giving tangible examples of specific service interfaces, or touchpoints, such as forms or leaflets helps, as does enacting each phase of the service interaction.

#### Fourth activity – the deliver phase

If presenting a project back to a client or commissioning organisation, involvement of the service users in the presentation is very effective. The service provider cannot dispute the experience of those who engage with the service and their involvement adds to the validity of the project proposals.

If the deliver phase also becomes part of a further co-production phase, then the fact that the service users have been involved in developing the proposals, achieves a degree of buy-in to the new service and motivation to make it work.

#### Reflect – the project evaluation phase

Whole project team (including participants)

It is very important to return to the Key Performance Indicators established at the start of the project to ascertain whether the desired outcomes have been achieved, re-administering any measurements taken to determine impact.

#### Project Design team

The project design team should also take the opportunity to reflect on what worked well and what could be improved in the methods and tools used. This is also a good opportunity to identify if any further training is required to make the design team more effective in supporting people with cognitive impairments through the co-design process.

## Project support team

The project lead from the design team should meet with the carers and/or support workers to ensure that any negative issues that surfaced through the project will be dealt with to ensure no adverse effect on project participants.

## Conclusion

We have considered the real drivers for involving people with cognitive impairments in co-design of services and the specific challenges associated with this. Through experience of facilitating a wide range of projects involving people with varying degrees of learning disabilities and specific learning difficulties, we have come to recognise that the tools and methods used are of fundamental importance. However it is the attitudes, values and operational framework of the design team that are most important in creating a safe and supportive co-design space for people with cognitive impairments. Recognising the particular strengths and contributions of the different member of the co-design team, and matching tasks to particular areas of expertise and experience will produce the best outcomes, as in any group project. Where those with cognitive impairments feel most comfortable contributing and where they need more support depends very much on individual ability. We have presented above some general guidelines about where people might feel most at ease, and most challenged. However we must work together with advocacy organisations and individuals to ensure we create the most supportive environment possible to allow people with cognitive impairments to feel comfortable and able to contribute. As one participant said when asked to help us create a persona description for a person with learning difficulties,

‘I don’t know what you mean by a typical person with learning disabilities. There is no such thing, in the same way there is no such thing as a ‘typical’ Scottish person.’

This statement highlights the need for education of staff involved in co-design, to enable them to empathise with participants and explain clearly the purpose of design activities and designed outputs. From this we recognise that working with people with cognitive impairments is a mutual learning process, as Robertson and Simonsen (2012) explain, ‘Mutual learning and the setting of mutual learning processes are defining commitments of participatory design.’

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# Analysis on the utilization of co-design practices for developing consumer-oriented public service and policy focusing on the comparison with western countries and South Korea

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## Abstract

Service design methods have recently been applied to the areas of public services and policies development reflecting the needs of consumers. However, domestically, due to the lack of understanding of service design among many policy makers, service design is utilized as a piecemeal approach in practice. In that regard, this paper analyzes six cases using service design methodology in public service and policy development in Western countries and South Korea. The data relevant to each case was collected from desk-based secondary data and in-depth interviews. The analysis was focused on the use of co-design tools in each step of a co-design process relative to the levels of participants and the roles of designers. The analyzed cases showed the countries of the West utilized the co-design tools considering the understanding and active involvement of stakeholders, whereas domestic co-design tools were used without considering stakeholders, indicating a greater involvement of service designers in each step than that of consumers.

**KEYWORDS:** co-design process, co-creative tool, public service and policy development, role of service designers

# 1. Introduction

## 1-1. Background and Objective

Design has been extending its scope to public policy and service development utilizing some service design methods attentive to the needs of policy consumers. However, service design is mostly used as a piecemeal approach or as a formal tool to impart some validity to decisions made by public institutions due to policymakers' lack of understanding of its essence. Particularly, as the public service development limits the roles of 'design' to visual outcomes, the collaboration with stakeholders in policymaking using a range of co-design tools fails to apply the design thinking. Hence, this study aims at the following. First, focused on the utilization of co-design tools as a service design approach to public service and policymaking, this study analyzes overseas cases of service co-design tools utilized in public service and policymaking. Second, this study analyzes domestic cases of the 'Citizens Policy Design Group' utilizing the service design in public service and policymaking and compared the findings with those of the West. Third, based on the comparison between Western and domestic cases of co-design tools in public service and policymaking, this study provides some implications for a further use of co-design tools with diverse stakeholders and for relevant roles of service designers.

## 2. Theoretical rationale

### 2-1. Understanding the public service and policymaking process

Howlett & Ramesh (2003) sub-divided the policy design process into 'policy formation – policymaking – policy implementation – evaluation' steps. The policy formation involves uncovering problems and determining the needs for appropriate policies accordingly. The policymaking involves defining and clarifying problems that surface. The policy implementation involves a process of actually creating new policies. The evaluation involves citizens' evaluation. The 'policy formation and making' steps are driven by policymakers, whilst the 'policy implementation and evaluation' steps are the roles of policy actors and meant to implement products and services embodying the policy intentions manifested in the preceding steps. The salient problem of the policy development process is that any problems in the earlier steps of policy development are perceived by not consumers but suppliers before they are raised and led to policies. Therefore, the resultant supplier-oriented policies fail to attend to the interactions with consumers (Koo, 2016). Also, the conventional policy development process provides diverse participatory routes such as forums and hearings to gather extensive opinions from consumers, which however is too limited to reflect the majority opinions (Gov 3.0 Citizens Policy Design Group Operation Manual, 2016). To address the challenge by applying a service design method to a policymaking process, a policy service need be customized for its consumers by involving them in the policy development process, instead of a supplier-oriented top-down or bottom-up approach in the agenda-setting step. Also, a policy service based on consumers' experiences and potential needs is attainable by utilizing a range of co-design tools in collaboration with stakeholders, not general solutions to problems surfacing in policymaking.

### 2-2. Understanding co-design

Definitions of co-creation and co-design vary across disciplines. Sanders & Simons (2009) described co-creation as an extensive term used in a wide range of fields, and defined it as more than two people sharing an experience and engaging in a creative activity. Prahalad (2004) defined co-creation as consumers collaborating and interacting with businesses and government agencies to define and solve problems through their experiences. Sanders & Simons (2009) associated co-design with co-creation, remarked collective creativity arose

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when co-creation was implemented via co-design in the whole process and stated co-design was a specific case of co-creation (Sanders et al., 2008). In addition, Holmlid et al. (2015) defined co-design as indicating a broad range of creative and collaborative activities in design, whilst Yoo D et al. (2013) defined it as a process of collaborating with stakeholders for any expression of creativity. According to Yoo D et al. (2013), co-design evolved from a participatory design and was based on a user-oriented design. In short, co-design may be defined as diverse design activities that enable designers to engage in co-creation with multiple stakeholders (or non-designers) with intent to realize collective creativity.

### 2-3. Roles as designers and participants in co-design process

A co-design process is intended to identify problems and find solutions as a process of exploring future alternatives and clarifying solutions through specific approaches (Burns et al. 2006). Co-design processes involve diverse methods and vary with the types of service industries and providers (Hong, et al., 2012). Amongst all, the UK Design Council's 'Double Diamond Design Process Model' is widely used and comprised of 4 steps, i.e. 'Discover – Define – Develop – Deliver', whilst the U.S. design consulting firm IDEO's HCD Process consists of 'observation – brainstorming – rapid prototyping – implementation'. In contrast, Holmlid et al. (2015) presented a four-step co-design process for service innovation: 'insight generation – concept exploration – convergence – implementation'. The process suggested by Holmlid et al. (2015) is focused on co-design acts in a project development process utilizing various co-design tools fit for the goal of each step. First, the insight generation step defines the relations with stakeholders and the scope of a project. According to Holmlid et al. (2015), the insight generation utilizes diverse tools such as 'probes', 'changing roles' and 'context mapping storytelling' to allow stakeholders to easily understand problems and express their opinions. The concept exploration involves experiments and workshops to make prototypes and explore, reify and deliver concepts with the 'speed sketching' tool designed to compose the worst and best scenarios and other tools such as the 'magical things' tool that helps users to realize their potential capacities via multifarious materials. The convergence step employs different methods of visualization for communication prior to the delivery of a service using the 'service walk through' and 'experience prototyping' tools to help users presuppose the entire services, laying the foundation for the participation in service development. The implementation step pursues sustainable co-design activities instead of setting a goal of long-term social change, interacts with future users and implements a service process, which involves documenting the services, guiding stakeholders to partake in and adapt to newly applied services and using a broad range of 'design games' for 'collaboration and ideation'(ibid).

Regarding the roles of participants in a co-design process, Lorenz Aggens (1983) categorized users' participation into 6 steps (i.e. The Unsurprised Apathetics'-The Observers'- The Reviewers'- 'The Advisors'-Plan-Makers'- 'The Decision Maker'). First, the Unsurprised Apathetic users are characterized by low levels of participation and understanding of projects and the unwillingness to express their intention for participation. Second, the Observers are interested in participating in projects but will not actively express their opinions or ideas. Third, the Reviewers participate in project-related programs and activities and carry out the roles as project members. Fourth, the Advisors complete separate programs on projects and provide experts with ideas relevant to projects. Finally, the Decision Makers are defined as the most active participants having the final say. Druin(2002) classified the roles of participants in a participatory design process into 'users, testers, informants and design partners.' First, 'users' personally use the outcomes including products, services, technologies and designs to provide their own experiences. Second, 'testers' like 'users' evaluate the outcomes instead of participating in a process. Third, 'informants' take a step further than 'users' and 'testers,' providing their own experiences or information throughout the whole process of design. Finally, the 'design partners' show the highest level of participation, actively being involved in each process on equal terms with designers to express their opinions. The roles of designers vary with different levels of participants. Sanders & Stappers (2008) defined four roles (i.e. lead-guide-provide-offer) of designers matching up

with the levels of participants. First, designers lead participants, continuously motivating them for seamless communication when participants find a meaning in their participation. Second, designers ‘guide’ participants through some approaches and directions for participants to express their opinions or ideas after using existing products and services. Third, designers ‘provide’ participants with how to express their opinions and ideas for their active participation. Finally, designers ‘offer’ some in-depth situations to help derive diverse ideas when participants are capable of giving some insight in their own words. Hence, stakeholders at different levels of participation, the roles of participants in co-creation, and the roles of designers conforming to the levels of participants are perceived as important.

### 3. Criteria for case selection and frame analysis

The projects organized by the UK Policy Lab and Design Council and the U.S. IDEO were selected as successful overseas cases of utilizing the service design method in public service and policymaking. Likewise, domestic projects led by central and municipal governments in 2015 based on the ‘Citizens Policy Design Group’, an established civic participatory policy design platform, were analyzed.

Each case and its co-design approaches were analyzed in terms of the four steps suggested by S. Holmlid et al. (2015), i.e. insight generation, concept exploration, convergence and implementation, as outlined in Table 1. Next, the participation and involvement levels of stakeholders and designers were analyzed in light of the participants’ roles in Druin’s (2002) four-step participatory design process, i.e. users, testers, informants and design partners. However, with consumers emerging as design partners in recent public service and policymaking, this study added another participation level, i.e. ‘co-creator’, to Druin’s (2002) concept of design partners, to analyze the roles of designers and participants in their interactions to define problems and implement solutions on equal terms for co-creation. Table 2 outlines the roles of participants relative to their participation levels. In addition, to determine the roles and involvement of designers in relation to the participation levels of stakeholders, this study used Sanders & Stappers’ (2008) 4 roles of designers (i.e. lead, guide, provide and offer), and analyzed an additional role as ‘facilitators’ in that the role of design as a facilitator in favor of active engagement and mutual understanding benefits the seamless interactions among stakeholders in service design. Table 3 outlines the roles and involvement of designers relative to different levels of participants in co-design process of interest.

Co-design process		
Co-design process	Insight generation	Defining relations with stakeholders and project scopes
	Concept exploration	Prototyping and building concepts to deliver at workshops
	Convergence	Communicating with stakeholders via diverse pre-service visualization
	Implementation	Building a service process where sustainable co-design activities enable interactions with potential users

Table 1. Four steps of a co-design process

Roles as designers relative to stakeholders’ participation levels		
Designer involvement	Lead	Designers continue to lead participants for effective communication when participants find it meaningful to participate
	Guide	Designers guide participants to express their ideas about existing products and services

	Provide	Designers provide participants with a need to extend their ideas and a way of expression to give information
	Offer	When participants for themselves derive some insight and express their creative ideas, designers offer some specific situations relevant to the services to be implemented
	Facilitator	Designers help participants with design thinking, coordinate diverse opinions of participants and encourage them to effectively engage in a co-design process

**Table 2. Designers' roles relative to stakeholders' participation levels**

Roles as participants in a participatory design process		
Participation level	User	Participants provide personal experiences of products, services or other outcomes
	Tester	Participants test the outcomes of already produced products and services rather than a direct participation
	Informant	Participants go one step further than testers to actively share personal experiences and information throughout a design process
	Design partner	Participants most actively cooperate with designers in a process
	Co-creator	Participants interact with designers for co-creation on equal terms in defining problems and formulating solutions

**Table 3. Roles as participants relative to stakeholders' participation levels**

## 4. Case Study

### 4-1. UK CJS (Criminal Justice System) Service

The online crime report service provided by the Policy Lab under the auspice of the UK government is a case of a government service utilizing a suitable stepwise co-design tool for diverse stakeholders (Policy Lab, 2015A). The insight generation allowed all stakeholders as informants to attend an idea workshop, followed by an experience prototyping based on the insight derived to map out a service space and predict the service, while the service designers collected the stakeholders' ideas. In this process, participants worked as design partners while designers 'offered' some specific situations. Second, in the concept exploration, they composed service scenarios based on the foregoing insight, and service designers visualized the service based on the scenarios. In this step, stakeholders participated as informants, while participants presented insight derived using the co-design tool in the preceding step, with the service designers involved as providers for more effective visualization. In the convergence step, all stakeholders were engaged in the paper prototyping of the specific content of the service and designed the features and problems of each service. Here, stakeholders and service designers collaborated, with the former participating as co-creators and the latter minimizing their involvement as facilitators assisting the former. In the implementation step, in collaboration with online experts, they implemented the CJS (Criminal Justice System) online service, which enables consumers to conveniently cope with local crime issues online without having to calling the police for reporting crimes.

Field	Policy Lab / Online criminal service
Organizational status	Government agency / UK Policy Lab

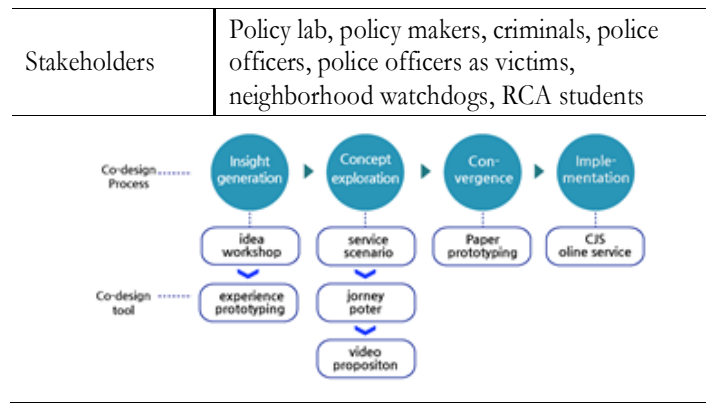


Figure 1. Co-design process for UK CJS (Criminal Justice System) online project





Co-design process	Insight generation		Concept exploration	Convergence
Co-design tool				
	Idea workshop	Experience prototyping	Service scenario	Paper prototyping
Roles as participants	Informant	Design partner	Informant	Co-creator
Roles as designers	Provider	Offer	Provider	Facilitator

Table 4. Co-design tools for UK CJS (criminal justice system) online project

#### 4-2. Ghanaian sanitation opportunities with ‘Clean Team’

The ‘Clean Team’ project led by the US IDEO is a case of collaborating with a range of specialized agencies with intent to improve the unhygienic toilets for Kumasi residents (The Field Guide to Human-Centered Design, 2015). In the insight generation step, they observed consumers and performed shadowing, while the residents participated as informants in interviews and research using idea cards intended to collect the information about hygienic conditions they needed. Service designers derived broad insight from the stakeholders by using idea cards and being involved as providers. Then, based on the ideas derived from user research and workshops, in the concept exploration step, they developed a business model relevant to toilet prototypes which were inexpensive, clean and convenient in consultation with an expert group. Through a number of workshops, they developed and provided different versions of portable toilet prototypes for Kumasi citizens, who in turn used the prototypes and gave feedback to the IDEO about preference, maintenance and reasonable prices, participating as informants. Also, the service designers used the feedback to design a service associated with many other fields. Hence, the ‘Clean Team’ project successfully established a service process involving portable toilets for clean and healthy life of Ghanaians and garbage collection in collaboration with multiple agencies.

Field	Public service
Organizational status	Private organization / IDEO(US)
Stake-holders	IDEO, Kumasi citizens, IFUP, Unilever, WSUP

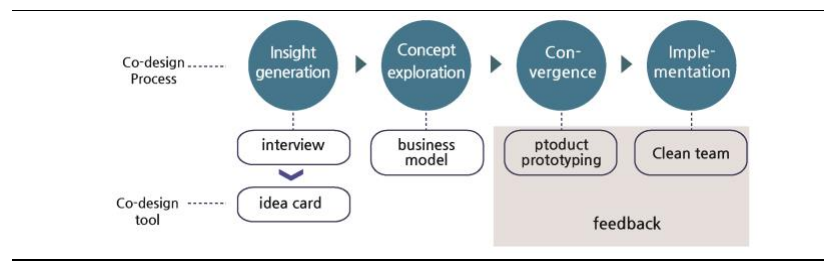


Figure 2. Co-design process for Ghanaian sanitation opportunities with 'clean team' project




Co-design process	Insight generation		Concept exploration	Convergence
Co-design tool				
	interview		business model	produce prototyping
Roles as participants	Informant	Informant	User	Informant
Roles as designers	Provider	Provide	Guide	Provider

Table 5 Co-design tools for Ghanaian sanitation opportunities with 'clean team' project

#### 4-3. 'Knee High Design Challenge' for UK children's welfare

The 'Knee High Design Challenge' initiated by the UK Design Council is a public welfare project for children in impoverished areas (Knee High Design Challenge: Solutions Paper, 2016). Policy makers, private entrepreneurs and parents teamed up to undertake the welfare program for children and parents in poverty. In the insight generation step, expert and consumer groups participated as design partners to observe children in poverty and conceive specific ideas. In the concept exploration step, they created service scenarios based on workshops to develop the service concept of each team. The stakeholders participated as co-creators to collaborate with the team members in coming up with service scenarios. In the convergence step, they carried out the service experience prototyping based on the service scenarios. The service designers were involved in the process as facilitators for a tangible and effective service implementation. Also, in this case, they continued to hold workshops for children and teams to test the outcomes, with all participants serving as co-creators. As a result, they successfully established the 'Creative Homes' service involving experts from many different fields and ensured an easy accessibility to facilities for children, a continuous positive daily life for families and self-confidence and empowerment for parents. Also, as an additional service leveraging technology, they developed an app offering clear and easy-to-access information about a broad range of activities and supports for children aged 5 and under. Also, the interactive 'Pop Up Park' service allows parents and children to play diverse games while interacting. This case of utilizing a co-design process shows local governments and policymakers that a new service or product can contribute to health and welfare of local residents.

Field	Public service
Organizational status	Non-governmental organization / Design Council
Stake-holders	Public policy makers, local parents, children, public health and children's development staff



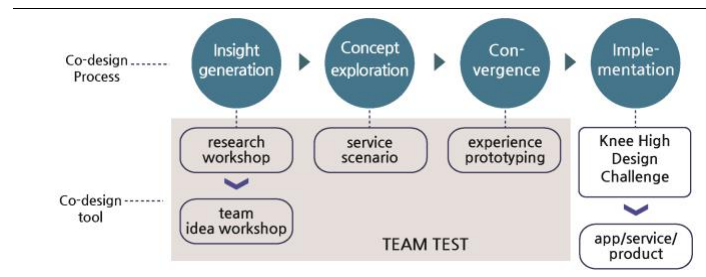


Figure 1 Co-design process for 'Knee High Design Challenge' project




Co-design process	Insight generation	Concept exploration	Convergence
Co-design tool			
	idea workshop	service scenario	experience prototyping
Roles as participants	Design partner	Co-creator	Co-creator
Roles as designers	Offer	Facilitator	Facilitator

Table 6 Co-design tools for 'Knee High Design Challenge' project

#### 4-4. UK 'GP Medical Service'

The 'UK Medical Service' led by the UK Policy Lab is a case of stakeholders holding workshops before the enforcement of the relevant policymaking process (Policy Lab, 2015B). In the insight generation step, participants in the workshops formed 3 teams to derive a persona from a three-step visiting to clinics, and were given the challenge cards prescribing specific situations. The stakeholders participated as informants providing some information about many different situations that might arise, while the service designers provided specific situations and tools. In the concept exploration step, they analyzed problems relevant to patients' experiences of GP surgeries derived from the workshops and redesigned the service, assuming patients could see doctors with no wait time, to perform the service experience prototyping. Here, different stakeholders participated in these activities as design partners to create ideas combined with diverse technologies and to share them in creative ways. In this process, the service designers offered how to implement the service and use the co-design tools. Also, they performed a role play in the service space they implemented in the convergence step. Here, the stakeholders participated as co-creators to formulate an actual service, while the service designers served as facilitators. This case of an inhouse workshop within the government provides insight for policymakers into how consumers will interact with a new service before a policy is enforced.

Field	Public service
Organizational status	Government agency - Policy Lab
Stake-holders	Policy Lab and policy makers not only in the fields of taxation and pension but also in Scottish government and UK Trade & Investment

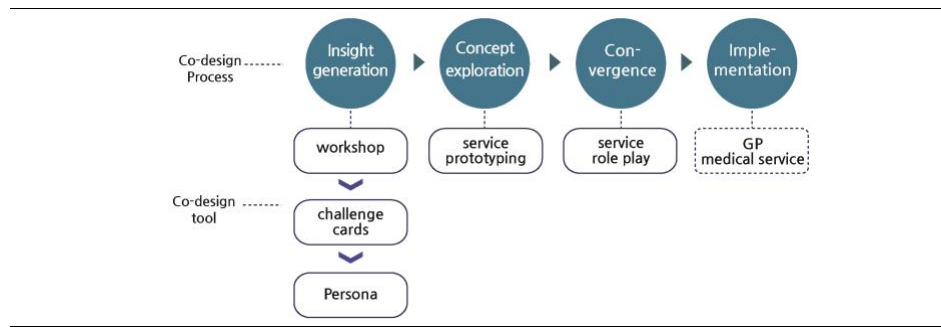


Figure 4. Co-design process for UK 'GP Medical Service' project




Co-design process	Insight generation	Concept exploration	Convergence
Co-design tool			
	workshop	service prototyping	service roleplay
Roles as participants	Informant	Design partner	Co-creator
Roles as designers	Provide	Offer	Facilitator

Table 7 Co-design tools for UK 'GP Medical Service' project

#### 4-5. Implications of Western public policy and service cases

The analysis of the aforementioned overseas cases in terms of the co-design process and stakeholders' participation levels in the public service and policymaking process shed light on the following. First, despite the different attributes and outcomes of the projects, the four cases largely underwent four steps of the co-design process, i.e. insight generation, concept exploration, convergence and implementation. Notably, the stakeholders actively utilized the co-design tools in the 'convergence' step to conceptualize the services. Mostly, consumers participated as co-creators, whose participation level was highest in the convergence step where actual services were formulated. Therefore, designers served as 'facilitators' defining problems based on consumers' insight and collaborating with participants and experts to realize consumer-oriented services.

Co-designed tools involved different types of prototyping. The UK GP Medical Service adopted the 'service experience prototyping,' which predicted the service settings and stakeholders, who used boxes, color paper and clay to express insight. The IDEO's 'Clean Team' had experts apply consumers' insight to 'product prototyping,' which allowed consumers to test the usability of products and alter them accordingly prior to the service implementation. The prototyping tools suitable for different types of services were salient in the Western cases and varied with the completeness of implementation and the purposes of the services over time. The early prototyping was used to define overall service and space settings and to gain ideas, whereas the late prototyping was used to materialize the derived insight and to test the final services, which paralleled those to be implemented. That is, the co-design tools utilized in each step of public service and policy development imply the following. First, the policy formation, or insight generation, involves a project specific 'idea workshop' and consumer oriented research to determine policy stakeholders' demands and perception of problems. Second, the concept exploration, or policymaking, involves 'service

scenarios' and 'rapid prototyping' to predict and visualize a service and redefine the foregoing problems. Third, the convergence for policy implementation involves prototyping a service and goods (e.g. 'CJS Online Service' project's 'paper prototyping' and 'Clean Team' project's 'product prototyping') or 'experience prototyping' of service space when an idea about a service is materialized (e.g. Knee High Design Challenge). The prototyping tools predict various situations that may arise among stakeholders in service settings. For example, the 'service role play' utilized in the 'GP Medical Service' project predicted the service space and defined each stakeholder's role. Finally, the policy implementation or enforcement involves implementing and evaluating a service and an iterative process of returning to the preceding process, if problems arise, to define problems and redefine stakeholders' demands.

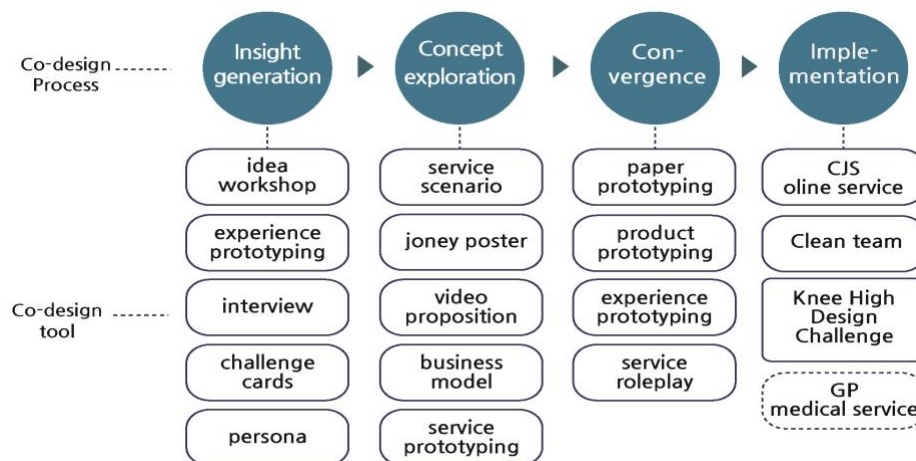


Figure 5 Analysis results of co-design tools utilized in co-design processes in the West

## 5. Analysis of domestic public service and policymaking

The following sections analyze the utilization of co-design tools in the public service and policymaking process in Asian culture, focusing on Korea's participatory policy design platform, 'Citizens Policy Design Group'. The analysis findings are compared with those of the West to suggest the desirable utilization of co-design tools and the roles of service designers in domestic public service and policymaking.

### 5-1. Overview of 'Citizens Policy Design Group' initiative

In domestic policymaking process, the government draws on the 'Citizens Policy Design Group' to pursue a consumer-oriented service in replacement of the existing supplier-oriented policy service (Yoon, et al. 2014). The 'Ministry of Government Administration' and the 'Ministry of Industry, Trade and Energy' have collaborated with a design-related public entity, 'Korea Institute of Design Promotion' for the 'Citizens Policy Design Group' utilizing the service design methods. Since 2014, 26 government agencies and 10 metropolitan cities have piloted the 'Citizens Policy Design Group.' In 2015, 248 policy projects adopted the initiative. In 2016, 382 policy projects for consumer-oriented policy services employed the initiative, involving 44 central government agencies and 338 municipalities. The Citizens Policy Design Group consists of a service design functioning as an expedition guide, two civil servants serving as policy guides (one in charge of Citizens Policy Design Group and the other of projects), and citizens as expedition members (1 expert, 2 design majors and 3 policy consumers) (Gov 3.0 Citizens Policy Design Group Operation Manual, 2016). The Citizens Policy Design Group builds a sense of fellowship and trust between civil servants

and citizens, laying the foundation for interactions (Gov 3.0 Citizens Policy Design Group, 2015).

## 5-2. Analysis of 'Citizens Policy Design Group' Operation Process

The 'Citizens Policy Design Group' originally aimed to involve citizens in the government's public service and policy development process by adopting service design methods (Gov 3.0 Citizens Policy Design Group Operation Manual, 2016). The initiative has borrowed from a service design process, or the 'Double Diamond' model. Its process comprises 'Understand – Discover – Define – Develop – Deliver' steps, each of which sets service design methods, goals and stakeholders' roles to perform a project (Case-based Citizens Policy Design Group Operation Manual, 2017).

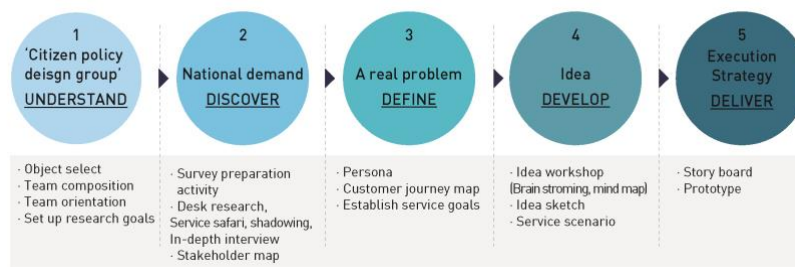


Figure 6 Process of Citizens Policy Design Group

## 5-3. 'Citizens Policy Design Group' cases selected

Among 20 cases covered in the success case book out of 248 'Citizens Policy Design Group' projects in 2015, notably successful cases of the central and local government agencies were selected to determine the differences in the characteristics of concerned agencies and the processes in relation to the typology of services. As in the analysis of overseas cases, co-design tools used in each step of a co-design process, stakeholders' participation levels and designers' involvement were analyzed. For an in-depth analysis of tools utilized in each project, the service designers and officers in charge who joined the 'Citizens Policy Design Group' were interviewed. The findings on the 'Citizens Policy Design Group' were compared with those on overseas cases to find out differences and similarities and thus to derive implications for general trends in utilizing design in public service and policymaking.

# 6. 'Citizens Policy Design Group' cases study

## 6-1. Central government's 'Citizens Policy Design Group' project: Police Agency's 'Happy Town with CPTED'

The 'Happy Town with CPTED' project utilizing the 'Citizens Policy Design Group' organized by the National Police Agency in 2015 commenced following the traumatic experience of violent crimes in Jidong, Incheon to address the problems related to the existing hardware environment improvement (Gov 3.0 Citizens Policy Design Group Success Case Book, 2015). The insight generation involved a workshop to discuss the community security issues, an on-site analysis to investigate the town's issues and a field research with interviews, surveys and observation including a 'journey map'. While interviewing the officer in charge participating in the project, the service design method was utilized to develop a consumer-oriented policy, which received a partially positive response.

Yet, the officer in charge failed to find meanings about his roles in the group due to the unfamiliar design-oriented method and terminology used in the preceding step, leading to a low empathy with the utilization of service design methods in policymaking process. Thus, service designers led the interview and observation while stakeholders participated as informants. The concept exploration involved research, workshops and brain storming sessions to derive a concept that 'Jidong is safe enough to visit and stay'. The stakeholders used their specialized knowledge and participated as design partners, whereas the service designers collected stakeholders' opinions. Then, they derived ideas such as a community center, a security center and intelligent street lights with CCTV cameras and composed relevant service scenarios, while the service designers used LEGO blocks to visualize the service settings. Also, the 'Citizens Policy Design Group' developed many other space and service settings including experience and education programs to reinforce the existing CPTED project and improve the 'environment, behavior and awareness'.

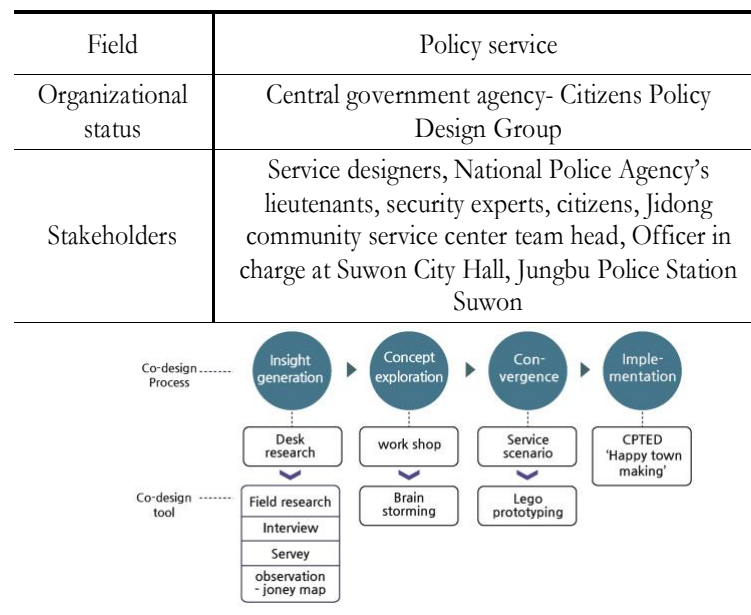


Figure 7. Co-design process for Police Agency's 'Happy Town with CPTED' project




Co-design process	Insight generation	Concept exploration	Convergence
Co-design tool			
	Interview	Brain storming	Lego prototyping
Roles as participants	Informant	Design partner	Design partner
Roles as designers	Provide	Offer	Offer

Table 2 Co-design tools for Police Agency's 'Happy Town with CPTED'

## 6-2. Municipal government's 'Citizens Policy Design Group' project: 'Young Jeonnam with Youth+Work'

Yoori Koo, Hyeonsoo Ahn

Analysis on the Utilization of Co-design Practices for Developing Consumer-oriented Public Service and Policy from the Viewpoint of Service Design

Linköping University Electronic Press



Jeonnam municipal government's citizens design project titled 'Young Jeonnam with Youth + Work' in 2015 was intended to boost the municipality's economy by reversing the falling trend in its young population which was already below the national average (KIDP, 2015). The Citizens Policy Design Group included policy consumers, youths, officer in charge, entrepreneurs, service designers and undergraduates. The insight generation involved a brain storming workshop to share ideas on 'Why youths?' with participants acting as design partners. The ideas coupled with the '5 Whys' technique clarified the lack of youth policy options, government-driven initiatives lacking in differentiation from other municipalities and other reasons for young people to opt out of Jeonnam with participants serving as informants. From the defined problems they derived a persona representing the young locals to materialize the ideas as a consumer journey map charting a process of a young man returning to Jeonnam from Seoul.

Yet, the ideas derived in the insight generation step did not undergo the prototyping but went straight to solutions after interviews, which was attributable to stakeholders and consumers' failure to presuppose specific services and give profound insight into problems. That was why general solutions to problems derived in the preceding step arose from the service modeling in the convergence step. The service designers implemented an 'emergency stand-by' service by developing a model based on the ideas derived from the overall process. This project resulted in a service including information such as success stories and technical supports for returning farmers and young entrepreneurs.

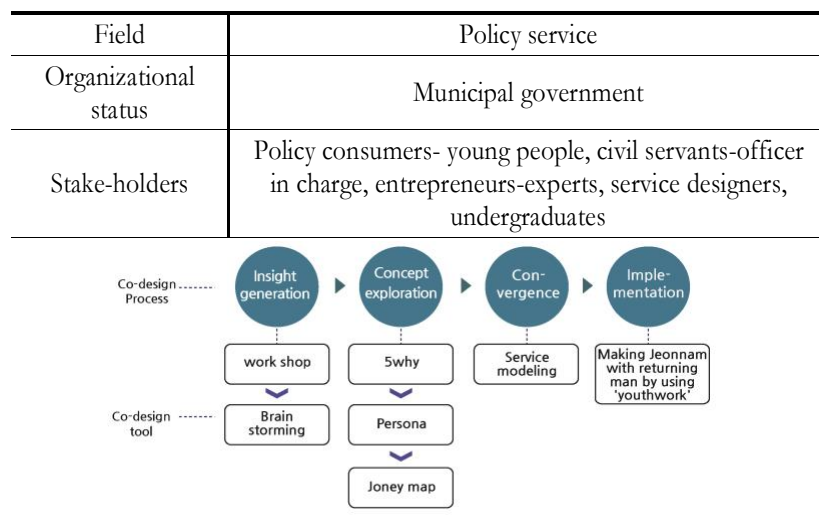


Figure 8. JEONNAM GOVERNMENT's Young Jeonnam with Youth+Work





Co-design process	Insight generation	Concept exploration		Convergence
Co-design tool				
	Brain storming	Persona	Journey map	
Roles as participants	Design partner	Informant		Tester
Roles as designers	Designer as offer	Provide		Guide

Table 9. JEONNAM GOVERNMENT's Young Jeonnam with Youth+Work

### 6-3. Implications of domestic 'Citizens Policy Design Group' cases analyzed

The analysis of the domestic cases of 'Citizens Policy Design Group' projects showed the following co-design processes and participation levels in public service and policymaking. The participation levels in both central and municipal governments' 'Citizens Policy Design Group' projects as well as the co-design tools utilized in the co-design processes varied. Still, 'brain storming' was used as a co-creation activity understandable to participants. Specifically, the central government agency used in the convergence step the 'LEGO prototyping' as a co-design tool to derive ideas, with stakeholders utilizing their experiences and specialized knowledge while participating as 'design partners'. By contrast, the municipal government derived ideas directly from the workshop followed by a 'persona' and 'journey map' in the concept exploration, prior to the 'service modeling'. This case applied the service design method but skipped over the insight generation, which decreased the participation level. That is, in comparison to the co-design tools utilized in the advanced cases of the West, domestic cases were characterized by the tools requiring greater roles and involvement levels of designers and by specialized tools unfavorable for stakeholders' active participation and expression of profound insight. As designers played predominant roles, it was difficult to derive consumer-oriented insight, resulting in general solutions to superficial problems.

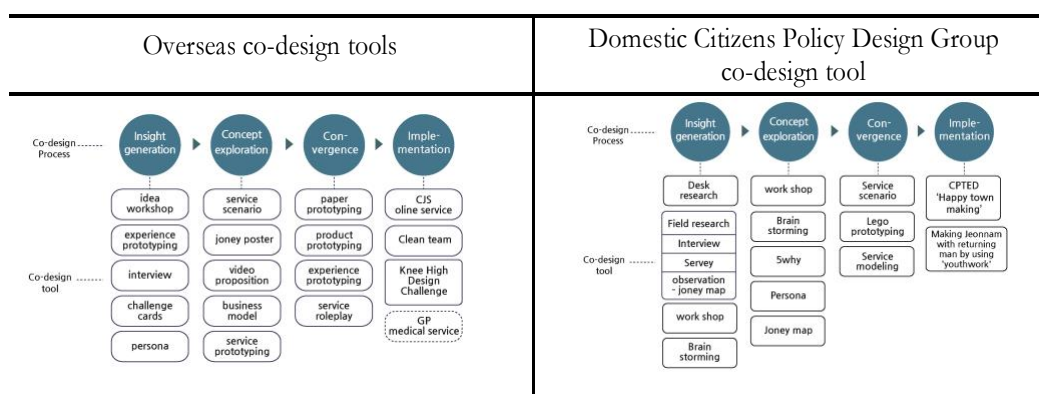


Figure 9. Overseas vs. domestic co-design tools

## 7. Conclusion

This comparative analysis of overseas and domestic cases of public policies and services highlighted the following implications concerning the utilization of co-design tools. First, the overseas cases in advanced countries utilized co-design tools (e.g. GP service utilizing challenge cards and service role playing) that helped policy consumers or stakeholders to easily understand the relevant services, which led to more active participation of consumers in public service and policymaking. In contrast, the domestic case of a municipal government's 'Citizens Policy Design Group' project drew on a specialized service design method, paying less attention to co-design tools reflecting the consumers' understanding (e.g. a persona and journey map). That is, the high involvement of service designers made consumers participate as informants in each step, leaving much to be desired about the consumer-oriented insight. Therefore, the domestic case exposed a limited utilization of co-design tools and the lack of designers' roles in encouraging stakeholders to engage in creative activities. This finding seems ascribable to a paucity of skilled service designers and the government-enforced standardization of service design methods and manuals intended to apply the concept of service design to its public policymaking process in a short period of time. Also, the analysis findings of this study have the following implications concerning the roles of service designers in utilizing a co-design process in public service and policymaking.

First, service designers should be capable of design a co-design process suitable for the typology and scope of a service to be implemented prior to embarking on a public policy and service development project. That is, service designers should estimate the timeline and scope of a project in advance and prepare for a workshop to organize stakeholders as collaborators for the service.

Second, in arranging a workshop with diverse stakeholders, it is necessary to develop a co-design tool that fits the understanding and involvement of consumers as well as the purpose of each codesign step. First, in the insight generation, service designers should utilize tools that enable participants to ponder upon given issues and that allows a swift implementation of their ideas and initial insight. In the concept exploration, service designers should be able to utilize 'service scenarios' and 'rapid prototyping' to fast visualize the insight found in the preceding research and define problems. In the convergence step later in the process, service designers should utilize the most collaborative and active co-design tools to develop an experience prototyping tool conducive to foreseeing the spatial settings and overall experiences of the service of interest. In the final implementation step, service designers should apply a co-design tool capable of evaluating the implemented service and undertake an iterative process of returning to the preceding steps to redefine and confirm any problems that might arise afterwards. Utilizing such a co-design tool will enable project members to continuously define any fundamental problems of a service, and elicit straightforward and effective solutions to such problems.

Third, service designers need to delve into a method of motivating stakeholders and consumers to participate in the process through workshops, which means stakeholders and consumers should continuously impart a meaning to their participation in a project, and personally feel the advancement of the project while partaking in it as a member. For example, it is important to use and deliver a tool that allows stakeholders to communicate their past and present experiences via role playing and story-telling based on impromptu solution scenarios and that borrows from a range of games to facilitate the process as well as voluntary participation of stakeholders and consumers in workshops. In other words, service designers need to develop a co-creative tool based on not specialized methods but stakeholders' understanding and continuously explore how to deliver the progress of the tool to stakeholders.

Lastly, service designers should act as skilled facilitators helping stakeholders to intuitively express their ideas so as to realize the essential value of co-creation in public service and policymaking by virtue of the co-design tools they develop. To that end, developing a



creative and consumer-oriented co-creative tool applicable to the public sector is a core competence required of service designers.

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# Tools for collaborating and interacting in Living Labs – an exploratory case study on JOSEPHS®

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## Abstract

Living Labs serve as a novel form of collaborating and developing innovation. As interactive, physical settings, they hold several possibilities of facilitating co-creation with diverse stakeholders. Research on tools and methods used in Living Labs is still under development. To contribute to this research, this paper investigates the use of tools for interaction in a Living Lab. A longitudinal exploratory case study on the JOSEPHS® in Nuremberg was applied. This study finds that (1) there are three categories of tools used for integrating visitors, (2) interaction with visitors in a Living Lab depends on the factors time and commitment and (3) tools for different integration types need to be matched to the determinants of interaction. The study contributes to literature on co-creation and interaction in Living Labs by highlighting that visitor roles should not be perceived as fixed user categories, but as the variable result of interaction with applied tools.

**KEYWORDS:** co-creation, living labs, tools, interaction

## Introduction & Motivation

Shortening life-cycles of products and services lead to an increased demand of development approaches to reduce uncertainties and to fasten the innovation process. In the past two decades, with open innovation and the sharing economy developing rapidly, a vast amount of new approaches have emerged that put the user on eyesight with the producer in the innovation process. Today, large parts of the knowledge economy are based on the input of users and communities to solve technological and organizational problems (Harhoff & Lakhani, 2016). While previous research has focused on online sources of innovation such as contests, communities and toolkits, new innovation formats have developed, shifting open and co-creative innovation to physical spaces. Next to hackathons, design jams, and maker spaces, Living Labs have emerged a new approach for developing innovation in recent years (Dutilleul et al., 2010). These physical environments give multiple stakeholders the possibility to innovate and prototype in real-life settings. Living Labs enable a coupled open innovation process as they provide access to current developments (inside-out) as well as obtain

feedback and new insights (outside-in). To date, research on Living Labs has, amongst others, focused on aspects like network actors, the underlying methodology and innovation activities (Leminen et al., 2012; Leminen & Westerlund, 2017; Roth & Jonas, 2018).

First attempts to provide an overview of Living Labs are driven by the initiatives InnoLab and the European Network of Living Labs (ENoLL). The latter currently lists 411 Living Labs in its database, although the list is not complete. Despite this growing number of Living Labs, there are many open questions regarding characteristics of Living Labs, underlying processes that are happening in these environments and the methods creating value at these open infrastructures (Veeckman et al., 2013; Ballon & Schuurman, 2015). This paper seeks to shed light on user-integration tools in physical innovation spaces and asks: What tools for open innovation are used in the interaction with visitors of a Living Lab? What learnings can be derived from the usage of the tools?

## Related Literature

With the advent of the Internet and the increasing digitization, markets have undergone a radical transformation and the traditional, closed approach towards innovation was revised by many companies at the end of the 20<sup>th</sup> century (Brant & Lohse, 2014, Chesbrough, 2006). The increased connectivity has led to consumers becoming more informed and aware about the products they buy and consume. These empowered consumers (called prosumers by Toffler, 1980) exhibit their needs and feedback, and seek to play a more active, shaping role in the product development process of companies as they are dissatisfied with available product choices (OHern & Rindfleisch, 2010). The resulting requirements on the complexity of products and the trend towards consumer centricity require new forms of innovation development. As a consequence the open innovation paradigm arose which finds a significant adoption in industry. Open innovation simply means opening and diffusing boundaries of corporations and their environments (Chesbrough, 2006). According to Gassmann & Enkel (2006), open innovation can take the form of three processes:

- The outside-in process refers to the use of external sources of innovation. This involves the transfer of knowledge from customers, suppliers, partners or even universities and competitors.
- The inside-out process happens when internally developed ideas are out-licensed to external partners. Main reasons to do so lie in distribution partnerships, collaborative development or to profit from a developed technology that is not used internally.
- The coupled process combines the outside-in and inside-out process, but rather than just sharing resources and expertise, companies collaborate closely as for example in form of a joint venture.

These processes were developed from a business perspective. In fact, open innovation with customers was mainly seen as an outside-in process, in which customers were seen as sources of ideas for new products or services (Brunoe et al., 2014). Meanwhile, this perspective has shifted towards consumer-centricity. Instead of exploiting the knowledge of the consumers, knowledge is co-created with users. Co-creation therefore can be perceived as a coupled process in which users generate ideas for new products and services, test prototypes and remain attached to the company beyond the development process (Brunoe et al., 2014). Thus, co-creation is a “form of market or business strategy that emphasizes the generation and ongoing realization of mutual firm - customer value. It views markets as forums for firms and active customers to share, combine and renew each other’s resources and capabilities to create value through new forms of interaction, service and learning mechanisms” (Minghetti, 2014, p.14)

## Participants and self-selection

Opening up the innovation process and co-creating products and services raises the question of suitable participants for this open process (Matthing et al., 2006). Since satisfying market needs is considered a main requirement for the success of new products and services, research is directed towards identifying and classifying the source of these needs. The literature lists numerous typologies; Scholarly work relates to users (Kristensson et al., 2008; Pillar et al., 2013), consumers (Füller et al., 2009; Vernet & Hamdi-Kidar, 2013) customers (Carbonell et al., 2012; Gustafsson et al., 2012) or co-creators (Prahalad & Ramaswamy, 2004). Even within these definitions, there are numerous concepts that determine which traits an individual must possess in order to assume a specific function in the innovation process. The most well-known concept is possibly the lead user (von Hippel, 1986). But with emergent nature consumers (Hoffman et al., 2010; Vernet & Hamdi-Kidar, 2013), user innovators (von Hippel, 2005), co-producers (Vargo & Lusch, 2004) and ordinary consumers (Kristensson et al., 2008; Wendelken et al., 2014) there are several other concepts that categorize the unknown crowd of active and proactive stakeholders of innovations. These different concepts and categories help us to understand the tremendous potential for innovation that lies outside the boundaries of organizations. However, the identification, selection and acquisition of individuals for a planned innovation project can pose a demanding challenge, alongside defining the 'best way' how to design and arrange for co-creation activities (Matthing et al., 2006). Some organizations therefore initiate a "broadcast search" or self-selection, inviting everyone who deems themselves capable of solving an innovation challenge to the innovation process (Jeppesen & Lakhani, 2010).

## Integration modes of participants

Besides knowing what different types of stakeholders are to be considered in co-creation, the question arises how they are to be involved in the innovation process. According to Jonas et al. (2014; cf. Alam, 2002; Edvardsson et al., 2010), stakeholder integration is implemented in the modes passive integration, reactive integration and mutual co-creation.

- In the mode "passive integration", stakeholders are integrated in the innovation process without their knowledge. Stakeholders are observed in order to gain insights from their behavior without direct communication.
- Reactive integration occurs when a stakeholder is answering a request for feedback. Surveys or interviews serve as an example of this mode as information is obtained from an initial trigger.
- Mutual co-creation happens when the stakeholder engages in active dialogue and the joint development of new products or services (Prahalad & Ramaswamy, 2004). Mutual co-creation represents stakeholder interaction on eyesight. Gustafsson describes this "as a frequent, bidirectional, and face-to-face communication process that is used when attempting creative problem solving" (Gustafsson et al., 2012, pp. 314-315).

## Living Labs for open innovation

Living Labs serve as a novel approach to open innovation and fill the gap between user-centered methods and participatory design (Dell'Era & Landoni, 2014). Although multiple perspectives on the concept exist, the term "Living Lab" typically describes a physical test environment in which companies, public authorities and citizens cooperate and test new services, products and technologies (Näätänen et al., 2006). As a mixture between open innovation and user-centered research, the core of the concept of Living Labs is that the testing and generation of ideas happening in a simulated "real life" context leads to better insights regarding the practical suitability of the tested products and services (Leminen et al., 2012). Products and services are not just tested but also co-developed with potential users, resulting in an end-product that precisely meets the customers' needs and demands

(Leminen et al., 2012).<sup>1</sup> But Living Labs can be used beyond the testing-stage. Living Labs can also serve as a starting point for innovation as they enable users to explicitly exhibit their experiences, knowledge and daily needs (Bergvall-Kareborn et al., 2009).

According to Roth et al. (2014) four types of Living Labs can be classified by longevity and the operating principle. The first category describes Living Labs as existing temporary and being built by a specific company. The second category includes facilities that are operated by a specific company but whose operation is long term. The third and fourth categories describe Living Labs operated by intermediaries, either event-based or long-term. Leminen et al. (2012) offer a categorization focusing on the operators of Living Labs: utilizers (typically companies), enablers (public authorities and NGO's), providers (research organizations) and users.

These different forms of Living Labs underline the impact the approach can have for different actors. While companies can develop and test prototypes with potential users, Living Labs also serve as innovation structure to tackle societal issues, raise awareness about topics of public interest, facilitate knowledge transfer and identify user needs (Greve et al., 2016). Living Labs are accordingly defined as “a platform for interactive co-creation and innovation which allow for direct exchange with the public, customers, users and other stakeholders” (Matzner et al., 2018, p. 16).

## Participant involvement in Living Labs

According to Bergvall-Kareborn and Stahlbrost (2009), three key elements are essential characteristics of Living Labs: openness, realism and empowerment of users. These three elements also regulate the tools that can be used in the Living Lab to interact with stakeholders. Realism is often achieved through the use of physical artifacts (Dell'Era & Landoni, 2014). Tools used in Living Labs include co-creation techniques and innovation research methods, but also market research (Leminen et al., 2012; Magadley & Birdi, 2009). Franz (2015) argues that the tools used in Living Labs should better exploit the benefits of interactivity and the real-life environment and go beyond traditional and proven tools. However, few studies have investigated the facilitation and use of tools in the context of Living Labs (cf. Greve et al., 2016; Beutel et al., 2017; Leminen & Westerlund, 2017). Existing studies focused on the development process of new products and services (Feurstein et al., 2008) or on the use of individual tools. For this reason, this paper aims to shed light on the following research questions:

RQ 1: What tools are used in the interaction with visitors of a Living Lab for open innovation?

RQ 2: What learnings can be derived from the usage of the tools?

## Methodology

In order to gain in-depth insights on the usage of tools in Living Labs, a qualitative research design is particularly well suited. As stated by Möller (2017), especially when investigating new and complex topics such as Living Labs, it is appropriate to include the context of the examination object in the study. As an open, qualitative approach, case studies allow for the generation of new insights and an understanding of underlying processes and are therefore suited for the exploration of new phenomena such as the processes and practices in Living Labs (Eisenhardt & Graebner, 2007; Yin, 2009). To explore the usage of tools in the interaction with self-selected visitors the research design of an exploratory single case study was chosen (Yin, 2009). To investigate tools for the co-creation with customers, users, non-

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<sup>1</sup> Concepts such as participatory design (Björgvinsson et al., 2010), commons (Seravalli, 2014) and publics in the making (Lindström & Ståhl, 2014) are closely related perspectives on this topic.

users and other stakeholders of an innovation, an accessible, established open Living Lab needed to be selected, which would provide access to information about their applied tools.

## The Case

The case study is conducted at the open innovation lab JOSEPHS®, a Living Lab located in downtown Nuremberg, Germany. JOSEPHS® resembles an intermediary platform that facilitates co-creation and collaboration between users and companies. This is achieved by a publicly accessible physical place where companies have access to five co-creation spaces, to present, discuss and evaluate products or service prototypes. Visitors are invited to interact with the prototypes, experience them and generate feedback. Thereby, visitors are gaining the opportunity to play a significant role in the early or in the late phases of the innovation process. No selection of visitors is taking place at JOSEPHS®: the Living Labs' operating principle relies on broadcast search and self-selection of co-creators coming to the space as it is open during the local retail opening times and accessible for free. At JOSEPHS®, the companies' innovation projects are organized in three month periods under the umbrella of a common theme, in which a variety of co-creation tools may be used. This allows for an agile innovation process, as companies can evaluate, compare and alternate prototypes according to the consumer feedback. Since its' founding in May 2014, JOSEPHS® visitors had the opportunity to co-create in about 76 different projects. To initiate and lead the interactions in the Living Labs' innovation spaces, JOSEPHS® operates with a team of innovation guides, who welcome and encourage visitors to try and test prototypes as well as to give feedback.

## Data Collection & Analysis

To gain insight into tool implementation for co-creation with visitors in the open innovation space, this case study analyses the set-up of co-creation spaces of seventy-one innovation projects in the Living Lab JOSEPHS®. The case study includes data of every innovation project at JOSEPHS®, from May 2014 until August 2017. Therefore, a large variety of individual cases was covered, ranging from large companies to start-ups, from product to service-focus and from early to late phases of the innovation process.

Various data sources were used for the realization of the exploratory case study: observations, project documents and photographic documentation. The collection of the primary data in form of observations was carried out by a team of trained researchers in the period from May 2014 until August 2017. The combination of data sources enables the understanding of the specific context and increases the reliability of the data evaluation. For the data analysis, the various sources of data were sighted, structured and analyzed in a step-by-step process depicted in table 1.

Data Analysis Phase	Activity & Outcome
1 Structuring the data	<ul style="list-style-type: none"> <li>Sighting the data and extracting information about the tools used at the innovation spaces in order to derive an overview of all tools used at the innovation spaces, sorted chronologically and by theme world.</li> </ul>
2 Pattern analysis of the data	<ul style="list-style-type: none"> <li>Iterative analysis of data to identify patterns in respect to the used tools across projects and theme worlds.</li> </ul>
3 Derivation of evolutionary phases	<ul style="list-style-type: none"> <li>Building on the previously identified patterns, three distinct phases of tool application were derived.</li> </ul>
4 Data analysis according to integration modes	<ul style="list-style-type: none"> <li>By sorting the used tools regarding their mode of integration, the predominant type of integration was identified for the tools used in each phase.</li> </ul>
5 Workshops for validation of findings	<ul style="list-style-type: none"> <li>In order to validate the results from the data analysis, two workshops with practitioners from the JOSEPHS® were conducted, resulting in adjustments and enriched findings.</li> </ul>

Table 1: Illustration of the qualitative data analysis process

Two expert workshops with research and operations personnel from JOSEPHS® were held to support and validate the preliminary findings. The expert workshops took place in April

2017 and were captured via photographs and written documentation. These data, interviews and the secondary data were analyzed through an abductive approach according to Siggelkow (2007), building on literature and models on co-creation, applying an iterative pattern matching logic (Yin, 2014; Gibbert & Ruigrok, 2010).

## Findings

The evaluation of the collected data generated a number of insights on the usage of tools, modes of interaction as well as requirements on tools in the Living Lab JOSEPHS®. First, the analysis of the interactions with visitors shows that the tools for mutual co-creation, for reactive integration and for passive integration have been implemented in chronological phases; the interaction with visitors and learnings derived had a substantial impact on the selection of the tools. Second, longitudinal case data puts forward that the implementation of tools for reactive visitor integration is the dominant mode in the analyzed Living Lab. Third, the case study reveals that co-creation in the Living Lab JOSEPHS® is not only defined by the tools and the mode of interaction, but foremost characterized by the enthusiasm of the co-creating visitor and the available time for interaction.

### Evolutionary phases of tool usage

The tool implementation shows chronological phases: In the first phase, from May 2014 to January 2015, JOSEPHS® was designed as an experimentation room for companies. Company representatives were asked to be present and engage in active co-creation with the visitors. However, it became apparent that the companies lacked the resources to be present continuously and the staff at JOSEPHS® took on the role as an innovation intermediary. In this early phase, the majority of tools used in the co-creation space can be assigned to the modes passive integration and mutual integration (observations and open discussions). However, little structure for documenting the feedback existed.

The second phase, from February 2015 to January 2017, saw increased use of reactive integration tools in JOSEPHS®. Here, emphasis lies on quantitative survey-based methods such as questionnaires to answer pre-defined research questions. In this period, the focus shifted from observational data to more structured data. This shift was partially compensated by the increased use of tools for co-creation, mainly by designing the co-creation spaces to have a special corner for post-it notes. In this phase some experimentation regarding the setting of the co-creation spaces took place. In contrast to the first phase, where the prototypes were mostly exhibited and focus was laid on interaction, it was attempted to put the visitors in a certain atmosphere to simulate real-life situations.

Period of Time	Phase	Type of integration	Tool	Times Used
May 2014 – January 2015	Phase 1	Passive Integration	Observation	7
		Passive Integration	Emotion Recognition	1
		Reactive Integration	Toolkit	2
		Reactive Integration	Questionnaire	2
		Reactive Integration	Interview	1
		Co-Creation	Open Feedback	4
February 2015 – January 2017	Phase 2	Passive Integration	Observation	8
		Reactive Integration	Voting Mechanism	6
		Reactive Integration	Questionnaire	31
		Reactive Integration	Interview	9
		Co-Creation	Open Feedback	27
		Co-Creation	Open Feedback	4
February 2017 – August 2017	Phase 3	Passive Integration	Observation	4
		Reactive Integration	Voting Mechanism	4
		Reactive Integration	Toolkit	1
		Reactive Integration	Questionnaire	5
		Reactive Integration	Interview	5
		Co-Creation	Open Feedback	7

Table 2: Usage of tools in the evolutionary phases



The third phase, from February 2017 until August 2017, is characterized by an increase in the use of more engaging tools such as semi-structured interviews. While the interviews can still be attributed to reactive integration, these tools leave room for open feedback. This phase can be seen as a synthesis of the first two phases. Although much emphasis is put on structured data collection, visitors are more openly integrated.

### Tools used in the JOSEPHS® Open Innovation Living Lab

Overall, the analysis of data from more than 3 years shows that the majority of the tools used in JOSEPHS® are used for the reactive integration of visitors. This means that visitors on the individual co-creation spaces will interact with a prototype or concept in order to subsequently give feedback. The range of this feedback is pre-determined in advance by key questions.

Tools for passive integration	Tools for reactive integration	Tools for co-creation
Indoor Tracking	Voting Mechanism	Open Feedback
Emotion Recognition	Questionnaire (open)	Open Dialogue
Observation	Questionnaire (closed)	
	Interviews	
	Toolkits	

Figure 1: Tools used in the JOSEPHS® open innovation lab

Tools for passive integration enable visitors to interact non-invasively with prototypes as the focus lies on the interaction with the prototype itself rather than the feedback obtained from the visitor after the interaction. A distinction can be made between technology-assisted tools and observation-based tools. Technology assisted tools include indoor tracking to record visitors' movement patterns within the Living Lab and emotion recognition systems to monitor visitors reactions. Observational-based tools rely on the observation through trained staff on site (shadowing). Main principle of this type of observation is to disturb the observed person as little as possible so that the behavior observed remains as natural as possible. Tools that integrate visitors in a passive way offer no opportunity for open feedback from the visitor. Some overlap with tools for reactive integration exists though (for example the critical incident technique can combine observations and interview questions).

Tools for reactive integration include more traditional innovation research tools such as questionnaires, guided interviews but also digital voting mechanisms. Within this category a distinction can be made between open and closed tools. Closed tools incorporate voting mechanisms (technology-assisted or manual) and questionnaires that use closed questions to determine a specific variable (e.g. price sensitivity, usability score). Usually the closed tools consist of a rigorous set of questions with fixed answering possibilities a visitor is not allowed to divert from. Open tools range from questionnaires with text-based answers to semi-structured interviews. Open questionnaires allow the visitors to express own thoughts, associations and ideas in their own words and in as much detail as they want. Semi-structured interviews allow for a more agile way of obtaining data and the interviewers' observations can lead additional insights. Voting mechanisms, closed and open questionnaires are typically used after the interaction with a prototype on a co-creation space while interviews are also used during the interaction with a prototype. Toolkits deserve a somewhat distinctive place in the group of reactive integration tools as they enable the visitor to create prototypes by using an interactive development environment. For example, visitors were asked to create an, from their point of view, optimal website by combining various magnetic elements on a whiteboard. Both the prototype itself can serve as a feedback while

the process of prototype creation can be accompanied by observation or interview to generate additional insights. Common element of all tools for reactive integration is that they aim at answering a predefined research question.

Tools for co-creation enable the visitor to express own thoughts, associations and ideas without a question or feedback stimulus being present. In the JOSEPHS® context, two types of tools for co-creation can be identified: object-triggered open feedback and human-triggered open dialogue. Object triggered open feedback manifests in publicly available sticky notes that invite the visitor to document new ideas on predefined “feedback walls”. Human-triggered open dialogue requires the presence and availability of JOSEPHS® staff enabling a visitor to engage in conversations. The feedback is often not documented in a structured form, but as publicly available information (often in form of sticky notes on the feedback wall) which can also serve as a source of inspiration for other visitors.

## Tools and visitor integration

During the workshops it was found out that two factors are essential for the choice of tools and their impact in JOSEPHS®: time and commitment. Time determines the length of stay of the visitor in the Living lab and poses a challenge to the respective research design, since certain co-creation spaces require a longer evaluation of the prototypes / concepts as do the used research tools. Commitment determines the intensity of the interaction and the ability of the visitors to engage in the course of co-creation.

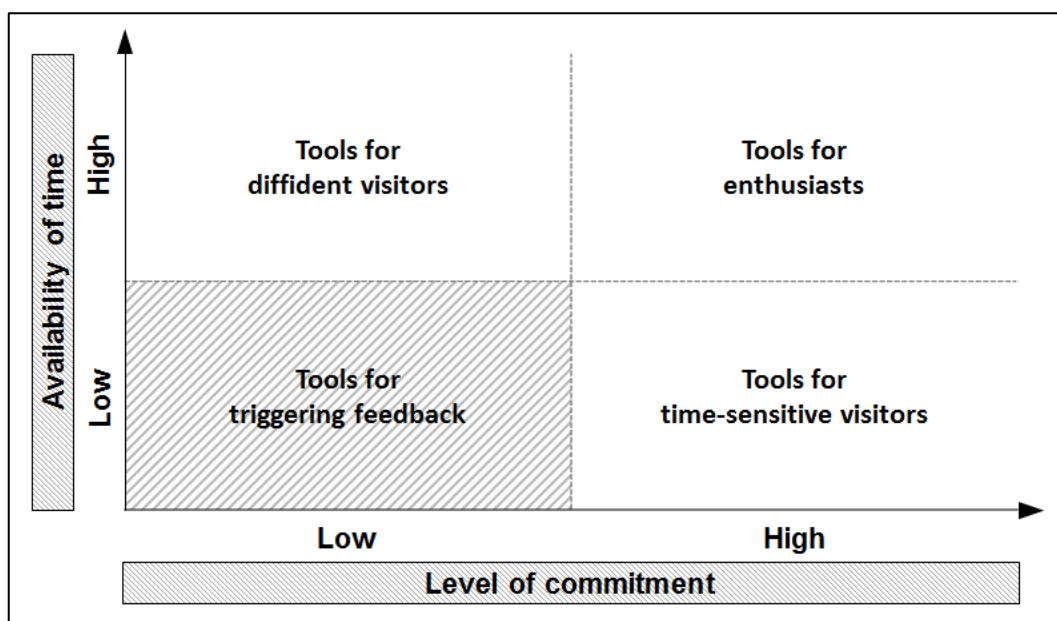


Figure 2: Determinants for visitor integration tools

The combination of these factors results in patterns of interaction the JOSEPHS® staff on site is often confronted with and which significantly influence the involvement of visitors on the co-creation spaces. Special requirements result from time-sensitive visitors, diffident visitors and enthusiastic visitors. Time-sensitive visitors are characterized by limited time available, although they have the ability to participate in the co-creation process. Diffident visitors are difficult to engage and hold the challenge of requiring an impulse to express their own thoughts and ideas. Enthusiastic visitors are characterized by a relatively high level of time available as well as by the ability to engage in co-creation. Although these visitors are very promising, challenges can arise from documenting and structuring the amount of feedback generated. Visitors that score low on time as well as commitment are difficult to engage with in the co-creation process. In some cases the use of certain triggers (questions, objects) can move the visitor to the diffident- or time-sensitive- category.

## Additional interaction factors

In addition to the listed factors, the case analysis showed that the co-creation facilitating staff at JOSEPHS® is encountering special instances of interactions, with visitor groups, school classes and children. Visitor groups show to be challenging in tool implementation because of the fact that they are not of homogeneous nature, but rather comprised of individuals with different interests and backgrounds. Therefore the initiation of a dialogue, engagement in co-creation and the documentation of the visitors' feedback cannot follow standard procedures, and not all tools are suitable to group interactions. Children are an interesting factor emerging from the context of the case Living Lab JOSEPHS® as, due to the affiliated coffee shop, JOSEPHS® is frequently visited by families. In this context, children act as a facilitating factor - if there are objects that invite children to interact, thereby gaining their attention, the accompanying adults also tend to stay longer and engage in co-creation processes; whereas the children themselves can be contributors to innovation when accompanied by their parents and provided with suitable interfaces for co-creation.

## Discussion

The case study has shown that the use of tools in the Living Lab JOSEPHS® can be categorized into three categories: passive integration, reactive integration and co-creation. Further, the use of tools has evolved over the lifespan of the Living Lab. Passive integration is not enough if the Living Lab acts as an intermediary for innovation as tools for structuring data are missing. Reactive integration enables structured data collection, but does not take advantage of the physical setting of the Living Lab thereby missing potential of particularly creative visitors. Therefore, either tools that leave a degree of freedom or a mix of tools should be used when interacting with visitors of the Living Lab. The most recent generation of co-creation spaces at the JOSEPHS® already take these findings into account. On a currently existing co-creation space (November 2017), the goal (development of future a banking service) is tried to be achieved through a mix of tools. The visitor is initially requested to choose one of three scenarios / situations for a banking service to catch interest (tool for triggering feedback). Subsequently, a toolkit and semi-structured interview are used as tools of reactive integration. The presence of a JOSEPHS® guide at the co-creation space further facilitates an open dialogue with the visitor (co-creation).

There is a substantial amount of research on who are the right partners for the course of co-creation, how they can be identified and at what stage of the innovation process they should be integrated. Although this knowledge is of high value for innovation settings such as workshops and online platforms, the results can only partially be applied to new innovation formats such as the open innovation Living Lab JOSEPHS®. Due to the nature of the innovation laboratory as an open setting, visitors can appear any time during the opening hours. Given these circumstances, no selection and no user type determination can take place. The case study shows that the interaction between visitor and physical co-creation space is determined by the factors of time and commitment. In the context of the case study, the important question is not with whom the co-creation process should happen, but how the interaction should be structured.

Existing literature (Eriksson et al., 2005) states that the integration of users in Living Labs should proceed beyond traditional methods such as focus groups and surveys. Nevertheless, up to today it is still investigated which roles and types exist among the self-selected visitors. For example, Veeckmann et al. (2013) distinguish between testers, informants, contributors and co-creators. It can be argued that this categorization only reflects the perspective of certain stakeholders in Living Labs such as companies and research partners. Further, these categories reduce the visitor's participation towards executing a specific task (e.g. prototype testing) which is reflected in the choice of tools used. This however would not be in accordance with the initial idea of co-creating products and services on eyesight. Instead,

visitors should be given the opportunity to choose their own roles when engaging in co-creation processes. More recent research by Leminen et al. (2015) proposes a similar perspective and distinguishes between visitors taking roles and making roles. While assertive visitors may opt to take a role (e.g. testing), creative visitors would make a role by actively innovating (Leminen et al., 2015). The proposed determinants of co-creation with visitors in this case study, time and commitment, state that visitor roles should not be perceived as fixed categories, but may vary.

Accordingly, co-creation spaces in open innovation Living Labs should not follow a “one-size-fits-all” principle that requires every visitor to follow the same sequence. The findings from this case study propose the idea to tailor the design of co-creation spaces and the use of tools to the interaction types so that visitors themselves can choose the most fitting integration tools. While there is already a broad repertoire of tools for reactive integration for diffident visitors, new tools need to be developed for time-sensitive visitors and enthusiasts. While tools for time-sensitive visitors should be designed to generate high-quality feedback in a short time, tools for enthusiasts must ensure that the vast amount of data is well structured and documented. Consequently, a mix of tools should be used on each co-creation space, addressing different types of interaction and optimally utilizing the potential of each visitor.

## Conclusion & Future Research

Established methods used for co-creation, such as co-creation and lead user workshops are based on the careful selection of participants, or depend on self-selection based calls for specific skills and industries (e.g. in innovation contests). The self-selection that takes place in Living Labs shifts the focus away from the type of user to the type of interaction. Based on the case study at the Living Lab JOSEPHS®, this paper proposes, that (1) there are three integration categories of tools, (2) interaction with visitors in a Living Lab depends on the factors time and commitment and (3) tools for different integration types need to be matched to the factors determining interaction.

As a single case study, this research is subject to limitations; it addresses a single Living Lab with specific characteristics that could be distinct from other forms of Living Labs. With this research design this paper shows limited generalizability of results. Future research should go beyond this single case study and investigate aspects that influence the factors time and commitment such as perception of time, self-assessment, prior knowledge, personal interest and even individual contextual reasons such as mood and atmosphere.

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# Civic engagement as participation in designing for services

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## Abstract

In spite of the increased interest on collaborative and participatory design approaches to design in public sector, less attention has been paid to the contribution of design into civic engagement in local decision-making. This paper takes an organisational perspective to explore the role of civic engagement activities in local decision-making cycles, drawing on literature and insights from a workshop with local authorities' representatives and art and design academics. Zooming out from specific civic engagement activities, the paper outlines local decision-making as a design process, proposes four scenarios, and provides insights into better understanding the decision-making cycles that lead to service transformation in local authorities. The authors argue that while design can facilitate civic engagement practices, an increased understanding of local decision-making cycles can enhance the adoption of participatory approaches in designing for public services in local authorities.

**KEYWORDS:** public sector, civic engagement, democracy, service transformation

## Introduction

In designing for policy and public services, national, regional and local governments have an imperative to innovate in order to maintain the quality of their service provision and deliver more inclusive governance scenarios with ever increasingly scarce resources. This requires governments to consider innovating the principles of decision making to deliver valuable outcomes for citizens (Christiansen & Blunt, 2012).

In recent years, there has been a growing use of design in public sector organizations for communicating, implementing, informing and envisioning future policies, products and services (Junginger, 2013). The contributions of design and designers to address the social challenges currently facing public sector have been largely explored in the design literature, i.e. proposing scenarios of provision in which citizens take a more active role, embracing 'public and collaborative' scenarios (Manzini & Staszowski, 2013), raising questions about the role of design and the designer in democratic endeavours (Junginger, 2013, O'Rafferty et al. 2016) and more recently calling designers to 'stand up for democracy' (Manzini &



Margolin, 2017). Yet, in spite of the rich literature on collaborative and participatory design approaches to design in public sector (i.e. Huybretschs, Benesch & Geib, 2017; Kimbell & Bailey, 2017; Lee, 2008) less attention has been paid to design contribution to offer modes of civic engagement in local decision-making (Design Commission, 2014) with few significant exceptions: i.e. ‘designed engagements’ as bespoke and engaging experiences for meaningful dialogue that provide rich insights into matters of public concern and preferable futures (Teal and French 2016); codesign to improve public spaces in the context of local plans (Cruickshank, Coupe & Hennessy, 2013), or the role of citizen engagement in social innovation (Davies & Simon 2012, Davies et al. 2013).

This paper takes an organisational perspective to explore the role of civic engagement in local decision-making processes in England. The first section starts out by briefly reviewing the estate of the art of civic engagement, and continues by focusing on the context of English local authorities. The second section draws on insights gained in the context of the Public Collaboration Lab, and proposes a simplified model to approach civic engagement in local decision-making with four scenarios. The article concludes by suggesting that an increased understanding of institutionalised methods of civic engagement and their contribution to decision-making can facilitate participatory approaches to design for public services in local authorities.

## Civic engagement in local decision-making

Civic engagement is an act of political participation (Eknam & Amna 2012; Houses of Parliament, 2015) that enriches the practice of representative democracy by “expanding the sphere within which citizens can exercise influence” (Bourgon, 2008, p.13). Civic engagement activities fulfil several democratic functions, such as educative by developing civic skills and virtues, integrative by allowing individual voices to be heard, deliberative by opening up decision-making to public reasoning and legitimacy by increasing the transparency of decisions (Michels & de Graaf, 2010; OECD 2001, 2006). In addition, civic engagement exercises bring a citizen-centred approach to public management providing a better understanding of social needs, and divergent thinking towards solution of complex problems that potentially leads to improving government’s outcomes (Cooper et al. 2006; Davies & Simon 2012). Civic engagement can take many forms which differ considerably in their character and objective (Cornwall, 2008). Different approaches are adopted to suit diverse contexts, whereby sometimes the jargon hides as much as it reveals. In the public sector context, civic engagement typically refers to “any process that directly engages the public in decision-making and gives full consideration to public input in making that decision” (EPA, 2017). In order to narrow down this broad definition of civic engagement, we turned to Stuart Fox’s comprehensive literature review of frameworks of political participation in Britain to limit the scope of civic engagement in the context of local authorities’ decision-making to: *voluntary* and *active behaviour* engaged by an *individual or group* with the aim of affecting public concerns, *targeted at local authorities* as responsible for discharging services, and restricted to formal participation or *institutionalised methods* (Fox, 2014; Houses of Parliament, 2015). In turn, these formal or institutionalised methods employed by local authorities are well summarised by Genere Rowe and Lynn J. Frewer (2005). The authors approach civic engagement activities focusing on the information flow between sponsor<sup>1</sup> and citizens, and develop a typology of mechanisms –and competencies of each mechanism– consisting on three modes. Firstly, *public communication* as a one-way flow of information from sponsor to the public that aims at efficiently transfer relevant information. Secondly, *public consultation*, which is a one-way flow of information from the public to the local authority, who then must process the information gathered. It must be noted that public consultation is also seen as a limited two-way relationship that includes feedback to the public (OECD, 2001). Anyhow, consultation is broadly considered to be a “reactive way

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<sup>1</sup> Acknowledging organisations that carry on civic engagement activities on behalf of a public authority.

of participation” (European Center for Not-for-profit Law, 2016, p.23) in which members of the public are consulted upon a tentative proposal. Thirdly, *public engagement*, which establishes dialogue between local authorities and citizens and captures it into an ‘accurate composite’.

Beyond the information flow framework –which provides a terminology attuned with that of local authorities’–, accounts of civic engagement broadly approach the relationship between government and citizens as either *adversarial* or *potentially collaborative* (Quick & Feldman, 2011). As an example of the former, the Ladder of Participation by the American Sociologist Sherry Arnstein (1969) provides a typology of citizen participation that ascends from nonparticipation to degrees of tokenism and degrees of citizen power. Arnstein’s ideal of collaboration revolves towards citizens moving from an “empty ritual of participation” towards citizens “having the real power needed to affect the outcome of the process” (ibid, p. 216). However, Arnstein’s normative scenario does not acknowledge the complexity of local government and citizens’ relationships (Bovaird 2007) and places citizens and civil servants in opposition (Junginger 2014) which is of little use to facilitate collaboration. Conversely, *potentially collaborative* approaches to practices of civic engagement are most relevant for participatory approaches to the design of policy and public services. In this vein, Simon Burrall and Jonathan Carr-West (2009) differentiate between *extractive engagement* as a one-way channel communication where state actors attempt to extract relevant information from citizens; and *discursive engagement* which is aimed to facilitate meaningful conversations. Although it falls beyond the scope of *formal participation*, Sarah C. White’s political approach to participation is most relevant. She distinguishes four major types of participation based on interests for top-down and bottom-up actors, and functions: *nominal participation* is largely for top-down legitimization and bottom-up inclusion, and serves the function of display; *instrumental participation* is a means to an end that serves top-down’s efficiency interest, and is seen as a cost by local people; *representative participation* is an effective means of communication that aims to ensure sustainability and leverage; and *transformative participation* aims at empowerment and is an end in itself.

Categorisations of civic engagement practices are artificial and elusive as different forms of civic engagement are often mingled, overlapping and complementing each other. On the one hand, even activities that may in principle fall under tokenism can grow into inclusive decision-making processes (Davies et al. 2012). On the other, activities aimed to provide a space for public discursive engagement can in practice be limited to nominal/instrumental participation.

White argues that “sharing through participation does not necessarily mean sharing power” (1996, p.6) and claims that participation should also extend to management and decision-making. In this note, it is worth noting that civic engagement activities open up decision-making processes to take in citizens’ input, mainly aimed to contribute to policy-making without mention of delivery. If attention is turned to policy implementation and design for services, civic engagement gives way to *co-production* as participation in the delivery of public services. In this regard, Victor Pestoff (2012) refers to collaboration in different stages of the policy cycle without being mutually exclusive: the author distinguishes between co-governance as the input or engagement into policy formulation, and co-production and co-management at the output or policy implementation. In this line, the Care Act 2014 defines co-production as when “an individual influences the support or services received” but also as “influence on the way that services are designed, commissioned and delivered” (Department of Health, 2014, p.12), blurring the boundaries between civic engagement and co-production. Other scholars have also recognised that civic engagement may extend to any point in the policy cycle, from agenda-setting, policy direction, policy design or policy delivery (Bourgon, 2008; Involve & NCC, 2008). In this line, Sabine Junginger (2013, 2014) also notes that policy problems and solutions emerge together and that the distinct clear cut stages of the policy cycle are conceptual rather than practical. Christian Bason approaches co-production as a governance scenario, and proposes a shift from “delivery of services to people, towards a scenario that is designed to better enable co-production of services with people” (2012, p.50).

In the context of the United Kingdom's representative democracy, the Localism Act 2011 is especially relevant<sup>2</sup> as it has sought to decentralize and devolve powers to local government. That means that local government operate more locally, increasing communication with individuals, local communities and other local governments. Devolution and decentralisation aims at taking decision making closer to citizens, devolving decision-making cycles, creating new scenarios of local consultations and canvassing the need for greater civic engagement in local decisions. According to the Public Services (Social Value) Act 2012, governments have a 'Duty to Consult', and the Code of Practice on Consultation (Cabinet Office, 2004) encourages consideration to more informal ways of engaging with stakeholders and highlights the importance to engage proactively with particularly difficult to reach individuals. The Revised Consultation Principles (Houses of Parliament 2013) provides further guidance and acknowledges that traditional written consultation is not always the best way to engage in fruitful dialogue. Nonetheless, it is at the discretion –and capability– of local authorities to choose the most appropriate methods of consultation on the basis of guaranteeing fairness. In addition, the most recent guidelines update encourages “informal iterative consultation” as an on-going process that includes “collaborative approaches” and is tailored to the needs and preferences of particular groups who “may not respond to traditional consultation methods” (Cabinet Office, 2016, n.p.).

In sum, English local governments have “statutory duties to consult with local people about changes in their area” (Local Government Association 2011, n.p.) and although decision-making cycles seemed to revolve around public consultation recent legislative reforms encourage more inclusive, iterative and discursive forms of civic engagement. Taking into account the current financial situation at the light of public sector cuts, the realisation of these recommendations poses a challenge for local governments which must find novel ways of bringing power closer to the citizen with ever limited resources.

## Public Collaboration Lab: Creative engagement and consultation

The research reported in this paper was conducted as part of the Public Collaboration Lab, a one-year, AHRC-funded research project that established a strategic research collaboration between the London Borough of Camden, the citizens they serve, and the University of the Arts London exploring the potential for, and the value of, design-led research to address societal challenges, and engage with citizens and other societal actors in the co-design and co-delivery of some aspects of public services. Two interrelated action research activities were delivered in parallel: Firstly, citizen-centred exploration of how collaboration plays in specific service contexts. Secondly, exploration of scenarios, mechanisms and measurement of impact of the lab's scenario and means of democratising social and service innovation and informing policy. The Public Collaboration Lab explored synergies of collaboration between local government and Higher Education Institutions (HEI) through design-led action research projects, which have increased understanding of HEIs' roles in supporting innovation practices within local research, and explored the potential for co-design to democratize public service reform and improve public outcomes. (Thorpe, Prendiville & Olivier, 2016). 'Future Libraries', a design-led action research project undertaken by MA Industrial Design students in collaboration with Camden's library services delivered creative consultations and the project's findings contributed to the Council's proposal for statutory consultation around the future of libraries. The students designed and produced creative engagement artifacts, co-design workshop methods and tools, as well as a digital publication of the project findings (Thorpe et al. 2016). Drawing on the 'Future Libraries' project the authors identified civic participation as one of local government's operational objectives in

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<sup>2</sup> Also of relevance are Communities in Control (2009), Control Shift (Conservative Party, 2009), Equality Act 2010, Strengthening Local Democracy (2010), Community Empowerment (Scotland) Act 2015.

alignment with design education's learning outcomes.

Following on, a half-day workshop on 'Creative Engagement and Consultation' was held at Camden Council's offices. The workshop aimed at exploring how local authorities' design and deliver civic participation activities as part of their decision-making processes, in order to identify potential contributions of participatory art and design practice to deliver more creative and possibly more inclusive engagement and consultation to inform decision-making and design of public services. In preparation for the workshop, literature review, in depth interviews and workshops with Council's officers provided insights on the complexity and diversity of civic participation activities. This preliminary research informed the design a 'decision-making journey template' (Figure 1): a hands-on diagnostic exercise that captures an overview of decision-making cycles, focusing on civic engagement activities and identifying potential contributions of participatory art and design approaches. In addition, the template plays out as a boundary object (Star 1989) to facilitate and document communication between local governments' officers and art and design academics. The template aimed to explore the hypothesis that tools and methods employed to inform, consult and engage citizens should respond to the extent in which citizens can influence the decision-making process, in order to align expectations and maximize resources.

The workshop gathered 58 participants, including 32 officers from 13 local governments from across the country who are responsible for civic involvement activities; and 26 art and design academics from 14 HEIs interested in exploring new opportunities for collaborative learning. Participants formed eleven groups with even representation and chose a decision-making journey that best represented their local authorities' practice. Using the provided 'decision-making journey template' participants generated eleven journeys in areas as diverse as local regeneration plans, commissioning of social care services, major transformation of culture or leisure services among others (Figure 2). The first exercise, led by local government representatives, focused on the visualization of the chosen journey, detailing: 1) milestones, particularly statutory and non-statutory civic engagement activities, 2) and the degree to which citizens may influence decisions. 3) The methods and tools used to engage citizens in each exercise, 4) timeframe and 5) actors involved. The second exercise, led by art and design academics, focused on 6) identifying opportunities to draw on participatory art and design to enhance civic engagement activities.

The authors have approached the data analysis through a design-lens. In making sense of diverse local authorities' decision-making journeys these have been mapped against an extended version of the Double Diamond design process (Design Council, 2005) understood here as a project management process. The analysis has given rise to (1) a simplified and archetypical model that provides an overview of civic participation in local decision-making cycles, and (2) four scenarios that account for the diversity of local decision-journeys. The scenarios depicted are not exhaustive nor normative, but rather illustrative of local authorities' decision making processes as shared during the workshop.

This is the decision-making journey for \_\_\_\_\_

Some context: \_\_\_\_\_



Figure 1 Decision-making journey template.



Figure 2 A decision-making journey template in progress during the workshop

## Decision-making journey scenarios

Zooming out from specific civic engagement activities to the decision-making cycle as a whole, Figure 3 shows a model of an archetypical decision-making journey focusing on citizen engagement. The model takes into consideration processes, methods and actors. Citizens' opportunity to influence decision-making processes in each civic participation activity has been inferred from participants' responses and expressed with the height of the diamonds. For instance, the 'scope' stage is represented flat because participants consistently reported no civic engagement practices during this phase.

It must be noted that local authorities' representatives often refer to *public communication* as *information*; *public engagement* as *informal consultation* or *pre-consultation*, and *public consultation* as *statutory consultation* or *formal consultation*.

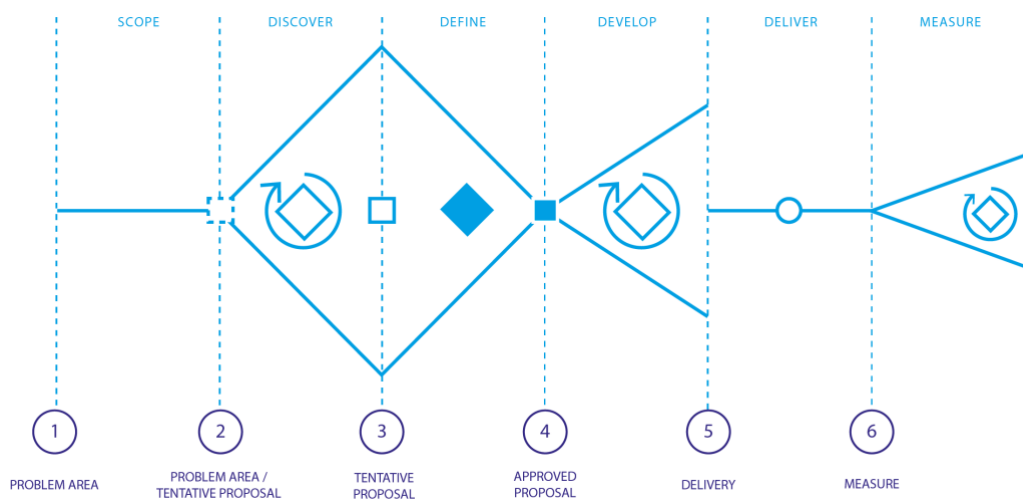


Figure 3 Simplified local decision-making model based outlined as a design process.

(1) A decision-making journey is initiated either in a) in a proactive manner to improve current policy or service provision with a somewhat specific or open exploratory question; or in a reactive manner to respond to b) an event or emergency (such as riots) or in order to achieve strategic objectives. The latter and most common scenario can in turn be initiated in response to c) updated priority settings, such as budget reduction; d) to a Councillor or Service Board proposal, which might have been motivated by citizens. The identification of a problem area or vision is carried out internally by public servants, officers and service teams, heavily driven by the local authority's strategic objectives and priorities and informed by pre-existing data evidence. No civic engagement processes are used during this stage.

(2) A problem area or vision is -maybe just roughly- defined and cycles of civic engagement exercises commence. A typical cycle is constituted by several activities. In a first iteration, aimed at defining a tentative proposal that addresses the problem area or vision, local authorities gather public opinion through informal (and somehow exploratory) public consultation. Diverse stakeholders are involved at this early stage, such as community representatives, interested local residents, community researchers or front line staff. During the convergent stage, local authority representatives analyse information and generate insights based on agreed strategic objectives.

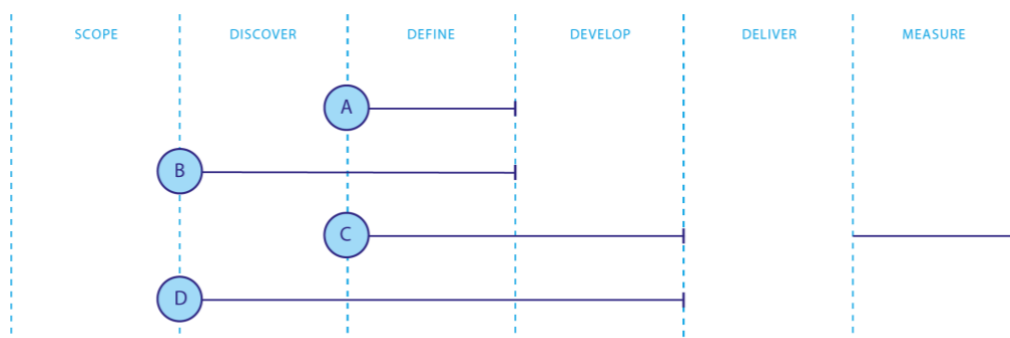
(3) Insights gathered during this first cycle of civic engagement inform the development of one or several tentative proposals, upon which citizens are formally consulted. Feedback from the formal consultation is taken into consideration and the proposal might be modified accordingly, completing a second cycle of civic engagement.

(4) A proposal informed by data evidence, public engagement informal consultation, and thirdly by a formal consultation is reviewed by cabinet members, and if appropriate signed-

off for its implementation.

(5) The proposal approved by cabinet is further developed with or without public engagement, and finally delivered. Public communication exercises feature throughout the process, especially during the delivery phase.

(6) A performance monitoring and evaluation is initiated, and the results will inform the setting of strategic objectives and future decision-making cycles.



**Figure 4** Four scenarios according in which civic engagement activities feature at different stages of local authorities' decision-making journey.

Scenario A, *consultation*, is based on 2 decision-making journeys. In this scenario, a tentative proposal is well articulated by the local authority based on data evidence to address strategic objectives. Members of the public are formally consulted upon it and their feedback is incorporated into the proposal. The proposal is presented, approved by cabinet, and therefore ready for implementation. In this scenario, civic engagement is reactive and limited to top-down formal consultation intended to legitimate the proposal.

Scenario B, *engagement and consultation*, is based on 5 decision-making journeys. In this scenario, civic engagement activities aim to facilitate meaningful conversations to co-define a problem area or vision. Taking into considerations strategic objectives, data evidence and the insights gathered, ultimately local authorities articulate a tentative proposal. Members of the public are formally consulted upon it, and their feedback is incorporated into the proposal. The proposal is then presented and approved by cabinet, ready for implementation.

Scenario C, *consultation and engagement towards coproduction* is based on 1 decision-making journey. In this scenario, a proposal based on data evidence is presented and approved by cabinet, ready for implementation. Up to this point, civic engagement is limited to top-down formal consultation. Later on, on-going informal consultation exercises provide citizens the opportunity to contribute to the proposal's development and to provide insights to evaluate the proposal. Civic engagement activities aim to facilitate meaningful conversations intended to seek consensus in further articulation of the proposal.

Scenario D, *continuous engagement towards coproduction* is based on 3 decision-making journeys. In this scenario, members of the public are consulted in a series of civic engagement exercises, and citizen's feedback is iteratively incorporated to define a problem area or vision, and ultimately a tentative proposal. Informal consultation exercises seek active citizen participation into further development of the proposal. In two instances civic engagement was limited to customise the implementation. In the other instance citizens contributed to co-develop service concepts with service prototypes.

The four scenarios provide a better understanding of the diversity of decision-making cycles that lead to service transformation in English local authorities, and suggest that civic

engagement activities differ in intent at different stages of the decision-making process, and therefore must be designed accordingly. For instance, it may be argued that whereas in scenario B informal consultation activities are mostly aimed at informing the development of a proposal for cabinet approval, in scenario D informal consultation activities could also go about assembling and supporting communities to actively contribute to the co-development of a service transformation proposal. Scenarios A and B suggest that civic engagement activities are limited to legitimate or inform a policy formulation.

## Discussion

This paper has explored academic literature concerning the role of civic engagement activities in local decision-making cycles. The authors have noted that English local governments are encouraged to incorporate potentially collaborative and discursive modes of civic engagement into their institutionalised methods of civic engagement. Then, drawing on insights from a workshop with local authorities' representatives and arts and design academics the paper has outlined local decision-making as a (participatory) design process, and proposed a simplified decision-making journey and four scenarios.

In designing for public services, institutionalised civic engagement activities are tasked with bringing a citizen-centred approach to public management. However, it has been noted that civic engagement activities can serve multiple functions and consequently categorisations of the relationship between government and citizens in decision making processes is often elusive. In the authors' experience, both the process of generating and the proposed decision making models contribute to shed light into and inform the design of civic engagement activities and local decision-making processes. Firstly, the visualisation of local authorities' decision-making journeys assisted local authorities' representatives to communicate complex local decision-making processes during the workshop. The resulting decision-making journeys assisted participants to achieve a shared understanding of specific decision making cycles, and supported the collaborative examination of current and desired civic engagement activities and decision making models that would potentially enable more collaborative design and delivery of services. Secondly, zooming in and out from individual design engagements to decision-making cycles as a whole provided a better and shared understanding of the contributions and limitations of discrete civic engagement activities to the articulation of more collaborative decision-making processes and co-produced services. Daniela Sangiorgi (2011) argues that participation is a key resource in public service transformation to challenge non-collaborative models of service delivery. In this vein, we believe that in order to bring decision-making closer to citizens and move towards collaborative service models the contribution of design must zoom in and out from the design of civic engagement activities as *moments* of participation, to a means for supporting *potentially collaborative* interactions between diverse societal actors and throughout the decision making cycles, underpinning the emergence of more collaborative decision-making processes and co-produced services.

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# Co-creation with vulnerable consumers – an action research case study of designing a pictorial language for logistics

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## Abstract

Within the context of Universal Design and User Centered Design, vulnerable consumers, especially immigrants, still represent a fringe group when it comes to co-creation processes. Therefore, the aim of our study was to find ways to integrate immigrants into a co-creation process, namely the development and testing phase of a pictorial language for warehouse jobs. Within an action research case study consisting of a four-part storyline settled in a warehouse context, we identified and specified four key success factors that contribute to a successful co-creation project with vulnerable consumers: (1) integration at the very beginning of the co-creation project, (2) design of a suitable toolbox with service design, creative and varied methods, a storyline concept, use of easy language, additional icons and possibility of parallel use, (3) availability of network partners with access to vulnerable consumers as well as (4) the innovative setting of a living lab.

**KEYWORDS:** co-creation, vulnerable consumers, immigrants, open living lab, service design, pictorial language

## Introduction

One of the most important trends in contemporary consumer society is the progressive inclusion of consumers in companies' processes where value is co-created (Arvidsson 2008). Already in 1991, Muller described initial experiences with the participatory design technique PICTIVE. In 2004, Prahalad & Ramaswamy (2004) analyzed co-creation as a new and critical development within the field of innovation. Concepts of interactive innovation development, such as Open Innovation by Chesbrough (2003), Wisdom of Crowds (Surowiecki, 2004) as well as the Lead-User concept (von Hippel, 1986) have promoted co-creation research, leading to a range of new business models and management tools that engage users in the process of innovation. Co-creation is a method of solving complex problems and developing innovative ideas. The concept is based on the collaboration of interdisciplinary groups that develop, test and implement in a repetitive and application-oriented process (Zwick, Bonsu, & Darmody, 2008). Integrating customers in order to learn

from and with them in the innovation process is a key success factor for companies (Edvarsson, Gustafsson, Kristensson, & Witell, 2010). It requires involving stakeholder group methods of interaction in transdisciplinary processes.

### Vulnerable consumers as fringe groups

A phenomenon that has received less attention so far in the context of co-creation, user integration and service design are the so-called vulnerable consumers. Consumer vulnerability is defined as *“a state of powerlessness that arises from an imbalance in marketplace interactions or from the consumption of marketing messages and products. It occurs when control is not in an individual’s hands, creating a dependence on external factors (e.g., marketers) to create fairness in the marketplace. The actual vulnerability arises from the interaction of individual states, individual characteristics, and external conditions within a context where consumption goals may be hindered and the experience affects personal and social perceptions of self.”* (Baker, Gentry, & Rittenburg, 2005)

While there is no acknowledged definition for vulnerable consumers, there are several risk factors defining circumstances that could contribute towards making a consumer vulnerable (Legal Services Consumer Panel, 2014) and thus increase the likelihood of him being at a disadvantage or suffering loss or detriment during a transaction or communication with an organization. Such risk factors can be age, inexperience, learning or physical disabilities, low income or literacy, cultural barriers, mental health issues, a relationship breakdown, living in areas without internet or health problems. Scientific approaches such as Universal Design (UD) or User Centered Design (UCD) aim at integrating the needs of precisely the target group of vulnerable consumers. The term Universal Design was characterized in 1978 by Ron Mace at the Center for Universal Design of the North Carolina State University (Ostroff, 2011). UD is an integrative approach trying to focus on the needs of as many people as possible (rather than demanding individual solutions) while taking into account inclusion, social integration as well as heterogeneity and diversity (for a detailed description of the principles of UD see Story, 2001). In the concept of User Centered Design, the users are at the center of the whole design process, from the early stages of planning and designing the system requirements to the later stages of implementing and testing the product. The philosophy of UCD is (1) to know the product users as only then their needs can be analyzed by skillful questions and observation techniques (Gould & Lewis, 1985), and (2) to remember that the product developers and team members are not the product users. Within the context of UD and UCD, there are already activities and approaches with the vulnerable consumer group of elderly people in the field of Ambient Assisted Living (AAL) (Chernbumroong, Atkins, & Yu, 2010; Demiris, Rantz, Aud, Marek, Tyrer, Skubic & Hussam, 2004; Emiliani & Stephanidis, 2005; Holzinger, 2002) as well as with autistic persons in the field of health restrictions (Huijnen, Lexis, Jansens & de Witte, 2017). Findings for co-creation with immigrants as another subgroup of vulnerable consumers, however, are still rare. In the following, we will discuss this specific group and we will examine the question how to integrate immigrants into the development and testing process of a pictorial language for logistic processes.

## Theory

To gain an overview of former research activities and to excerpt requirements for the design of our case study, we conducted a literature search by entering relevant keywords in various scientific search engines (e.g. science direct, emerald insight, google scholar). In particular, we searched for studies dealing with co-creation with immigrants and findings on the use of pictorial language with immigrants.

Already in 1933, Neurath stated that pictures can be used to overcome both cultural and educational differences. To achieve this aim, he based his graphic language Isotype (Neurath, 1935) on the rule of simplicity (Hochhäusl, 2011; Groß, 2015). Regarding co-creation with immigrants, Bobeth, Schreitter, Schmehl, Deutsch & Tscheligi (2013) show that the inclusion of immigrants (especially newly arrived and low educated ones) is simplified by supportive ICT services. The project contained a user-centered design (UCD) process, which becomes successful in terms of collaboration with non-governmental organizations (NGOs) or long-term immigrants. Chan, Han, Ng & Park (2009) examined the comprehension among Chinese and Koreans for American security safety symbols. As non-Americans have lower comprehension scores for American symbols than Americans themselves, immigrants may have interpretation problems. This insight stresses the consideration of the end user while designing safety symbols. Already in 1972, Cuny (1972) studied gestural commands effectiveness' on foreign workers. Instructions via a nonverbal, symbolic gestural code have been collected by experienced workers' observations. By showing films or drawings to foreign laborers, the experiments prove relationship closeness between symbolic and applied gestures. Furthermore, gestural codes can be used as useful initial training to foreign workers from the very beginning on the job. Low-literate readers can also be helped with an illustrated leaflet including antiretroviral information (according to Dowse, Ramela & Browne, 2011). Pictograms in the leaflet facilitated understanding among low-literate patients, especially for basic medication information. Culture and literacy skills should be considered in leaflet design, as well as verbal counseling combined with written information. Hare, Cameron, Real & Maloney (2013) consider in their case study the pictorial aid in health and safety communication for migrant construction workers. To reduce barriers, such as language and communication difficulties, they developed a pictorial inventory of images, and tested them for comprehension with the help of migrant workers. Due to the pictograms, a high amount of correct interpretations was reached. This study shows that simple hazards and controls can be communicated via pictorial aids as supplementation (not as substitution). However, cultural differences must be considered.

Based on the brief literature review and in-depth explanatory sources, we derive the following relevant framework conditions for co-creation with immigrants, which form the basis of analysis for our action research case study:

1. Methods should be targeted and user-centered.
2. The setting should be adapted to the specific user group. Familiar environments are preferred.
3. Early involvement of the user in the co-creation process can help in progressively testing and fine-tuning the prototypes (incremental design approach).
4. Creating a feeling of empowerment is useful for initiating an activity and increasing the persistence of task performance (Füller, Mühlbacher, Matzler & Jawecki, 2009).
5. The context should be set in a way that allows getting involved. E.g., self-efficacy can be strengthened through (1) positive emotional support, (2) encouragement (3) observing others' effectiveness, (4) feeling of successfully mastering a task (Bandura, 1977, Füller et al., 2009)
6. Each co-creation process should contain elements of enjoyment (Bandura, 1977).

# Issues in Using Service Design in Co-Creation with immigrants – An Action Research Case Study

From a methodological perspective, our case study approached as action research case as it aims at understanding co-creation with vulnerable consumers, namely immigrants.

## Brief description of the Project

Our co-creation project took place within a large scientific project (LogiPICs, 2017/2018) which aims to develop a pictorial language that displays work instructions for warehouse jobs in an interculturably understandable way. In addition to accelerating the training of new employees, the pictorial language aims at stabilizing and increasing both quality and efficiency of warehouse processes. By largely renouncing text, the main aim of the pictorial language is to integrate employees with a different mother tongue as German and illiterates. As such, it is essential that the pictorial language is in accordance with these employees in order to be accepted, understood and successfully used by them. To achieve this, we included immigrants as part of the intended users of the pictorial language in our co-creation project.

## General Service Design Setting

The most important thing is to put oneself in the position of the intended users. It is not enough to just query them, you have to watch them closely to get new insights and hints for the product development process. The main concern must be to make products, services or concepts useable and useful by focusing on the users, their conditions and requirements. With this context in mind, our co-creation project for the development of a pictorial language for warehouse jobs consisted of four parts that followed a storyline starting with one's first working day at a warehouse, continuing with being promoted and ending with a company internal challenge. We used the storyline concept to create a feeling of immersion into the warehouse context (Spiegel & Hoinkes, 2009; Qin, Patrick Rau, & Salvendy, 2009). We presented the storyline on posters, combining an easily understandable language with additional icons adding to the understanding (Morrow, Hier, Menard, & Leirer, 1998; Mansoor & Dowse, 2003). Even though we mainly addressed immigrants as intended users of the pictorial language, we also included logistics experts (employers, supervisors, teachers and people currently working in the logistics sector) as well as potential users without migration background to find out if the pictorial language is a) acceptable and understandable for all of them b) if it depicts various logistic jobs correctly. To address this diverse group in our co-creation project, the language used had to be easily understandable for the immigrants, yet not too easy for the logistics experts and other potential users to be deterrent. We therefore used a language in accordance with the A2/B1 level of the Common European Framework of Reference for Languages CEFR (Council of Europe, 2001). All written texts used for our co-creation project were rated by three language experts (two teachers of German as a foreign language as well as an immigration expert) with regard to the A2/B1 criteria. The four parts of the storyline used different methods and mediums and were designed so that participants could either follow the storyline or also go through individual parts of the story, depending on their needs and preferences.

## JOSEPHS® as living lab setting

The four parts of our co-creation project were set up in the form of a semicircle within the open innovation lab JOSEPHS®– Die Service-Manufaktur ([www.JOSEPHS-service-manufaktur.de/en](http://www.JOSEPHS-service-manufaktur.de/en)). We chose the JOSEPHS® for our co-creation project as it allowed us to access both immigrants as well as logistics experts and other potential users in a low-threshold way. JOSEPHS® follows a shop-like concept where visitors can drop in during the

regular retail opening hours and participate in various co-creation projects. As such, it allows both individuals and groups to decide freely when to co-create. Our co-creation project at JOSEPHS® started in September 2017 and ended in November 2017.

### **Part one of our storyline: Online questionnaire**

The first part of our storyline (first working day at a warehouse) was designed as an online questionnaire which was presented on two tablets to allow parallel use. The aim of the questionnaire was to decide on the ideal figure for explaining work instructions for warehouse workers. The questionnaire was designed using LimeSurvey (2017) and consisted of five questions on the figure design as well as six additional demographic questions (gender, education, spoken languages, mother tongue, home country, work experience at a warehouse). The figure design questions were presented as single choice and ranking questions. Participants had to choose the figure or pair of figures most suitable for explaining warehouse work instructions, the figure they personally liked most and the figure they identified with most.

To be accessible for as many participants as possible, the online questionnaire was available in German and English and used the A2/B1 language level (Council of Europe, 2001). However, the ability to read was no mandatory requirement since the JOSEPHS® concept includes so called JOSEPHS® guides ready to assist the participants whenever there are questions or problems. In the same line, the knowledge of how to use a tablet was no mandatory requirement since the JOSEPHS® guides could also assist in case a participant had never used a tablet before. Even though there were only two tablets available, the questionnaire allowed parallel use by more than two participants. This was achieved by printing the questionnaire on sheets with a size of 8.3 x 11.7 inches, with one question per sheet. The printed version was also available in German and English, additionally in Arabic, and allowed parallel use by up to 15 participants, which made it easily accessible to groups.

### **Part two of our storyline: Simulation and structured interview**

The second part of the storyline (first work experience at a warehouse) was designed as a simulation in combination with a structured interview. The aim of this part was to test the understanding of two pictorial work instructions in a warehouse model. The work instructions showed the jobs of a) unloading a truck and b) packing away a pallet, which we had identified as typical warehouse jobs when visiting five warehouses in preparation for the co-creation project. The two pictorial work instructions that were presented in random order consisted of a) a single picture containing four work steps (unloading a truck) and b) four work steps presented as one picture per work step (packing away a pallet) (see Figure 1).



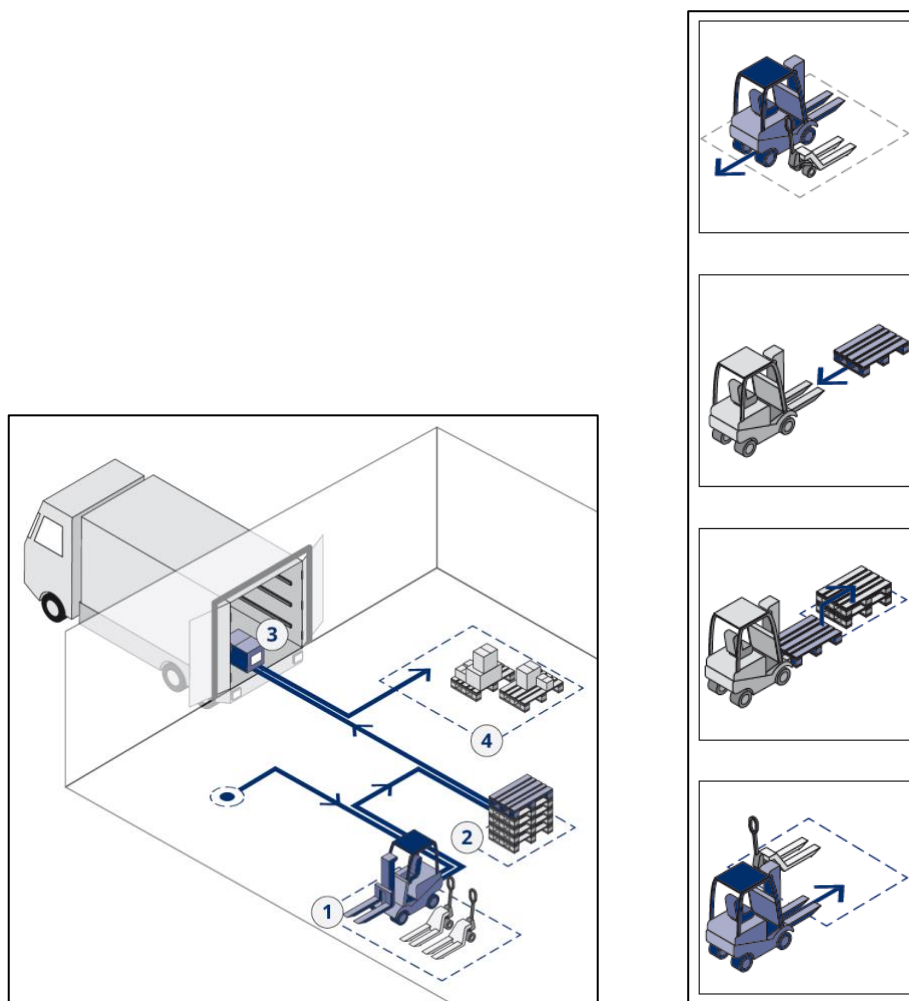
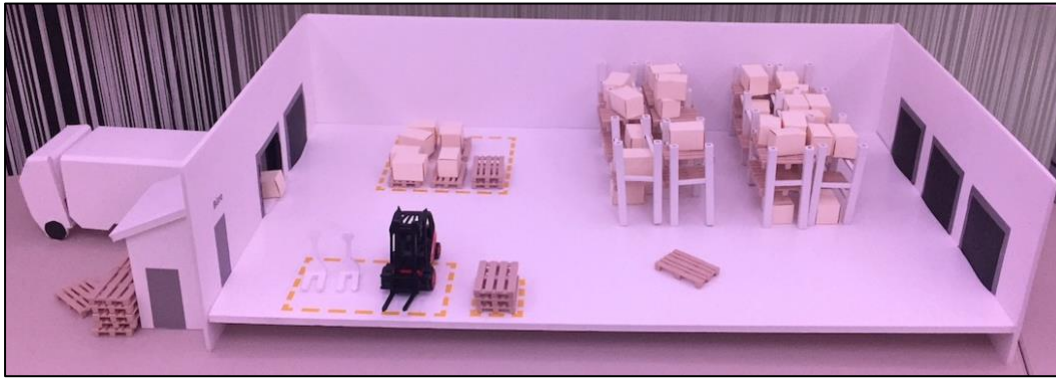


Figure 1: Pictorial work instruction for a) unloading a truck (left) and b) packing away a pallet (right)

The work instructions were printed in color on laminated papers (8.3 x 11.7 inches) and handed over to the participants by the JOSEPHS® guides. As soon as the participants received the first pictured work instruction, they went to the warehouse model (see Figure 2) and tried to carry it out there. The participants could either work in silence or comment on the working steps. In case the participants had previously given their consent, this part of the storyline was audio-recorded to capture all comments and remarks that could be useful for improving the design of the pictorial language. In addition to the audio recording, the JOSEPHS® guides used standardized evaluation sheets to record whether a precise work step was carried out correctly or incorrectly. As soon as the participants had completed the task in the warehouse model, the JOSEPHS® guide continued with a structured interview consisting of five to eight questions depending on the pictorial work instruction. The questions covered colors used, numbering, arrows, order of work steps, difference between model and work instruction, as well as overall clarity of the work instruction. The participants could answer the questions with yes/no only or also make additional comments. Once the participants had finished both tasks, the JOSEPHS® guide asked which of the work instructions was easier to follow and why. The guide furthermore noted which work instruction was handed out first and which second to control for sequence effects.



**Figure 2: Interactive warehouse model**

To be accessible for as many participants as possible, the structured interview was available in German, English and Arabic and used a language in accordance with the A2/B1 level (Council of Europe, 2001). In case participants did not understand the meaning of a standardized question, the JOSEPHS® guide was allowed to explain the question using the warehouse model. As to answering the questions, an A1 language level was sufficient as they could be answered with yes/no only. The usage of the warehouse model allowed the participants – also those with no previous work experience in a warehouse – to fully immerse into the warehouse context and to understand the problems of creating an understandable and acceptable pictorial language.

### **Part three of our storyline: Creative paper and pencil questionnaire**

The third part of the storyline (being promoted) was designed as a creative paper & pencil questionnaire which allowed parallel use. The creative paper and pencil questionnaire, which was available in German, English and Arabic, consisted of a sheet of paper (8.3 x 11.7 inches) with four written work instructions accompanied by basic pictograms giving the context for the work instructions. The participants' task was to create their own pictorial work instructions based on the written work instructions, ideally without using any text. The written work instructions that had to be transferred into pictures covered a prohibition, indicating a movement, marking a position and highlighting something (see Figure 3). The participants could choose freely among eight different colors and could use any combination of colors and form they considered suitable. Ability to read was no mandatory requirement since the multilingual JOSEPHS® guides could read and explain the questions to the participants.

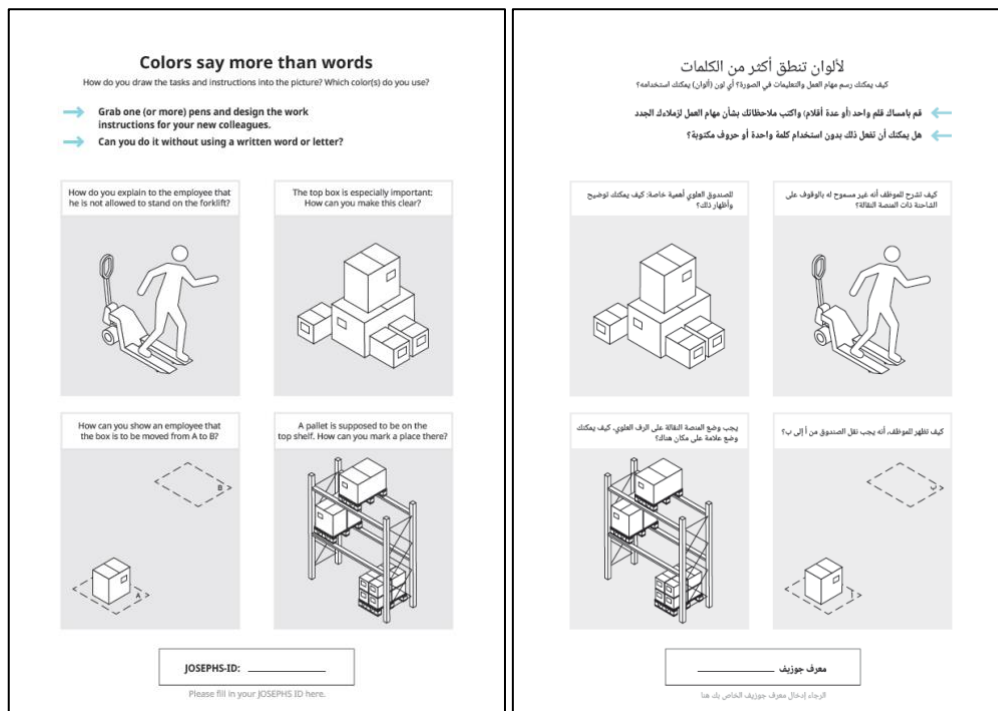


Figure 3: Creative paper and pencil questionnaire (here in English (left) and Arabic (right); German also available but not displayed)

#### Part four of our storyline: Creativity task

The fourth part of our storyline (company internal challenge) was set as a creativity task and aimed at designing a logo for the pictorial language. Thus, this part went beyond the actual designing of the pictorial language and asked the participants to think about marketing criteria such as recognition value and timelessness. To design their logo, the participants could choose freely among a set of 24 colored pencils and could use a stamp as well. To follow the storyline concept of a company internal challenge, the participants did not just draw their logo on a piece of paper but were given a small t-shirt model (see Figure 4), as the company internal challenge was about designing the logo on a t-shirt. After having completed their logo, the participants could either hand their designed t-shirts to a JOSEPHS® guide or hang them on a model clothesline where they served as an inspiration to other participants. Since there were no limitations concerning forms or colors used (apart from choosing from a set of 24 colors), it was a low-threshold task that required no particular language knowledge apart from understanding that it was about designing a logo.

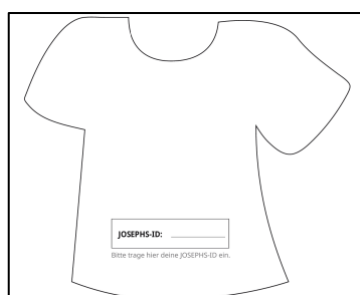


Figure 4: T-shirt model for company internal challenge

## Service Design Evaluation

The data of N = 325 participants of our co-creation process (n = 163 female, n = 162 male; mean age 34.5, SD = 14.25), with n = 48 having another home country and mother tongue than Germany/German, were used for evaluating the different storyline parts. We used a purely quantitative approach using SPSS 20 for evaluating the multilingual questionnaire of part one of the storyline. Our main finding here was that regardless of sex and culture, our participants had a clear idea of the figure that is best suitable for explaining warehouse work instructions with pictures. For the simulation task in the warehouse model (part two of the storyline), we used a qualitative content analysis based on Mayring (2000), finding that colors and additional aids such as numbers and arrows are essential for understanding pictorial work instructions and that a sequential presentation is easier to understand than a all-in-one presentation. As to part three of the storyline, we again applied a quantitative approach using SPSS 20 and identified icons, symbols and indexes that were each combined with a certain set of colors in order to depict a prohibition, movement, position and highlighting something. For part four of the storyline (company internal challenge), we chose a qualitative approach, which led us to three logo families which we then used for further evaluation so that we could find a single ideal logo for the pictorial language.

## Discussion and Implications

The above-mentioned findings of our different storyline parts were all used by the graphic designers for further developing the pictorial language. At the time of writing, we have two typical warehouse processes in pictorial language ready for further testing in May 2018. The figures, general layout, forms and colours used in these two processes are all based on our findings presented above. These numerous and various findings however, would not have been possible without the following success factors of our case study which resulted in so many participants and thus opinions and thoughts:

### Involvement

One of our main success factors was integrating the users, particularly the immigrants but also the logistics experts and other potential users of the pictorial language, at the very beginning of the creation process: Our co-creation project involved the users at a very early stage where we had to decide on design basics such as colors, figures and forms used. Being integrated at such an early stage gave the participants the feeling that their thoughts and opinions are important.

### Toolbox

The usage of easily understandable, yet creative and varied design thinking methods helped us to promote co-creation with participants. They enjoyed co-creating and did not see it as a burden. A major success factor was the usage of a storyline concept. This allowed the participants to fully immerse into the warehouse context. Those participants who had never worked in a warehouse before could develop a feeling for typical warehouse jobs when working in the model and could understand the difficulties and problems of creating a pictorial language for such jobs. Some of the younger participants got inspiration for a possible workplace for them.

- Verbal representation: The material used (e.g., storyline posters, (online) questionnaire, structured interview, written work instructions) had to be formulated in language level A2/B1 at maximum. This allowed access to a wide range of participants (e.g. immigrants, logistics experts, potential users of the pictorial language without migration background).

- Non-verbal representation: Another success factor was the usage of additional icons, added for understanding the tasks in case of limited language knowledge or reading competency. This implicated a reduced “risk“ for illiterates of having to ask for help and being discovered as illiterates.

## Setting

The JOSEPHS® living lab setting with its open space character allowed us to involve and stimulate our diverse intended and potential users to participate. With its pleasant and creative atmosphere and not being in an old-fashioned laboratory setting, participants could enjoy co-creating. The possibility of working simultaneously and parallel on the same tasks (except for the warehouse simulation task) made it especially easy for groups to access our co-creation project. Immigrants would probably not have participated individually but enjoyed participating when in a group of other immigrants, was feedbacked to us. Furthermore, the presence of trained and multilingual guides at JOSEPHS® was an important fact, especially with regard to vulnerable consumers, such as immigrants with limited proficiency of German or illiterate participants.

## Commitment

Co-creation with vulnerable consumers can only work with network partners who have access to such groups. One of our partners is specialized in various job trainings and integration programs for immigrants and illiterates and helped us to define the language level, inform the vulnerable consumers about the project and brought them to our co-creation setting in the JOSEPHS®.

Our case study identifies two further aspects that we consider to be success factors in the integration of vulnerable consumers such as immigrants:

## Identification of Vulnerable Consumers

Much is talked about the concept of lead users: The term lead user was introduced in 1986 by Eric von Hippel. A lead user is defined by two characteristics: First, he is confronted with the needs and requirements of products, processes and services that will gain importance for the masses in the future. Second, he benefits considerably from the satisfaction of these needs or requirements. Von Hippel (1986) developed a methodology to identify lead users. The methodology involves four major steps, beginning with the delineation of a search field and ending with the development of a product (Lüthje & Herstatt, 2004). Recruitment of users for user integration should be in close consultation with product/service developers and psychological/sociological researchers.

## Consideration of ethical aspects

In the context of integrating users into co-creation, an early examination of ethical aspects should take place. It has to be asked whether a study, in our case the co-creation project, can exert a negative physical or psychological effect on the participants and whether the expected test results are worth it. The following information gives an insight into the topic of ethical aspects (Lindfelt & Törnroos, 2006; Greenbaum, 2015; Döring & Bortz, 2016): Participants should at least be informed about the aspects of a study that could influence their willingness to participate. If desired, the results of the study should be provided to participants. It is important to investigate whether intentional deceit of participants can be avoided by using other study design methods. If it is necessary to conceal the true purpose of an examination due to the design of the study, the participants should be informed of the actual purpose after the study has been completed. If possible, mental or physical impairments should be avoided.

Figure 5 summarizes the relevant findings on co-creation with vulnerable consumers in form of a basic framework for Service Design, illustrated by the example of pictorial language with immigrants.

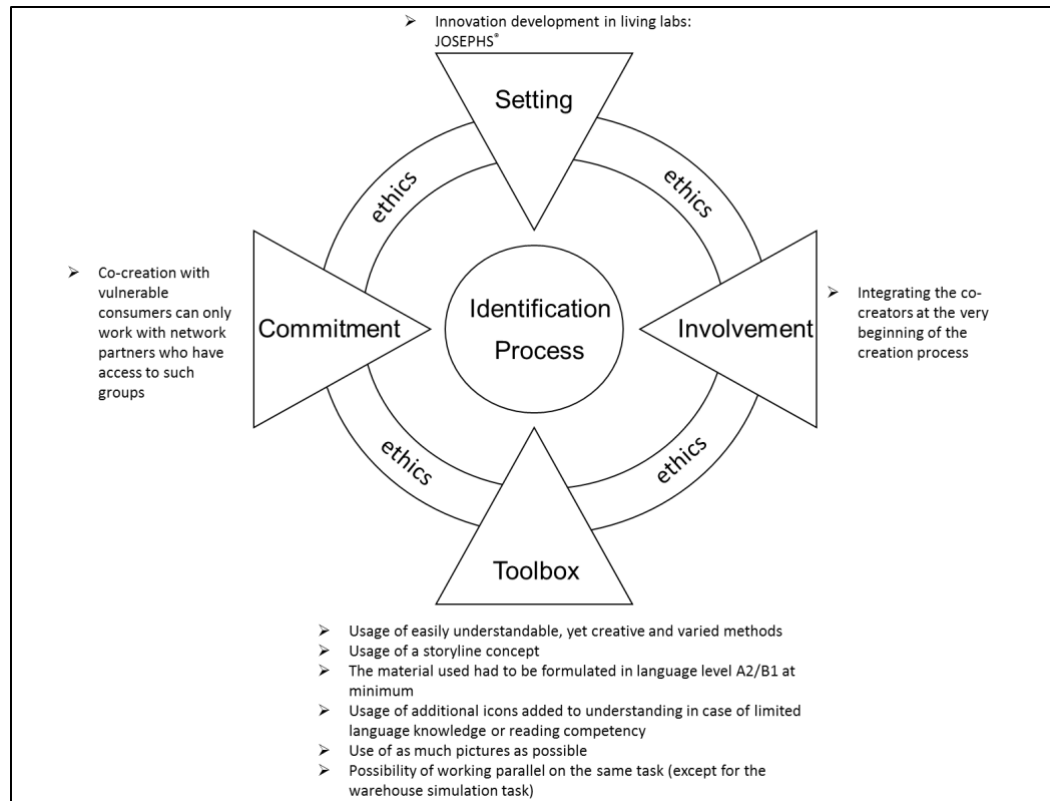


Figure 5: Co-creation with vulnerable consumers – Basic Framework for Service Design (illustrated by the example of pictorial language with immigrants)

## Limitations and Further Research

After considering all the success factors of our case study, it is important to discuss critical factors and limitations in general and especially for our co-creation project.

### Toolbox

The performance contribution of the users can vary between the passive supply of information and active participation, focusing on existing information to emasculate new knowledge (Holt, 1984). Many different methods can be applied (Kleinschmidt, Geschka, & Cooper, 1996): user observation, user survey, joint working groups and creativity workshops. The individual methods, which subsume under these generic terms, differ in their interaction strength. In our co-creation project, especially groups had to follow the storyline in a different order, which may have created different feelings of immersion into and understanding of the warehouse context and problems of a pictorial language.

### Setting

Ballon, Pierson & Delaere (2005) define living labs such as the JOSEPHS® as an experimentation environment in which technology is given shape in real life contexts and in which users are considered actual co-producers. In living labs, products, services or concepts are tested in a real-life context, with participants as important informants in the tests (Kusiak, 2007). Living labs are ideal co-creation environments for human-centered research Schmitt-Rüth, S., Simon. M., Demuth, A., Kornacher, A., Isakovic, M., Krupp, M., & Stoll, M. 333 Co-creation with vulnerable consumers – An action research case study of designing a pictorial language for logistics Linköping University Electronic Press

and innovation (Nyström & Leminen, 2011). However, even though theoretically living labs are thought to be for everyone to participate, in practice the typical audience at the JOSEPHS®, for example, is German and of higher education. Immigrants and/or other vulnerable consumers need to be recruited separately and do not just drop in. As mentioned before, a partner specialized in such groups is important. Another limitation of the living lab setting is that immigrants and/or other vulnerable consumers may not feel at ease. In our open lab there are for example a lot of female interviewers. Additionally, the general setting at the JOSEPHS® which is not specifically aimed at immigrants or other vulnerable consumers may generate a non-pleasant atmosphere for them.

### Vulnerable group identification

A major disadvantage in our use-case setting was that illiterates were not identified as such (in case there were any!). Therefore we have to think of other techniques to identify them in future. In general, further efforts are needed to find out how illiterates can be recognized, not only among immigrants, but also among other vulnerable consumers. Even though we made first research experiences in our case study, the questions of how to get illiterate people more involved in co-creation processes and to find out how many participated in co-creation require further research. The adaption of specific methods for illiterates from other scientific disciplines should be considered. Furthermore, the recruitment of this specific vulnerable consumer group is associated with effort. A recruitment network can help here.

It will be important to evaluate the success factors found in our setting. More studies with the use case of pictorial language are an option and can thus help to make the co-creation process more powerful. Furthermore, although we have consciously diversified the setting and storyline, it remains to be said that there are other groups of vulnerable consumers with other specifics as well. Here, for example, elderly people can be mentioned, who in turn will have different needs for a pictorial language. For the process of co-creation, some aspects valid for our target group of immigrants will certainly be transferable to other groups. Hence, vulnerability is not necessarily a permanent state (see United Nations, 1998, in Financial Conduct Authority, 2015). People can move in and out of vulnerability, and can suddenly be plunged into a vulnerable state by a dramatic life event (see Consumer Affairs Victoria, 2004, in Financial Conduct Authority, 2015). Depending on the situation, every one of us can be a vulnerable consumer at a time.

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## The act of giving – *Sur*. A service for sharing and co-producing gifts

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### Abstract

*Sur* is the prototype of a relational service for gift production. *Sur* is aimed at articulating, nourishing and strengthening relationships between the giver and the receiver of the gift. The co-production of personalised gifts is supervised and guided by a designer and supported by a network of crafts(wo)men-makers.

*Sur* provides the opportunity not only to reflect upon the issue “sharing and collaborating”, but also, more in general, upon the role of gifts within services and especially within relational services.

**KEYWORDS:** co-creation, eco-social design, gift, relational services

### Introduction

“Why do we give?” This question sparked a design research project carried out as a master thesis called *The Act of Giving* at the Master in Eco-Social Design of the Faculty of Design and Art of the Free University of Bozen-Bolzano<sup>1</sup>.

The research, which took one year in order to go through a literature review and a field research comprising observation and cultural probes, ended up in the design of a service for co-producing gifts, *Sur*.

*Sur* is a prototype for a service offering an alternative to the established market of gifts. It aims at creating artefacts that articulate, nourish and strengthen the relationship between the giver and the receiver, while weaving new relationships with various figures collaborating in the production of the gift.

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<sup>1</sup> The present paper, derived from Giulia Bencini’s master thesis carried out under the supervision of Kuno Prey and Alvisè Mattozzi, is a totally collaborative effort by the three authors. If, however, for academic reasons individual responsibility is to be assigned, Mattozzi has written § “The gift”, Prey § “The value of design”; Bencini and Mattozzi § “*Sur* as service design”, Bencini all the remaining paragraphs, except for § “Introduction” and § “Conclusions”, which have been written by the three authors together.

The present paper intends to introduce *Sur* and the research behind it, showing its relevance in relation to collaboration. Teamwork and cooperation are here seen both as a way of delivering services thanks to the participation of the beneficiary, and as a way to foster a participatory mind-set in society and raise awareness about issues of public interest, such as gifts and their social relevance.

As it will emerge in the end of the paper, the interest of the “the gift” issue goes much beyond the service here introduced and could affect the entire way we consider services.

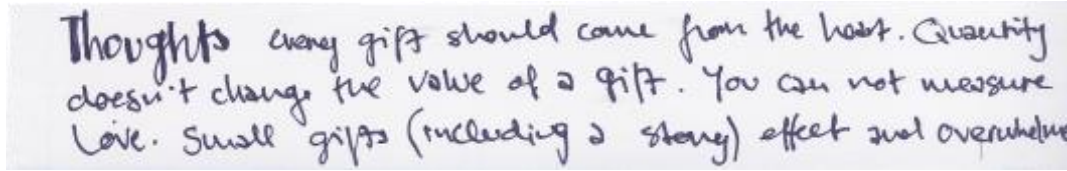


Figure 1 – Cultural probe, example of diary

## The gift

In the last 30 years, there has been a renewal of interest towards the issue of the gift within social sciences. The project here introduced is an attempt to translate the social potential of the gift acknowledged and described by social sciences into the design of a service.

### Rediscovering the gift

The gift, be it the centre of Kula ceremony in the Trobriand Island initially studied by Bronislaw Malinowski at the beginning of the 20<sup>th</sup> century, be it the bearer of *mana* addressed by Marcel Mauss in the '20s or be it the more ordinary and familiar – at least for Westerners brought up in a Christian tradition like we are – Christmas gift, is a mediator of collective and personal relationships. Regardless if the gift is aimed at gaining social status for the giver or at providing some relief for the receiver in the form of charity, the gift always mobilises and rearticulates social relationships.

The anthropologist Marco Aime (2016) has remarked that the gift is a relationship promoter and propagator, confirming what the sociologist Alain Caillé and his M.A.U.S.S (Anti-Utilitarian Movement within the Social Sciences) stated. The M.A.U.S.S has been indeed the source of the new wave of researches around the gift as device through which humans create and reshape their societies.

Anthropologist Maurice Godelier (1999) noticed that the strength of personal ties generated through, and thanks to, gifts lie in their capability to produce and reproduce the whole or an essential part of the social relationships, which constitutes the society basis. These relationships characterise society as a global whole, as well as they define the social identity of its individual members.

Therefore, as noted by sociologist Olli Pyyhinen (2014), the gift cannot be grasped in itself without paying attention to the ties that accompany it.

### Relativizing the gift

Within this renewal of interest for gift and gift giving, too often the latter has been opposed in absolute terms to market exchanges. However, these two forms of exchange are – especially in our capitalist societies – often intertwined and their distinction is more a matter of degrees than a sharp opposition.

As sociologists Bruno Latour and Michel Callon (1997) have shown, the main difference among forms or formats of exchange is related to the distribution between “what [what relations] actually enters the calculation and what” do not. Market exchanges tend to exclude specific relations and relationships – creating many externalities. However, this exclusion provides market exchanges with a freedom of movement that would be impossible for gift

giving. The latter, instead, tends to include in the exchange as many relations and relationships as possible, often creating rigidities and very complex forms of obligations. Therefore, the two “formatting systems” (Latour and Callon, 1997) are both necessary, and somehow complementary, on the one hand to avoid social fragmentation and impoverishment, on the other to grant a certain dynamism to social circulation.

## Reconsidering the gift

Godelier (1999) noticed that the gift understood as the “total social fact”, i.e. the gift considered by Mauss as a specific form of circulation of goods that produces and replicates relationships among the whole community and its members, does not exist anymore. However, this does not mean that gift and gift giving are not present as relevant phenomena also in our societies. Social scientists interested in the issue of gift have “to fight against a too much discarnate and spiritualised idea of the gift, trying to demonstrate its interests” (Salsano, 2008, p. 3). Indeed, those anti-utilitarian social scientists taking part to the M.A.U.S.S. are facing on “the one hand the sublimation of the gift, on the other its reintroduction (and reduction) into [utilitarian] economic [transactions]” (Salsano, 2008, p. 33). However, gifts keep their autonomy and specificity also in our society, where they seem to have disappeared. Somehow, as anthropologist Fabio Dei (2008, p. 17) underlined, “the apparently disappeared gift must actually be everywhere in the modern world.” Sociologist Jacques Godbout (1998, p. 96-97) singled out six features characterising modern gifts, among which a different kind of freedom in relation to gift giving, its spontaneous nature, restitution instead of reciprocity and the fact that nowadays we also give to strangers.

## Revitalising the gift

The starting point from which the project was developed is the idea of gifts as devices able to propel and catalyse interpersonal relationships. Given that, even in our modern societies, they preserve their role as mediators and communicators, gifts can therefore enable specific conditions that give way to situations where personal relationships can grow. Thus, they can catalyse broader social relationships through the sharing of experiences and values inscribed in artefacts.

The project also aims at rising awareness on the topic “gift”, while introducing a faceted view of these objects: given that the totally disinterested gift is pure utopia, “calculated” gifts are not despicable *per se*. In certain situations, the “profit”, the personal gain, regardless if it is conscious or not, is part of an act aimed at behaving positively towards the relationship itself. What could result instead problematic is an excess of thoughtlessness and unconsciousness about the relevance of gifts and their role. Such disregard of gifts can hamper an actual nourishment of relationships, thus leading to atrophy or even to the breakdown of relations themselves. Indeed, gifts can be a valuable and precious device only when they are respected and acknowledged for their relevance and significance.

Gifts, as physical objects and operating actors in everyday life situations as well as specifically *chosen* commodities, have the potential to explicitly arrange actions and gestures in order to produce clear communication and thus support the growth of positive, interpersonal ties. Gifts are indeed the evidence that good “social micropractices” (Dei, 2008, p. 21) do exist nowadays and, as sociologist Zygmunt Bauman (2013, p. 54) says, these practices are also able to encourage “informal and collaborative interactions characterised by flexible boundaries”.

The project focused specifically on the so called “gift articles”, substantially questioned by Clive Dilnot (1992) as physical, mass-produced items often characterised by non-functional applications. Taking into account the fact that “the gift article” possesses a strong and meaningful presence in the everyday life of the modern, western human beings, the project aims at providing its revaluation and resemantization, in order to fully employ the potential of the materiality by which it is defined and characterised. Therefore, differently from many social sciences’ researches about gifts, here the gift is not considered just a token for collective of personal relationships, but it is addressed in itself as a specific object, as an actor

taking actively part in relationships, promoting them also thanks to its specific tangible features.

The project has taken the form of a service, yet centred around material artefacts and their production. Though working within the current economic system, it is an intervention belonging to the “poetry of interstices” (Dei, 2008, p. 20). Indeed, it allows actions, which take place in the always blurred, informal backroom of our everyday life and, thus, fosters “micropractices” (Dei, 2008, p. 21), which, local and run by a small groups, enable change by their progressive propagation.

Ultimately, the essence of the project can be summarised in Jacques Derrida’s (1994, p. 30) words:

*Know still what giving wants to say, know how to give, know what you want and want to say when you give, know what you intend to give, know how the gift annuls itself, commit yourself [engage-toi] even if commitment is the destruction of the gift by the gift, give economy its chance.*

## From the analysis to the design output

The designed prototype service, *Sur*, is the result of a concerted action among different research activities: a review of the anthropological and sociological literature on “gift”, a comparative analysis of various case studies, an investigation carried out in the field through observations and cultural probes. All these activities have lead to the design of the first draft of the possible service.

### The controversial gift

Nowadays, gifts, especially in specific occasions like Christmas, are controversial and generate very contrasting reactions. In order to explore these different feelings, the Christmas period was used to develop various kinds of cultural probes in order to actually test the issue. The results of the probes (diaries, personal inventories, love and break up letters; Figure 1) show that sometimes people distrust gift giving’s conventional circumstances such as Christmas. In these occasions, gifts and gift giving elicit negative feelings: embarrassment, refusal, disappointment, resignation, discomfort and even annoyance. As a result, gifts are seen more and more as a burden and a waste. On the other hand, there is who literally loves to “hunt” the potentially perfect gift. However, in both cases, it can happen that gifts are hastily chosen among the millions objects the market offers, according to few requirements, which however underestimate the role of the relationship and the potential of a gift in nourishing or, at least, in articulating it. The project *Sur* found in this controversial relation with gifts, gift giving and their possible banalization (Dilnot, 1993) its *raison d’être*.

### The gift diagram

All the data gathered during this first research phase have been assessed, screened and translated into an actual design output. In order for the translation to take place an intermediated step has been required: the elaboration of the so called “gift diagram” (Figure 2). As such, the “gift diagram” represents the very heart of the investigation. The diagram was elaborated by comparing various gift manifestations in order to highlight the relevant traits of the gift giving practice. Thus, the diagram considers, first of all, the main instances of the practice – giver, receiver, gift, relationship – and then outlines the various features of each instance.

The diagram has been employed as a tool in different situations: in order to compare the various case studies, in order to position the project among the various manifestations of gift giving and in order to categorise the very first experiments of gift making through the service *Sur*.

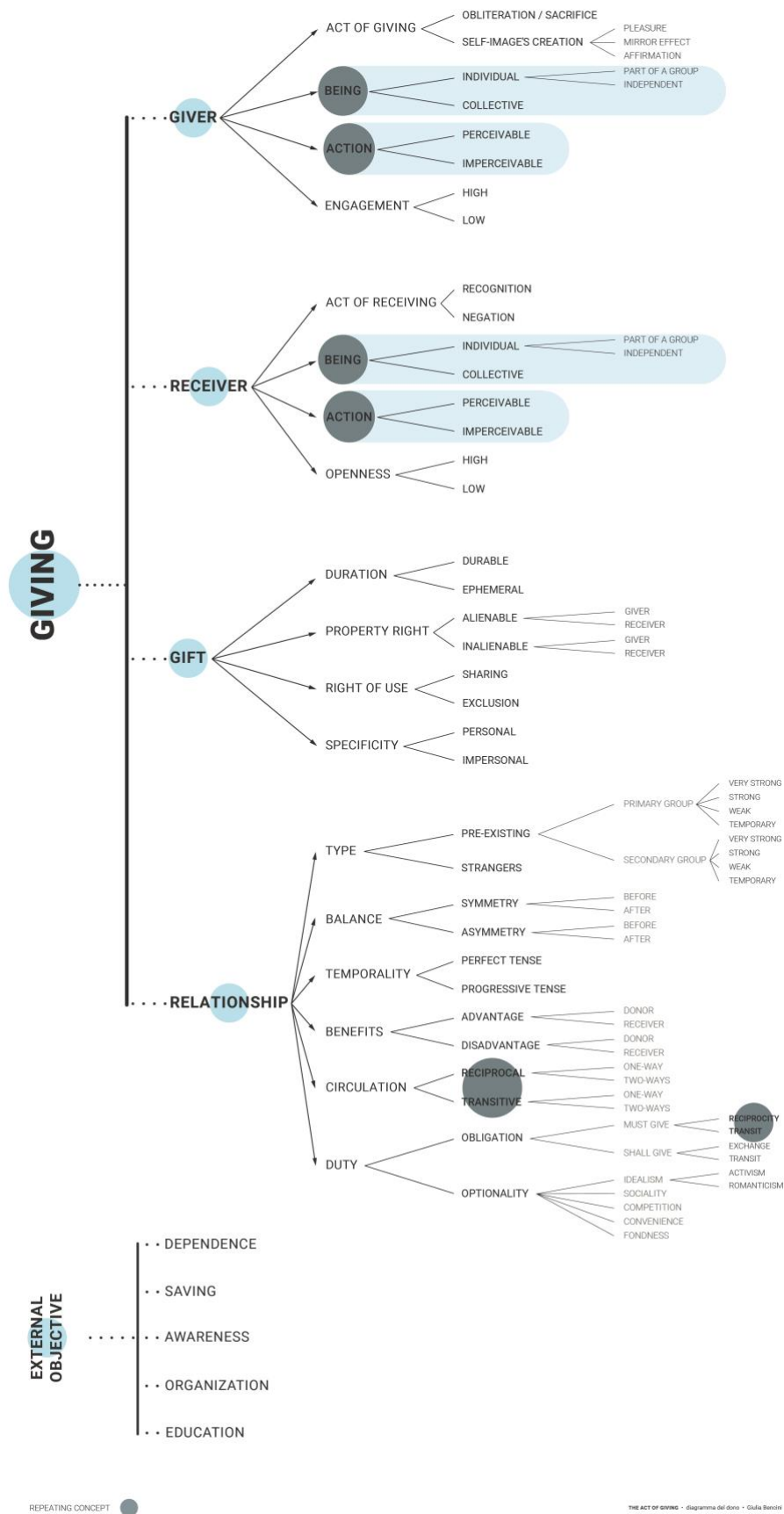


Figure 2 – The gift diagram

## The first service draft

As a result of the first research phase, a first draft of the service has been devised. In order to test it, people external to the project have been involved.

These people have been found thanks to the way the project was indirectly advertised.

Indeed, in order to thank the first persons who collaborated in the first research phase by taking part to the cultural probes activities, a series of gifts, among which handmade candles (Figure 3), have been created and given to them. These candles have been also a way of establishing a connection between already involved people, potentially interested people, and the project itself, somehow experimenting with gift giving within the development of the project itself.

In this way, it has also been possible to find the first testers of the service, who explicitly asked for a gift generated through *Sur*.



Figure 3 – Candle

The very first three tests of gift co-creation that were developed arose from real requests of three persons, who eventually gave the created objects as gifts.

These tests were:

- A necklace from Ivana to Federica. The two girls are best friends since childhood, but they currently live far away. The first phase of the service, the dialogue, elicited that Federica, the receiver, likes to wear eccentric necklaces. This was the starting point for the design of the gift, which eventually resulted in a necklace created with an old shirt belonging to Ivana (Figure 4).
- A rucksack from Giulia M. to Giulia G. Giulia and Giulia are colleagues but also very good friends. When the receiver's birthday was approaching, Giulia M., the giver, decided to create a rucksack that could be used both as a city bag as well a gym bag, to support Giulia G. in her decision to intraprendere a healthier lifestyle (Figure 5).
- A photo album from Su to Di. Su is a Chinese student living in Bolzano. When her mother came to visit her from China, they decided to spend time



together travelling around Italy. In order to collect and keep track of trip's memories, a travel diary was developed. It was used to note down feelings and emotions and, later, transformed into a photographic and written album of Su's and Di's experiences (Figure 6).

These tests have been managed in a very flexible way, in order to be able to grasp unexpected and potentially useful aspects of the becoming project. Therefore, a series of very rough tools have been developed, such as a first draft of a questionnaire to help the designer in getting to know the giver, the receiver and their wishes and an outline of a greeting card accompanying the gift and explaining the value of the object and the production process behind it.

The three experiments have been essential to understand:

- the timing necessary to develop the gift as outcome of a process of co-creation;
- the tools needed in order to deepen the dialogue between designer and giver;
- the desires of the giver, in terms of physical and visual material at disposal,
- the desires concerning the gift card and the information to be there included.



Figure 4 – Necklace, gift from Ivana for Federica, process of production of the gift



Figure 5 – Rucksack, gift from Giulia M. for Giulia G.



Figure 6 – Photo album, gift from Su to Di

## The second draft and the final test

After having analysed the results of the first experiments with the starting service draft, the second and final draft (see below, § *Sur*) has been designed together with the needed tools. The whole system has been tested a second time into what can be considered an actual proof of concept, with the co-design and co-creation of four more gifts:

- *Ginkgo* – a gift from Francesca to Andrea. An earring which was thought for Francesca’s stretched piercing. Andrea receives it whenever the couple has to split up. The ginkgo biloba leaf has a special meaning for the couple and symbolises their relationship (Figure 10).
- *Lemon* – a gift from Maria to Lena. Given Lena’s delicate skin, *Lemon* is a set comprising a natural deodorant combined with the instructions and the ingredients to let the Receiver make the deodorant again at home (Figure 11).
- *Mate* – a gift from Matteo to Riccardo. Matteo’s brother, Riccardo, needed a purse where to put his most important belongings. Thanks to the giver’s ability in making bags, a belt bag with an old coat that both brothers wore when children was crafted (Figure 12).
- *Riflesso* – a gift from Stefania to her family. Given Stefania’s passion and talent for taking pictures, a salt and pepper shakers which works also a frame for the giver’s pictures was developed. It is a tool though to start positive conversations during meals (Figure 13).

## Sur

The service aims at allowing people to conceive and produce gifts, which are able to articulate, nourish and strengthen relationships. The output of the service are then objects, which even by their sole material presence, are able to act and to make people act one in relation to the other.

The core of the concept is the creation of an alternative service for gifts, which can guide people through a journey of rediscovery of the receiver as well as of the relationship between the giver and the receiver. Thus, *Sur* is a service that focuses on objects that act as actual mediators of relationships.

In order to achieve this aim, the service mobilises a network of different actors, nourishing at the same time the relationships among them.

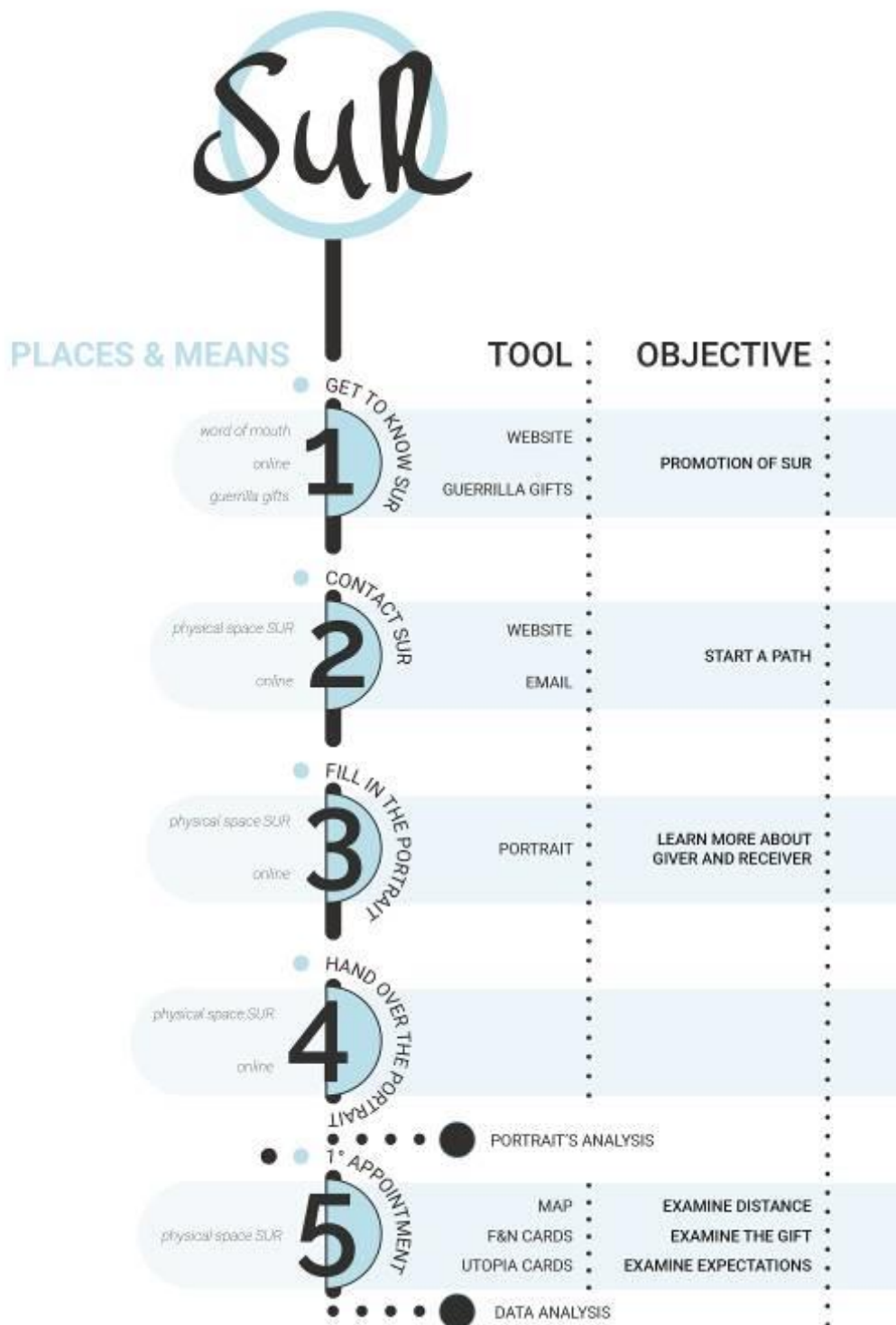
The final configuration outlines a service in which, under the guidance of a designer who assumes the role of “Personal Gifter”, it is possible to co-create gifts, by weaving, multiplying and strengthening social relationships that can go much beyond the one between the giver (the client), the designer (the agent) and the receiver, by involving local makers and crafts(wo)men – following the example of *Superlocal* by Andrea De Chirico (Dardi, 2016) – as well as other designers and clients of the service.

## The service

The final flowchart<sup>2</sup> of the service is the following (Figure 7):

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<sup>2</sup> This service flowchart was drafted at the end of the design process of the present prototype. During the design process various schematizations have been tried, however not in a systematic way. Therefore, a service blueprint or a service storyboard as proposed in the Social Innovation Journey Toolbox (Corubolo and Meroni, 2015) have not been used, but could become useful for future adjustment or revisions of the service flow.



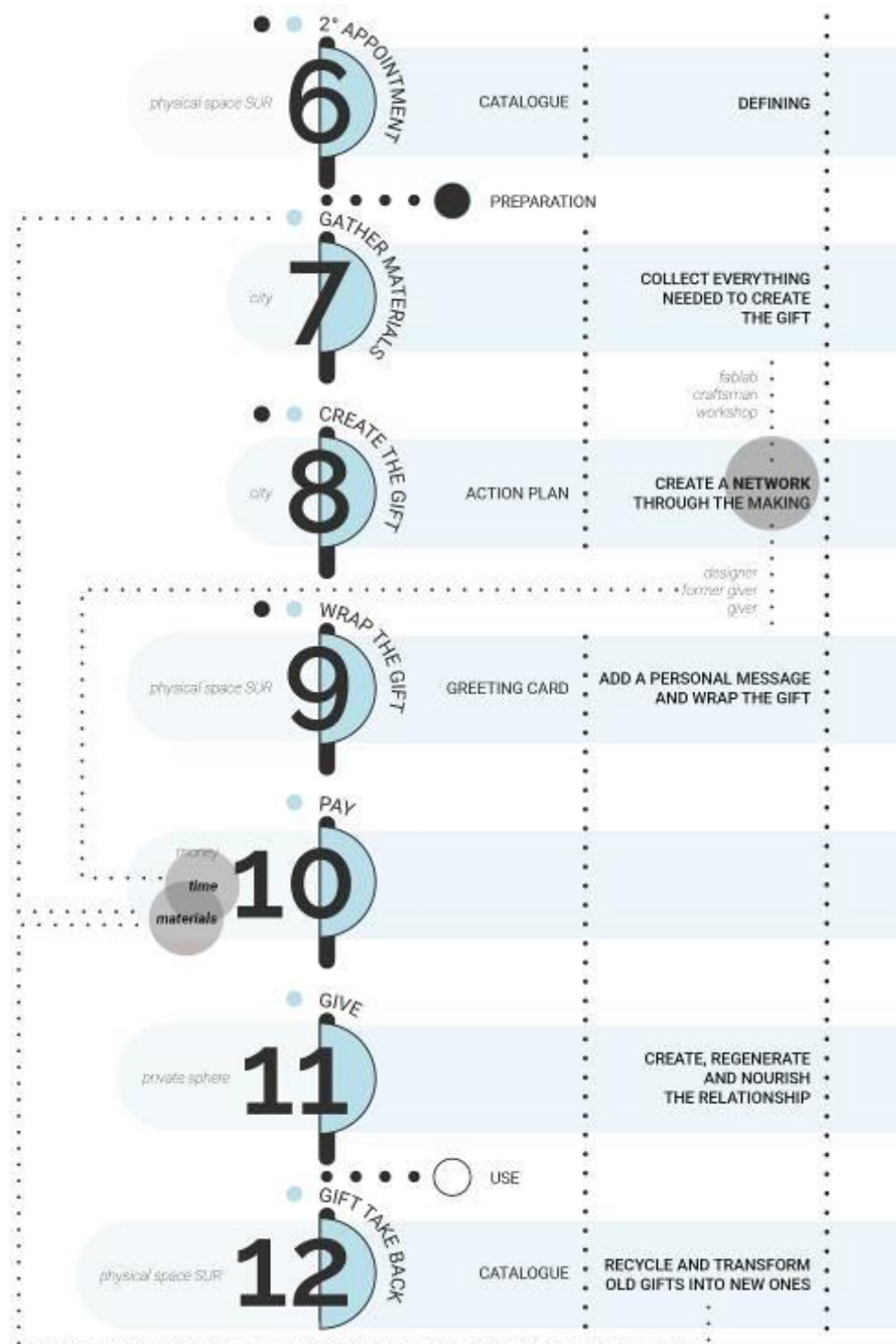


Figure 7 – The service flow

As mentioned previously, a range of different roles is involved in the process generated by *Sur*:

- The Giver (the client) – anybody who wishes to make a gift.
- The Designer or Personal Gifter (the agent) – not only an expert in the field of designing artefacts, but also a mediator, a creator of networks and a facilitator. As a designer the Personal Gifter, needs to unfold all her/his competence as “broker of objects’ language” (Verganti, 2003), therefore s/he is a person who is able to translate styles, tendencies, expectations and desires into specific objects’ configurations and also into actual production networks.
- The maker(s) – anybody having the skills to realise the gift: local crafts(wo)men, local makers, local designers, the Personal Gifter her/himself, the Giver, other Givers-clients.

The service is articulated in three main phases:

- The dialogue phase – carried out by the Personal Gifter-Designer and the Giver; it aims to get to know the context and the pre-existing relation between giver and receiver.
- The collaborative design phase – performed by the Personal Gifter-Designer and the Giver; it is meant to conceive and devise the object which will be given.
- The production phase, which involves besides the Personal Gifter-Designer and the Giver, the Maker(s).

A set of six tools facilitates the process and helps different involved actors in relating emotionally (Figure 8 and 9). Moreover, the tools are especially helpful in order to investigate the initial situation between giver and receiver. They, therefore, allow the Personal Gifter-Designer to constructively guide the giver in developing the best gift according to the circumstances.

The process is distributed throughout a flexible timespan, dependent on the availability and the resources of the giver. According to the time at his/her disposal and the price s/he is willing to pay, the service can be adjusted to specific needs-wishes.

The cost of the produced gift can be covered in three different ways. First of all, the giver can decide to commonly pay with money. Additionally, it is possible to pay with spared materials in possession of the giver, which can be useful for the service itself and the creation of future gifts for future givers. Moreover, in case the giver has peculiar crafting abilities, s/he can put at disposal of the service his time, helping another giver.

Moreover, the service provides the receiver of the gift with a product take-back service, transforming objects at their end-of-life in possible different and new gifts.

The system’s flexibility makes *Sur* a format, which can be applied and adapted to different spaces and contexts, since it is developed to take advantage of the local potential and resources of every place, which will host it.





Figure 8 – *Portrait*, example of one of the tools developed for the service flow



Figure 9 – *Feelings & needs cards*, example of one of the tools developed for the service flow



Figure 10 – *Ginkgo*, gift from Francesca to Andrea



Figure 11 – *Lemon*, gift from Maria for Lena





Figure 12 – *Mate*, gift from Matteo for Riccardo

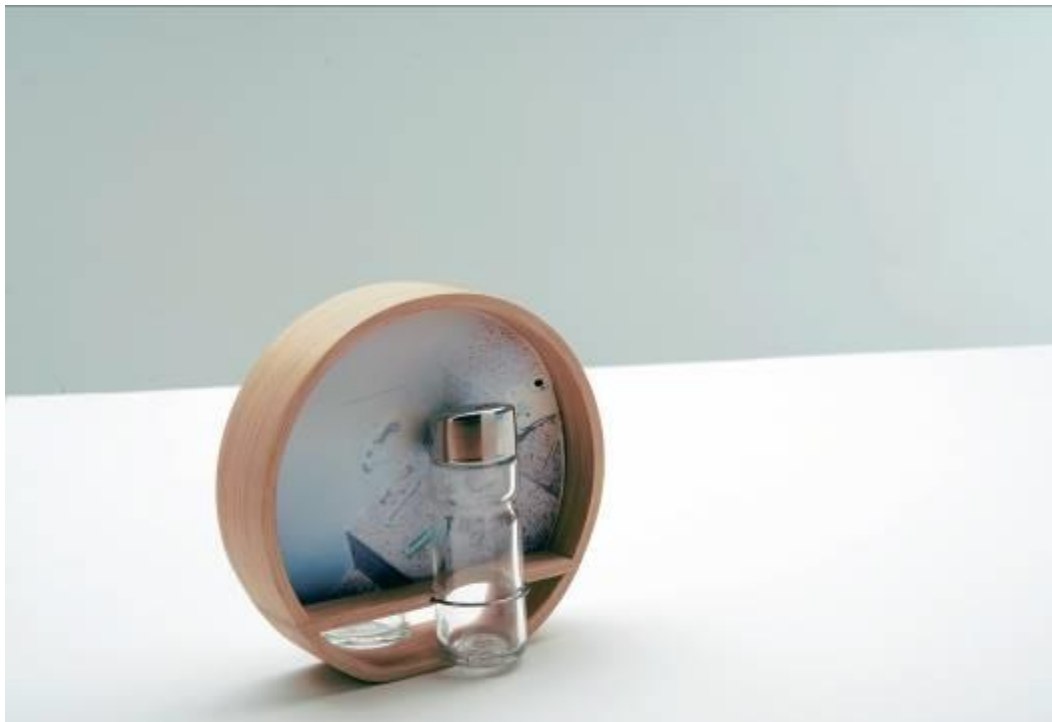


Figure 13 – *Riflesso*, gift from Stefania to her family

### Issues still to be tackled and questions still to be answered

*Sur* is still a prototype and, undoubtedly, it elicits questions about its actual implementation and life beyond university walls, as well as about its economic sustainability, given that there are also some unaddressed issues – not really addressable within the framework of a Master thesis.

On overall, it is possible to take into consideration two challenging issues: the cost of the gifts produced with the system and the time required to design them from scratch.

As for the price, as we said, *Sur* offers a threefold option for payment: through money, through materials, through time and skills. However, this threefold system provides only a partial answer to the issue of price and costs: it creates a circular mechanism which supports and nourishes the service itself, however without clarifying the compensation for the Personal Gifter-Designer and for the involved crafts(wo)men, and hence the price of the gift. As for the time, the experiments carried out have shown the gift feasibility in reasonable time, which is anyway much longer than a purchase of a gift from the market. However, these were just experiments and to understand the timings of the overall service when regularly workings is another matter. Both issues require further research. At the same time it is clear that the services offered by *Sur* are addressed to customer that give value and can appreciate the value of time and can invest it in making gifts.

## The value

*Sur* is a service, which operates in the social sphere, aiming at creating, strengthening and nourishing relationships among people, thanks to the mediation of artefacts. Therefore, *Sur* is based on a series of principles, which create value for both the people involved in the process of production and exchange of gifts and the environment in which these objects are produced and circulate. Moreover, *Sur* delves into the value of design.

### The value of *Sur*

*Sur* is strongly characterised by the context in which it occurs. Every gift is defined by a series of variables, which, together with the specific relationship between giver and receiver, make it unique from the very beginning. These variables are related to local materials and competences, as well as the added value of the giver's capabilities.

On the whole, *Sur* is a service which allows to co-create different kinds of value, basically implementing a service according to what proposed in Wetter-Edman et al. (2014). The values it implements are<sup>3</sup>:

- economic: at a local level, but with the possibility to be scaled; it works through different possible economic transactions;
- environmental: it aims to produce objects characterised by a long life-cycle, it employs techniques such as recycling and upcycling of old/unused materials and objects and it leans towards local, sustainable materials and production techniques.
- societal: apart from the work on relationships themselves, it consists in creating awareness about local manufactures and capabilities, investing in their potential. The value for the community lies in the creation of a network which connects designers, craft(wo)men, givers and receivers.
- individual: the giver has the chance to create him/herself a highly personal gift, the receiver will get a very personal gift which is unique; the Personal Gifter-Designer and the maker(s) can increase and spread their personal networks through the process.

### The value of design

Design is a discipline, which (also) deals with artefacts. According to the anthropologist Daniel Miller, relationships with objects we own are often really deep and, usually, "the closer our relationship are with objects, the closer our relationships are with people" (Miller, 2014, p. 1). Therefore, the central role of the material culture for relationships: "People exist for us in and through [the] material presence [of objects]" (Miller, 2014, p. 286).

With reference to the issue, the anthropologist Annette Barbara Weiner (1988, p. 159) stated:

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<sup>3</sup> The model of different values is inspired by Hirscher and Fuad-Luke (2013); see also Blomberg and Darrah (2015), for thinking value beyond the economic value.

*We are intimately involved with things we love, long for, and give to others. We also mark relationships with things [...]. Through things we craft our self-image and cultivate and enhance relationships. Yet things also keep the past vital for us. [...] Things not only take us back in time but also may become the building blocks that link the past to the future.*

Therefore, design, by directly or indirectly articulating artefacts and taking them into consideration, has a key relevance in the shaping of our social relations: as Dilnot (1993, p. 56) wrote, “making (and designing) are moments of making (and designing) ourselves”. The service *Sur* intends to delve and multiply this form of the value of design, by drawing together and involving in the design process of gifts various actors, so that the very process of “doing” can encourage debate and exchange of ideas, allowing people to relate with each other in different and meaningful ways.

## **Sur as service design**

*Sur* as service can fall into Carla Cipolla and Ezio Manzini’s (2009) definition of “relational service”: “an emerging new service model deeply and profoundly based on the quality of interpersonal relations between participants” (Cipolla and Manzini, 2009, p. 46). Relational services are, indeed, deeply collaborative systems in which boundaries between roles are blurred. As it happens in *Sur* they start “with what the participants know how to, can, and want to do.” (Cipolla and Manzini, 2009, p. 50). However, *Sur* is based on artefacts and nourishes personal relationships through them, i.e. through mediators, and not in an “immediate” way as supposed by Cipolla and Manzini relying on Martin Buber’s conceptualisation of the I-Thou relationship. Moreover, given the peculiar triadic relation presupposed by gift-giving (giver-gift-receiver), which is different from the dyadic one (agent-client) usually presupposed by services, the personal relationship nourished by *Sur* goes beyond the service encounter. We consider this feature of *Sur* the key to make it an actual social project able to address relations that go much beyond those actualised in the service encounter. We have, indeed, also to consider that it is very likely that other people like crafts(wo)men will be also involved in the development of a gift.

In this regard, *Sur* can be considered a service, which fosters value co-creation in relation to a context as considered by Service Logic (Wetter-Edman et al., 2014) which, however, can be not only quite broad but also emergent according to the specific network a gift requires. Therefore, its value, as Jeanette Blomberg and Chuck Darrah state, “is not intrinsic to the service, but must be understood in relation to broader societal concerns” (Blomberg and Darrah, 2015, p. 174) raised by each giver.

Given that according to anthropology “the gift” is the base for reciprocity and, then, for any exchange of services, and that, hence, “the gift” is key in defining the “human condition” addressed in Blomberg and Darrah (2015), the project “The Act of Giving” is an attempt to actually develop a practical “anthropology of services”. Thus the relevance of the project can go much beyond the specific project *Sur*, by opening a reflection on the role of “the gift” in services more in general.

## **Conclusions**

The paper has introduced the prototype service *Sur*, which is the result of a Master thesis project about gift and gift giving.

Provided the features of gifts and their foundational relevance for social relations, gift seems to be a very interesting entry point for the issue of sharing and collaborating. Indeed, the service *Sur* not only strengthen sharing practices between givers and the receivers, but it also allows the emergence of an articulated process of sharing and collaborating among designers, givers and possibly local crafts(wo)men.

The interest of the gift for service design goes, however, much beyond *Sur – Sur*, if anything, can play the role of an experimental proof of concept of gifts' relevance – and much beyond just sharing and collaborating.

Indeed, given the anthropological relevance of gifts for the emergence of societies through the establishment of social relationships, we deem that the gift provides a framework for thinking services in general and relational ones in particular. The gift leads us to think that personal and social relations can never be immediate as proposed by Cipolla and Manzini (2009) via Buber, but that they always happen through mediations. Not only thinking through mediations, rather than through immediateness, seems to us more in line with everyday practices and with the practices designers deal with, but also if “immediate” relations were actually possible, there would be no need for design. Luckily (or unfortunately), mediations are needed, especially in service design and, therefore, designers are thus needed too.

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# Building trust in relational services: The analysis of a sharing service between neighbours

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## Abstract

This article presents a study about a crucial interpersonal quality in relational services: trust. We analyse the trust-building process that enables a sharing service between neighbours called “*Tem Açúcar?*”. Based on literature review on service design for social innovation and sociological aspects related to trust, we describe the service process three-level segmentation: trust in the enabling platform (product-service system), trust in the neighbour (peer-to-peer) and trust in the local network (neighbourhood). It is concluded that trust-building occurs both top-down and bottom-up among participants and how it turns into confidence throughout the process. This study contributes to investigations not only about collaborative and relational services but also about issues related to social behaviour, dematerialization of consumption and quality of life.

**KEYWORDS:** service design, social innovation, relational services, sharing, sustainability

## Introduction

This article presents the case of “*Tem Açúcar?*” (“Do you have sugar?”), a sharing service that aims to support interactions between neighbours. It uses a platform to enable peer-to-peer collaborations and resource sharing within one neighbourhood.

Therefore, the service suggests a paradigm shift in people’s routines by fostering the shared use of objects previously considered as individual resources.

This study analyses the conceptual, operational and interpersonal levels of the service with the aim to identify its trust-building enablers and processes. It contributes to the research that work in the intersection between service design and design for social innovation and sustainability (Manzini, 2015), with particular focus in the characteristics and dynamics of the collaborative and relational service models (Jégou & Manzini, 2008; Cipolla & Manzini, 2009). These two service models require particular attention to the qualities of interpersonal interactions when designed.

## Theoretical background

### Collaborative services, relational qualities

In recent years, design has been a fertile field for the development of social innovations. Social innovation generates changes in people's ways of living and doing, fostering sustainability every day (Manzini, 2015). Social innovations were analysed by design researchers and two service models were identified: the collaborative and the relational services (Cipolla & Manzini, 2009).

Services are classified as collaborative when the user ceases to be passive and begins to contribute actively with their own skills, social resources and individual capacities (Manzini & Vezzoli, 2011). Collaborative services require participants to be active co-producers of a commonly recognized benefit (Jégou & Manzini, 2008).

Relational services are a specific kind of collaborative service on which participants are not only active co-producers but also need to interact with others in a highly personalized way, and this requires specific interpersonal qualities to operate, such as trust and familiarity (Cipolla, 2012). The construction of relational interpersonal qualities is related to how open people are to interact with each other, and the role of design is to enable such openness between participants (Cipolla & Manzini, 2009). Both service models are structured in a way that each action performed by one participant reciprocally benefits all others.

Collaborative and relational services require an enabling platform (Jégou & Manzini, 2008), such as the case addressed in this study (*Tem Açúcar?* platform), creating a fertile environment so that collaborative and relational qualities can develop.

### Building trust

Trust is an essential interpersonal quality for collaborative and relational services.

Participants need to trust that each one will perform their own role in the co-production process, and if they feel confident in the model introduced, they will feel motivated to be active in the collaborative network. Therefore, the analysis of the trust building processes is crucial for the research in collaborative and relational services.

Trust is defined by Rotter (1967), through the lens of sociology, as an expectation held by a person or a group of people that the word or promise, whether expressed verbally or in written form, will be maintained and fulfilled by another person or group of people.

According to Brei & Rossi (2005), trust is not a determining factor for the occurrence of a sharing habit, but it is understood that its importance varies from case to case, that is, there will always be a minimum degree of trust necessary for the sharing to occur.

The concept of confidence is more associated with the sense of belief. As a sequence of similar experiences occur, people tend to believe that the next will occur just like the previous, following their expectations. The difference between trust and confidence is that the sense of trust is related to risk, when there is low familiarity; on the other hand, confidence is based on higher levels of familiarity, usually associated with people and entities (Siegrist, Earle & Gutscher, 2005).

According to Rotter (1954, 1967), when a person has a higher degree of trust in something or someone, it tends to generate expectations on new experiences with them, and the more similar experiences, more confidence grows, extending this value to similar situations without having previous contact with the actors.

## Methodological framework

This paper presents an exploratory case study segmented into the following phases:

1. Observation - the case was first mapped to identify its purpose;

2. Creation of a hypothesis - "Stimulating trust building between users is indispensable in sharing services";
3. Empirical research through Service Safari - Immersion using *Tem Açúcar?* app to collect data through service experience;
4. Results and discussion – Presentation and analysis of collected data.

The study is based on literature review that addressed the main aspects of service design for social innovation, collaborative organizations and relational qualities. The relational qualities are analysed based on Rotter's interpersonal trust scale (1967).

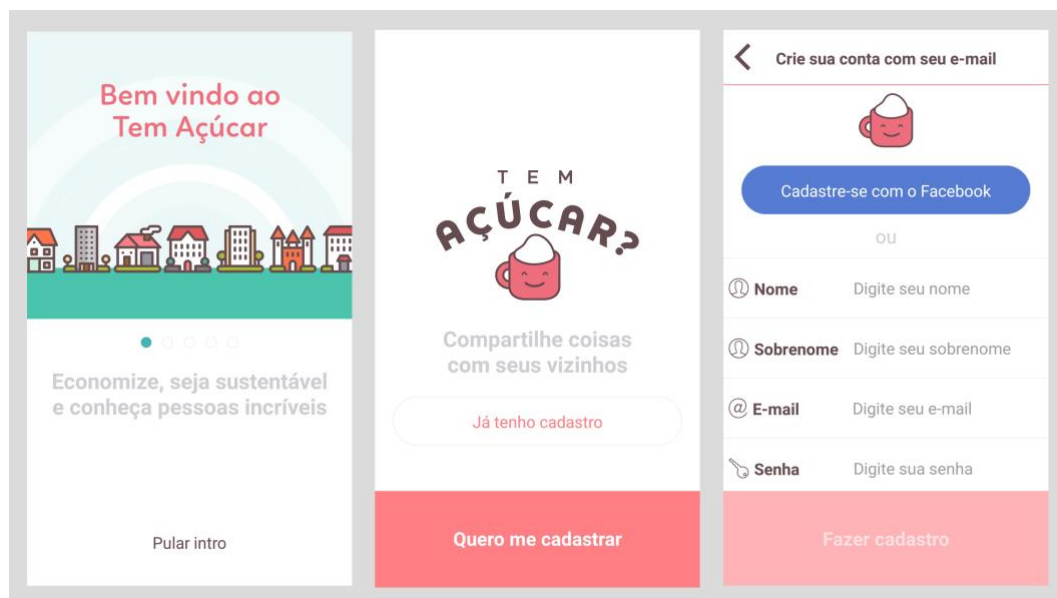
The following tools were used to analyse the proposed case:

- User Journey - Trace user actions required within the platform;
- SWOT Matrix - Identification of strengths, opportunities, weaknesses, and threats of the concept of the sharing platform;

A specific tool was developed for this study to analyse the service architecture and its trust-building process. It was called 'Trust Segmentation Table' and it presents the constructs needed to foster the relational quality between participants. It is segmented into three levels: platform, neighbour and network. The platform level presents the constructs for the user to establish the trust link with the enabling platform, the neighbour level presents the constructs for the trust between users (peer-to-peer) and the local network level focuses on the relationship between a single user and the network, how the user establishes trust in his neighbourhood.

The main aspects observed in this analysis of the trust-building were the initial contact of the user with the service, the factors that contribute to increase trust degree and how the growth of this type of (sharing) service occurs.

## Case study

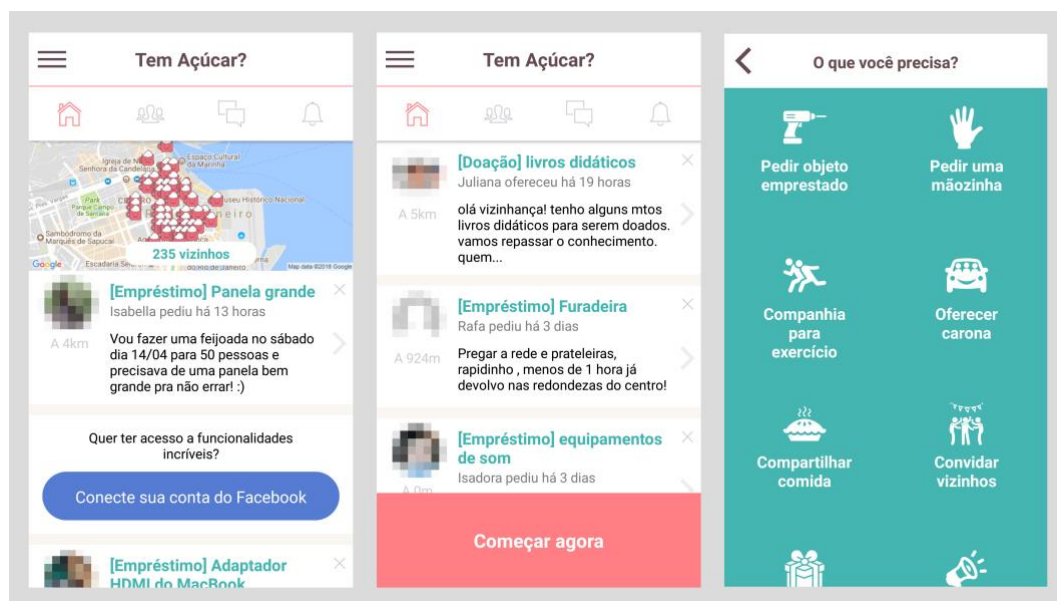


Source: Tem Açúcar (2018)

Figure 1 – *Tem Açúcar?* introduction, log in and register screens



*Tem Açúcar?* is a platform created in 2014 by Camila Carvalho, a Communications student engaged in the sustainable consumption cause. It enables the sharing of objects between neighbours, establishing a local collaboration network. The service can be accessed through an app (for smartphones and tablets) available free of charge (Tem Açúcar, 2017). After registering and typing an address, the user views a map of the region with the number of people registered on the platform and a list of requests made by the neighbours, indicating the distance between them. The platform segments the neighbours' requests according to the following categories: ask for an object, help to do a task, company for a walk, offer a ride somewhere, share food, invite neighbours, donate objects and other.



Source: Tem Açúcar (2018)

Figure 2 – Neighbours' requests timeline and categories

The service was structured to combat hyper-consumption and lack of interaction among residents of the same neighbourhood, two problems that mainly afflict metropolises today. Through the question “Why buy when you can share?”, the platform invites users to reflect on the parallel between ownership and use and the social/environmental impact generated by consumption and discard.

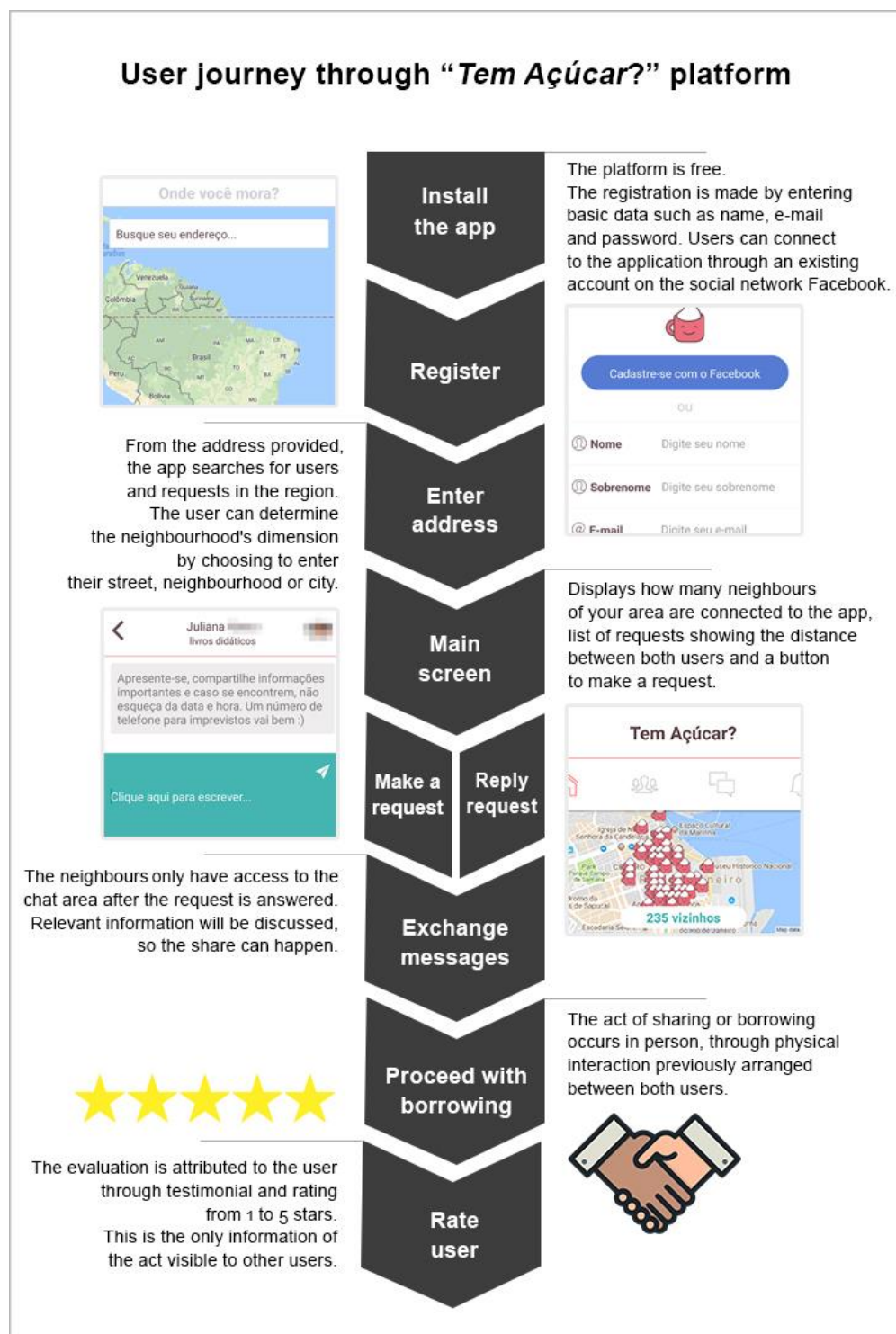
The service values are based on the ideas that being is better than having, access is better than ownership, collaborating is better than competing, interdependence generates more results than individualism and that abundance is the result of relationships built (Tem Açúcar, 2017).

According to the creator, the idea was first prototyped in a condominium complex where she lives. Residents could share their needs through a paper worksheet placed in a common area, so those who were able to lend or help could get in contact. (Draft, 2015).

Initially, it was developed as a website and it reached 22,000 users from all over Brazil (O Globo, 2015). The current version has already surpassed the mark of 10 thousand downloads since its launch in March 2017.

## Results

Following an initial phase of observation using the service's app, website and press data, it was possible to summarise into the User Journey below (Figure 3) the necessary steps for a new user to start acting on the service platform.



Source: Adapted from Stickdorn & Schneider (2010), *Tem Açúcar* (2018) and ShareIcon (2018)

Figure 3 – User journey through *Tem Açúcar?* platform

Although *Tem Açúcar?* is a free tool and does not require personal document numbers, there are some restrictions to use it. It is not allowed to sell products, advertise rental of physical spaces (rooms, houses, apartments or parking spaces), ask for money, lending other people's services, among other inappropriate requests (O Globo, 2015).

Users only have access to requests' description, as well as information like name, photo and the distance between users in kilometres and the user rate by others who have already had experiences with that person. The evaluation consists of testimonials and 1 to 5 stars review. When a user answers or places a request to a neighbour, a private messaging function is enabled so they can talk and schedule the meeting. It is possible to denounce a neighbour or silence notifications from a specific user to no longer receive requests coming from that person. By connecting a personal Facebook account, it is possible to check friends in common with neighbours.

The service is connected to Google Maps but it does not work automatically through geolocation. It allows changing the address at any time, and if a user enters a region without registered users, it suggests inviting neighbours and friends to populate it.

## Service Safari

An immersion in the service was performed during one month to collect data from the users' point of view. Requests for borrowing objects, professional service recommendation and donation of office articles were responded as well as requests for book lending and offer of computer articles for donation were addressed.

Three lending of objects (umbrella, book and decoration object for children's party) out of seven answered requests were successfully completed. The other demands were service recommendations, which is usually intended to analyse the cost/benefit ratio between various professional services and tends to be in the timeline for a long time. The process is fast and does not require a face-to-face meeting in these cases. Users tend to forget to mark it as concluded. Because of that, although the purpose has been reached, it is not possible to measure the service effectiveness.

One computer article donation (keyboard, power cable, network cable and HD) was made out of the two requests submitted. It allowed an increase of confidence in the respective receptor, which offered help with computer repair and maintenance when was necessary. The answer time for new requests may vary according to its aim and the stipulated location range at the time of submission. There is no way to change it once it has been submitted. If you want to modify its configuration, you need to cancel it and submit again.

It is believed this is a valid way to ensure that users do not change its purpose, which would weaken the system transparency. If modifying requests was possible, it would be hard to know if the evaluation is based on the new or the previous version. In addition, it ensures every single request will be highlighted in the timeline according to its date and location. However, the possibility of changing the location range could help open requests to have higher visibility. It would be necessary to implement a new system alert or requests rearrangement in the timeline.

On the high point, when two users interact to make a borrowing, there is no indication of progress level, so the network does not know it has been answered and solved. Since the borrowing process in *Tem Açúcar?* seems to be segmented in four moments (agreement/conversation, delivery, return and evaluation), requests are visible until the requestor marks it as concluded and both users are evaluated.

The close request issue is a point that could be better enhanced. It was observed it is necessary to mark requests as concluded or cancel them to stop its visualization on the timeline. If this is not done, it can stay forever visible on the list for all neighbours.

Not having a due date by default is interesting for company for workouts and hitchhikes requests. However, it can cause undesirable requests like the already resolved or forgotten ones by the users, leading to fruitless interactions and trivial evaluations. This generates more time to interact in a non-productive way, causing a massive number of messages that require

an answer. Negative evaluation happens in some cases because users do not respond to people who were willing to help.

## The building of trust

Table 1 below shows the segmentation of the constructs for the formation of trust in the co-creator elements of the service from the user's point of view.

Table 1: Trust Segmentation Table

Platform	Neighbour	Local network
<ul style="list-style-type: none"> <li>- Requires only basic personal information, eliminating the risk of private data leak.</li> <li>- It does not expose users' data besides the name, photo and request. Allows users to control the level of information to be shared.</li> <li>- Allows the user to control the extension of neighbourhood displayed.</li> </ul>	<ul style="list-style-type: none"> <li>- There may be people already known by the user to whom the trust bond has already been developed or at least started previously in routine living (moments of entry and exit from home, among other situations).</li> <li>- It is possible to check the platform if users have friends in common, which helps increase levels of trust.</li> <li>- Once sharing was successfully concluded, both users establish a deeper level of trust because they have met each other in person, they know where to find the person and know that the person likes to co-create in a collaborative environment.</li> </ul>	<ul style="list-style-type: none"> <li>- When the users know the other is close, they trust that the sharing will occur in a satisfactory way, because they will have easy access to the person in person if any problem occurs.</li> <li>- The risk of not having an object returned or having it damaged without prompt resolution is reduced by the fact that all network participants wish to continue enjoying its benefits. So, they avoid inappropriate behaviour with this purpose.</li> <li>- As more successful experiences occur, the level of trust and confidence in what is proposed is greater and wider.</li> <li>- The evaluation of the users helps as a construct for trust in the network. Reading the testimonials, the person willing to interact will be relying on the collective voice of previous experiences with that co-creator element.</li> </ul>

Source: Created by the authors.

It can be said that building and strengthening trust in this service occurs gradually and cyclically. Each interaction performed generates constructs to increase trust (user-platform, user-network or user-user interaction). Once sharing is made, a testimonial and rate will be submitted to the platform, validating not only users but the trust in the network. From the moment a user registers on the platform, it is believed that trust building can be read in two ways: top-down or bottom-up as shown in Table 2 below (Manzini, 2008).

Table 2: Trust Building Routes

Top-down	Bottom-up
<p>User - Network</p> <p style="text-align: center;">↓</p> <p>User - User</p>	<p>User - User</p> <p style="text-align: center;">↓</p> <p>User - Network</p>

Source: Adapted from Manzini (2008)

Trust built from top to bottom occurs in cases where the user does not know any of the other participants in his or her neighbourhood in the app, so his or her choice to participate

in sharing will be based on the assessments and testimonials provided by the network, thus building trust in interpersonal relationships as experiences are established.

On the other hand, trust built from the bottom up occurs in cases that the user already knows participants of their neighbourhood or have been invited to participate by trusted family members and friends. This way, it is believed that a user tends to participate more actively and start inviting more people to join the product-service.

We conclude that trust in *Tem Açúcar?* is built asymmetrically, varying in its three degrees: the platform, the neighbours and the network. As sharing and interpersonal relationships happen, each of these elements are validated and trust levels are raised by the participants.

## Real benefits and weaknesses of the model

The concept developed has great potential for replication in different network contexts, but some practical aspects of the tool have vulnerabilities that can become threats to the development of local networks and the success of the product-service system. The SWOT matrix (Table 3) allows better visualisation of the service particularities and highlights the points that require greater attention to make the service viable in other contexts or on a larger scale.

Table 3: SWOT matrix

Internal	<b>Strengths</b>	<b>Weaknesses</b>
	<ul style="list-style-type: none"> <li>- Local network character;</li> <li>- Independence and self-validation;</li> <li>- Maintains user privacy;</li> </ul>	<ul style="list-style-type: none"> <li>- No verification of user's identity;</li> <li>- Lack of moderation on the platform;</li> <li>- Little integration with social networks and other applications;</li> </ul>
External	<b>Opportunities</b>	<b>Threats</b>
	<ul style="list-style-type: none"> <li>- It is replicable and adaptable for different contexts;</li> <li>- Exponential growth through word-of-mouth;</li> <li>- Exercise and propagation of concepts pertinent to the maturation of the platform;</li> </ul>	<ul style="list-style-type: none"> <li>- The absence of relational qualities such as trust, security and familiarity;</li> <li>- Scarce resources to maintain the functioning of the enabling platform;</li> <li>- The discrepancy between requests and aids;</li> </ul>

Source: Adapted from Serra, Torres & Torres (2004)

The platform can be understood as a virtual environment for conglomerates of local networks. Thus, the failure of one network does not compromise the operation of the others. As it has little integration with social networks, it ends up having the benefit of being independent in its operation, it is not necessary to use any other applications for it to work, which facilitates installation, reinstallation and use. It has internal validation since the participants themselves in a network character validate the functionality of the tool and the sharing relationships through testimonials.

A pertinent weakness is that there is no identity verification of users. It is not necessary to submit any type of document to register. Therefore, there is no way to know if the person is actually being true as to his or her identity or they are pretending to be another person. In this way, it is also difficult to track users who may have used the enabling tool in a way that causes harm and damage to other participants. For those who join, it can be an advantage not to need to expose documents, but it is a factor that compromises network's security.

Although there is clarity as to the benefits that this platform model can provide socially, as the number of users grows, the “noise” increases in proportion. Keeping neighbours engaged and providing learning for new users may require a level of mediation that the tool does not currently have.

Although the rules of use are clear and there is the possibility of the users themselves denouncing neighbours, maintaining a group with the same behaviour pattern within the tool would require the election of mediators or moderators. These elements could be people who obtained more shares and positive evaluations, being responsible for their area of the neighbourhood for a certain time, thus collaborating so that the learning by the new users was effective and inhibiting inappropriate behaviours.

A threat that compromises incisively is the cost of maintaining the platform, which is made through crowdfunding (Medium, 2016). Keeping users engaged to the point of keeping a decent number of supporters in fundraising campaigns is a challenge. It is important to update the tool so that it remains relevant to the participants.

It is believed that the platform not only stimulates the act of sharing but also develops the maturation of its participants regarding issues of collective use, cooperative and sustainability, what makes them able to join other habits that require a greater commitment. There is room for *Tem Açúcar?* to develop several offers of collaborative service having the assurance of supporters.

## Discussion

The borrowing and lending habit as the almost familiar coexistence between neighbours was lost in the big cities. Although this practice is not new, an enabling tool that creates even broader opportunities for sharing than just the street neighbours can be considered a social innovation.

From the aspects analysed, it can be said that *Tem Açúcar?* can be defined as a product-service system of collaborative and interpersonal nature. Through an enabling platform (the app) peer-to-peer collaborative services are performed that have a common factor: location. As the interactions are happening, the formation of local networks is solidifying. In this service, three types of relationships are identified: platform-user, user-user and user-network. Gradual and cyclically, trust can be built either from the top-down or bottom-up. Initially, new users can trust in a greater degree on the platform, the network or a participant. Once they gain sufficient confidence to act within the app, the users might or might not have high trust, it will depend on their first sharing experience and how much they rely on the other elements that make up the service.

Unlike more widespread models of “platform offerings” - leasing, sharing and rent - (Manzini & Vezzoli, 2011), *Tem Açúcar?* acts as a mediator of peer-to-peer interactions, enabling communication for individual service filaments to occur. Therefore, the owner is not a supplier of the objects of sharing, as in the case of collective laundries or car sharing systems. This type of service contributes to the minimization of resources through the collective and shared use of objects previously considered as personal. It suggests a paradigm shift in people’s routines, reinforcing the concept of community, reducing the need to own a particular object to enjoy it. This form of dematerialization of consumption based on the borrowing/lending habit and focused on experiences allows interpersonal relationships improvement and a better quality of life.

The study of trust-building in relational services needs further research in different aspects because most of them are very unique. Each relational service carries particularities related to location, target group and behaviour that must be analysed and compared in order to achieve possible replication patterns.

Sharing services that use enabling platforms to mediate processes, such as *Tem Açúcar?*, shows that further study is needed to concatenate the interaction between the three elements that make up the system: users (neighbours), platform (the app) and local network. Studies on usability and user experience can help ensure that new users have a greater degree of trust

in the service from the beginning, as well as better requests management and the development of new service offerings.

A major limitation of this paper is that the locations used in the empirical research have a reduced number of users connected to the app, so it was inevitable to cover a broader area to obtain more desirable results. It indicates the importance of constantly engaging users to keep introducing neighbours, friends and family to the system, so it ensures that virtual neighbourhoods keep being created and the service purpose is achieved.

Despite these limitations, the study succeeded in terms of identifying aspects and propositions that can be tested in broader contexts. Research is needed to examine how those services keep engaging their users to maintain a trusting environment.

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# Understanding generalisability from network-conscious service design projects

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## Abstract

The influence of technology on value co-creation practices of service actors has been studied from a service encounter perspective, during or after technology introduction. We contribute to this existing research by introducing a *multi-actor* perspective to study such changes *prior* to technology deployment. We provide two illustrative cases that show how this can be done. In addition, we study the generalisability of findings from such research projects, through an exploratory qualitative comparison of the projects. We make a second contribution by providing five contextual aspects for other researchers to use when assessing 1) generalisability of our findings and 2) to what contexts their research results can be transferred. Finally, we make a third contribution by positing that literature on roles and role change supports service researchers and designers to make sense of the ways in which service actors perceive that technology deployment will influence value co-creation in service systems.

**KEYWORDS:** service visualisations, value co-creation, exploratory qualitative comparison, generalisation from qualitative research, Role Theory

## Introduction

Technological advancements create new possibilities for value co-creation (Ostrom et al., 2015; Bantau & Rayburn, 2016). The effect of such deployment of technology on value co-creation *during* or *after* technology deployment has been studied extensively. This existing knowledge can be extended by developing ways to understand potential changes *before* the technology is deployed. Understanding which changes are anticipated helps to pre-emptively work on facilitating expected positive changes and counteracting negative ones. Furthermore, research in service marketing and service design is increasingly shifting its focus away from a (dyadic) service encounter perspective to a network perspective. Still, little is known about how value is co-created in such networks (Figueiredo & Scaraboto, 2016). Therefore, we advocate for *network-conscious* service design that does not evaluate service

interactions only with respect to oneself, but makes users reflect on consequences for other actors in the network (Čaić et al., 2018). Such an approach shifts the service foci from an individual actor toward networks of actors involved in value co-creation and gives a finer-grained understanding of consequences for an individual versus a collective.

In this paper, we present two interventions in projects in which we have been involved, that aim to study (1) potential effects of technology introduction on value co-creation (2) from a multi-actor perspective (3) prior to the deployment of technology. The interventions used a designerly approach and included different visualisations of the future service. More specifically, they built on the participatory approaches in service design (Holmlid, 2012), mapping techniques (e.g. Morelli & Tollestrup, 2007), and different types of visualisations that are commonly used in service design (Diana et al., 2009), and aimed to make actors' implicit conceptualisations of network contexts more explicit. To the best of our knowledge, there is no empirical data from similar research projects. Our first contribution is thus the introduction of a *multi-actor* perspective when studying potential changes in value co-creation and the suggestion to study such changes *prior to* technology introduction. We provide two illustrative research projects to exemplify how this can be done.

The limited empirical work leads to the limited knowledge about how the results from network-conscious service design projects can be generalised and to what extent they can be used in similar research projects. We present an exploratory qualitative comparison of these two research projects that show several similarities in context. By context we not only refer to physical surroundings or service setting of the project, but also the way in which informants understand the service network(s) they are part of as well as the perspective and (designerly) approach taken during the intervention. Based on the comparison we make our second contribution, by providing five contextual factors that function as guidelines to assess similarity between research projects. These guidelines will help researchers determine when transferability of research knowledge to, from or between projects like ours is possible on the grounds of context similarity. In addition, we noticed that we could use the concept of roles and role change from Role Theory to make sense of how informants talked about changes in value co-creation that they foresaw. We could do this for both projects, in spite of contextual differences between them. Our third contribution is therefore that we suggest that vocabulary for roles and role change from Role Theory literature helps researchers and designers to articulate and make sense of what service actors anticipate as effects of technology deployment on value co-creation.

## Background

### Networks of value co-creation

Services are no longer analysed as a result of dyadic service provider–customer interactions, but rather as co-created through interactions among networks of interdependent actors (e.g. Gummesson & Mele, 2010; Briscoe et al., 2012; Jaakkola & Alexander, 2014). In the domain of service innovation, the network perspective is receiving more and more attention (Lusch & Nambisan, 2015). Such networks of actors comprise service systems, which are complex configurations of people, information, technologies and institutions (Maglio et al., 2009). Moving away from dyads towards A2A (actor-to-actor; Vargo & Lusch, 2011) webs brings us closer to a holistic understanding of how service systems function. Yet, it also adds another layer of complexity by including multiple human actors with their idiosyncratic understandings of value (Wetter-Edman et al., 2014) and different conceptualisations of their value-creating networks and network roles (Gummesson & Mele, 2010).

## Value co-creation with technology

When it comes to technology as part of a service, existing research discusses the transformative role of information technologies (e.g. Green et al., 2016; van Doorn et al., 2017; Huang & Rust, 2018). Different terms are used for the relation between technology and service, such as: technology-based services (Sandström et al., 2009), technology-enabled value co-creation (Patrício et al., 2011; Breidbach et al., 2013), technology-based (remote) service encounters (Sur, 2008), Service Encounter 2.0 (Larivière et al., 2017). These works take a service encounter perspective to study the effects of technology on value co-creation and to evaluate these effects during and/or after the deployment. Researchers are trying to get a better understanding of how new value propositions (Skålén et al., 2015) will impact the interplay between actors and resources in future technology-augmented networks, yet actor valorisations of future service scenarios remain scarce. Researchers need to look for new ways to engage with diverse set of service actors and make them envision, discuss and evaluate possibilities for value co-creation and co-destruction (Echeverri & Skålén, 2011).

## Visualisations of future services

Service design has developed various types of representations that can be used to envision future services. Static representations such as visualisations (Diana et al., 2009) as well as immersive representations—what Blomkvist (2016) calls ongoing prototypes—are ways to envision future services. Making and using such representations is valuable because it is a way of learning about these possible futures (Blomkvist, 2014). A drawback of these methods is that they focus (only) on suggesting different alternative solutions, rather than structurally describing consequences for value co-creation, and providing possibilities to evaluate these. Evaluation techniques in service are scattered, and often focus on service quality, service experience or operations, and rarely on the evaluation of a suggested new service (Foglieni & Holmlid, 2017). Evaluations of touchpoints, service encounters, and customer journeys are common in service design. Some of the methods used are situated in approaches and methodological frameworks, such as cooperative design (Schuler & Namioka, 1993), that may allow to go beyond the individual perspective when evaluating effects of technology deployment in service systems (e.g. Greenbaum & Kyng, 1991). Hence, it seems possible to perform evaluations of future services from the perspective of all actors in a service network.

## Generalisation in qualitative research

Results of qualitative research should both provide deep understanding of a phenomenon and inputs for practical applications for this understanding (e.g. Thornberg & Fejes, 2015). To be valuable for researchers and practitioners, findings should thus not only be valuable for the context under study, but also in similar situations. Such generalisations of knowledge in qualitative research differ from generalisations in quantitative research and there are different perspectives from which to consider this topic (e.g. Merriam, 1998; Larsson, 2009; Maxwell & Chemiel, 2014). Rather than seeing results as truths that can be generalised to a certain extent, outcomes of qualitative research are seen as perspectives, or propositions that are tentative and have sensitivity for specific situations (Thornberg & Fejes, 2015). The term transferability is often used instead of generalisability (ibid., 2015), where the possibility for transferability of research knowledge from one project to another is related to similarity between cases (Lincoln & Guba, 1999, p 404). This form of generalisation is also referred to as *case-to-case transfer* or *user generalisation* (Merriam, 1998, p. 211). User generalisation means that the person who intends to use research knowledge from other projects to explain dynamics in their own project assesses whether importing the research knowledge in question is possible. They make such assessments by comparing the sending and receiving context (Larsson, 2009). Context similarity is an indicator for transferability, it is not a guarantee (Larsson, 2009). Another perspective is transferability through pattern recognition, which “can happen even if the context-to-be understood is different from the original study”

(Larsson, 2009, p.35). It happens when “someone who is familiar with a piece of research realizes that the original interpretation ‘fits’ cases they have met” (Larsson, 2009, p.34).

## Roles and Role Theory in service research

The concept of roles through the lens of the Role Theory (see e.g. Biddle, 1986; Guirguis & Chewing, 2005) has been used in service research before. Especially the dramaturgical perspective (e.g. Goffman, 1959) on roles is popular. Baker and Faulkner (1991) have suggested a network perspective on roles, where roles are not tied to one specific position in a social system. Building on this view, Akaka and Chandler (2011) proposed that roles instead could be seen as resources that are used for value co-creation, thereby using a more structural view on roles. Several tools and methods are available in service design to document *existing* roles (Sangiorgi, 2009). Theatre-based techniques such as role play have been applied to explore *envisioned* roles for future situations of service (e.g. Arvola et al., 2012). Some of these works build on earlier research in this area from participatory design (e.g. Halse et al., 2010). For more on the use of roles and role theory in design and service research, see Overkamp and Holmlid (2017).

## Descriptions of the research projects

We first introduce two research projects that are used in the exploratory comparative analysis. These projects were part of the research education of the first two authors. The authors’ realisation of the relatedness of these particular two projects developed through interactions at meetings in the Service Design for Innovation Network and conferences.

### Research Project 1 – Software for troubleshooting trucks and buses

The first project is a service development project that aims to improve an existing Business-to-Business (B2B) service aimed at troubleshooting and repairing trucks. The time that a truck is broken (downtime) is costly, because trucks are needed to make the deliveries that provide revenue for a transportation company. Speeding up the process of troubleshooting and repair, can limit downtime. The truck manufacturer that we collaborated with is working on research and development of software technology that can provide step-by-step guidance during troubleshooting. It will be possible to use this software both in the workshop and remotely, before the truck is in the workshop. The remote troubleshooting would form a new touchpoint in the service process.

We performed 26 semi-structured interviews (Creswell, 2014) with actors in the current service system for troubleshooting and repair. The aim was to evaluate what consequences the service actors saw for their practices if the remote and workshop guided troubleshooting would be implemented. One of the authors conducted the interviews in spring 2016, with customers, workshop employees, and roadside assistance operators. We did not have the opportunity to interview drivers.

The interviews consisted of two parts. The first part focused on the current practices, what would happen today in case some truck experienced technical problems and who would do what. We then introduced the service development project using a written description and a visualisation of the service process as imagined by the truck manufacturer (see Figure 1). The second half of the interview focused on what the interviewees saw as consequences for (1) their own practice and (2) the work of other actors in the service system.

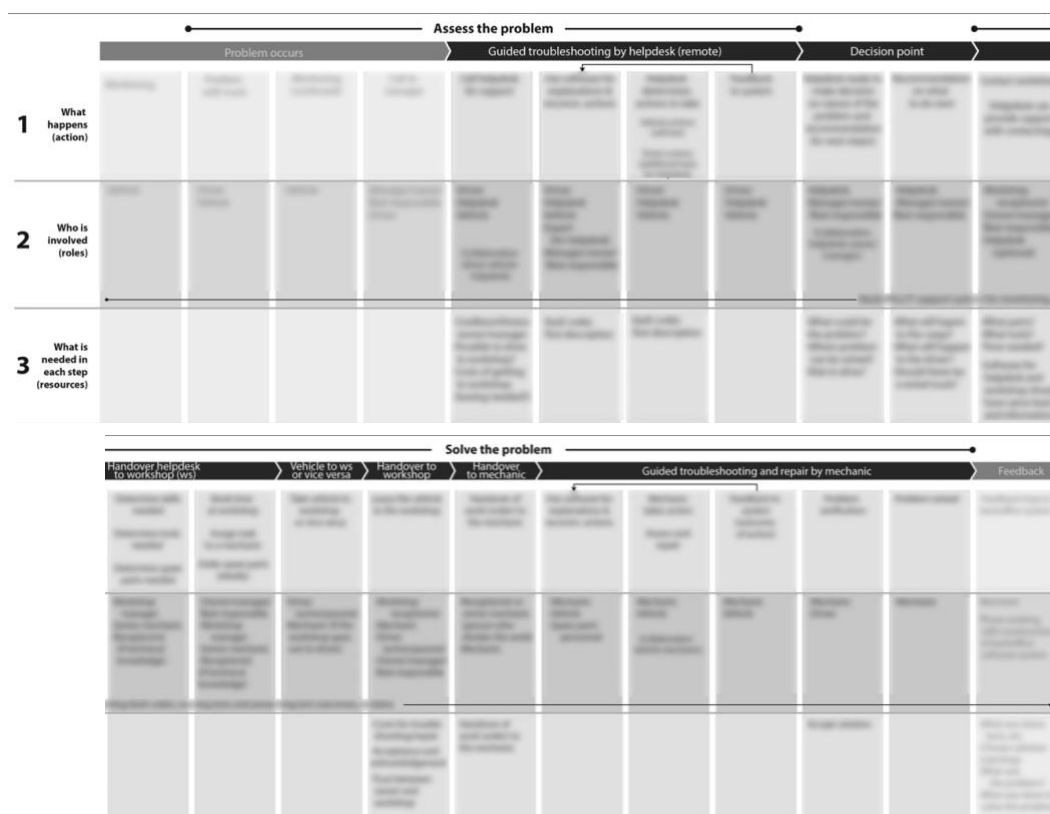


Figure 1: Visualisation of the future service process used during interviews with service actors. It shows who does what in which part of the process.

## Research Project 2 – Socially assistive robot

The second project investigates a future Business-to-Consumer (B2C) service within the elderly care setting, which currently faces many challenges, including rising number of elderly persons and shortages of professional care staff (European Commission, 2015). In particular, the case focuses on socially assistive robots<sup>1</sup> which hold strong promise to enhance the well-being of the elderly and to alleviate the burden of caregiving networks. In this project we were interested in understanding future service scenarios for socially assistive robots and their effect on value co-creation in care-based networks.

With the aim to investigate how socially assistive robots disrupt already established care-based networks and how informants envision future technology-enhanced service scenarios, we conducted in-depth generative interviews (Sanders, 2000) augmented with a card activity (i.e., “Contextual Value Network Mapping”; Čaić et al., 2018). Over the course of 10 months, one of the authors interviewed nine elderly persons, seven formal caregivers, and nine informal caregivers.

The informants were engaged in a generative “Context Disruption” interviewing protocol consisting out of four steps: (1) Contextual value network mapping – *Current service*; (2) Active immersion; (3) Introducing “disruption” (i.e., socially assistive robot); (4) Contextual value network mapping – *Future scenario*. The data material thus consisted of the informants’ network visualisations and transcriptions of these interviews. The semi-structured nature of the interview protocol helped capture rich descriptions of informants’ caregiving experiences within existing network contexts and expectations of changing caregiving roles for diverse

<sup>1</sup> Socially assistive robots are autonomous devices that understand social cues through facial and voice recognition technology and can assist their owners with health monitoring and household activities, to prolong their independent living (KPMG, 2016; Robinson et al., 2014).

network actors. Simultaneously, the material facilitation tool, that was part of the generative technique that we employed, elicited their tacit knowledge (Polanyi, 1967), through network visualisations (see Figure 2).



Figure 2: Visualisations of care-based networks

## Exploratory qualitative comparison

The outlined research projects formed the starting point for an exploratory qualitative comparison of the projects. Among the reasons for starting the comparison were identified similarities in both projects in terms of what we were trying to understand and how we approached this. The aim of the comparison was to provide researchers with guidelines helpful for assessing similarities and differences between research projects in order to determine the extent to which research knowledge can be transferred between projects. This iterative approach combined individual reflections with group discussions and resulted in the development of fitting criteria for making comparisons in order to determine similarity between the projects (see Figure 3). The remainder of this section details the approach during each step, the reasoning behind them as well as their outcomes.

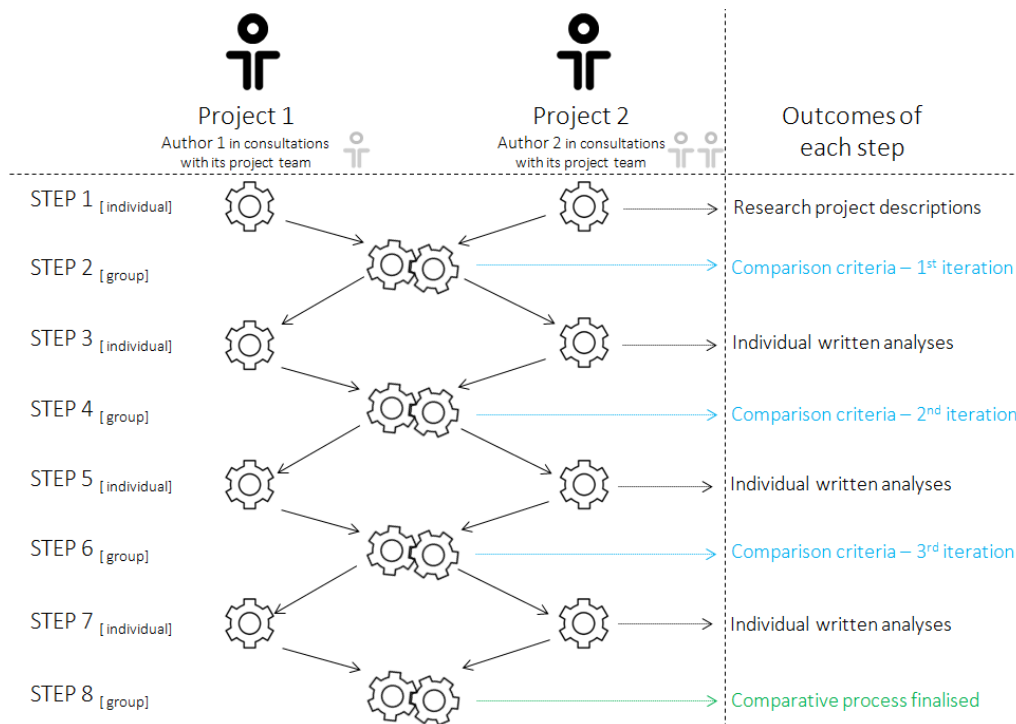


Figure 3 - Overview of the process of the exploratory qualitative comparison.

### STEP 1: Getting familiarised with the research projects

The principal researchers from each of the outlined research projects prepared a detailed written description of their respective projects. The aim of this step was to reach a shared understanding of the specificities of the service setting, employed methods, and nature of the findings of each of the two projects among the collaborators (i.e., the author team). The written project descriptions were shared among the collaborators to serve as a basis for a group discussion.

### STEP 2: Group discussion

Since the collaborators were geographically dispersed, we organised a Skype session to discuss both projects to improve the understanding based on the written project descriptions. This way, we had the opportunity to clarify elements which remained unclear and reach an even higher level of mutual understanding. During the conversation, several characteristics were discussed that could serve as starting point for comparing the projects, ending with a decision regarding which criteria to use for the individual comparison. The outcome of this step was the first iteration comparison criteria comprising: (1) *General aspects - such as aim and framing of the project*, (2) *Method-related aspects*, and (3) *Results-related aspects*.

### STEP 3: Individual initial comparisons

The first two authors individually reflected upon similarities and differences between the two projects focusing on the comparison criteria defined in step 2. The aim of this step was to test whether the first iteration criteria are useful for understanding similarities and differences between the projects. Individual comparisons were then shared with all the collaborators to further reflect on them. Table 1 combines and summarises the individual comparative analyses and reflections shared by all the collaborators.

Table 1 – Project comparison based on the first iteration criteria

Comparison criteria		Project 1	Project 2
1. General aspects - such as aim and framing of the project	Service setting	Business-to-Business service (truck/bus repair)	Business-to-Customer service (elderly care)
	Technology	Guided troubleshooting	Socially assistive robots
	Overall research interest	Understanding how knowledge for service implementation can be developed throughout entire service development	Understanding of future service scenarios with robots and how this leads to changes in value co-creating networks
	Aim	Investigate how informants (1) understand current practices and processes for troubleshooting and repair of trucks; (2) envision potential changes to practices and processes due to the technology deployment	Investigate how informants (1) perceive robots disrupting already established care-based networks; (2) envision future technology-enhanced service scenarios
2. Method-related aspects	Interview structure	(1) Discussed current work situation and processes for troubleshooting; (2) Introduced the project and the software, through text and visual; (3) Discussed future situation with software, and influence on work of informant and other actors in service system	(1) Contextual value network mapping – <i>Current service</i> ; (2) Active immersion; (3) Introducing “disruption” (i.e., socially assistive robot); (4) Contextual value network mapping – <i>Future scenario</i>
	Informants	Workshop managers, receptionists, mechanics, transport planners, roadside assistance	Elderly people, formal, and informal caregivers
	Involvement of informants	Articulated existing work processes Evaluated future service process as envisioned by technology developers	Articulated their existing network relations using tangible tools (actor cards) Articulated understanding of changes due to technology deployment (again mapped by informants using actor cards)
3. Results-	Data for analysis	Interview transcripts	Visualisations service networks; Interview transcripts



related aspects	<b>Intended use of the outcomes</b>	Input for continued design and development of the software and decisions regarding involvement of different actors in the process	Determine deployment introduction strategy and how to prioritise development of different robot functions
	<b>Effects of technology on future roles</b>	Expected extension of current role(s) to include remote troubleshooting Expectations of changes in interaction of mechanic with troubleshooting software	Expectations about changing roles of network actors Expectations about robot roles

#### STEP 4: Joint comparative session

In another Skype session, collaborators explained and discussed the individual comparisons on the three aspects defined in step 2. The similarities and differences can be summed up as follows:

1. **General aspects** included the analysis of the service setting, the nature of the technology planned to be introduced, the overall research interest and the aim of the study. While the service settings and planned technology deployment were different, both research projects were interested in i) how potential users perceived their current value co-creation practices and ii) how they envisioned their future technology-enhanced service scenarios.
2. **Method-related aspects** included the dissection of the research approach comprising the interview structure (including the nature and setup of the intervention), sample characteristics, and the way in which informants were involved in the study. The main similarity was in the way how interview protocol was set up: i) informants discussed their current contexts, ii) informants acquainted themselves with the technology, and iii) informants evaluated their future service scenarios (envisioning effects of the technology).
3. **Results-related aspects** included the analysis of the type of feedback that the informants gave (i.e. effects of technology on their roles and suggestions for improvement) and the role that the informants attributed to the technology. The similarities were mostly detected in the network-conscious discussions of current and future service roles, while some differences were detected in the way informants spoke about the roles (e.g. work-related vs. roles in daily life).

The group discussion resulted in the second iteration of comparison criteria: (1) *Characteristics of the existing service roles*, (2) *The nature of the (research) intervention*, and (3) *The outcomes of the studies*.

#### STEP 5: Individual comparisons

The first two authors prepared their detailed analysis of similarities and differences between two projects based on the comparison criteria defined in step 4. The aim was again to test whether the aspects that were defined were helpful for understanding similarities and differences of the projects and whether the resulting comparisons allowed us to talk about the transferability of knowledge. Table 2 includes a digested version of the two individual comparative analyses enriched by the reflections of the entire author team.

Table 2 – Project comparison based on the second iteration criteria

Comparison criteria		Project 1	Project 2
1. Characteristics of the existing service roles	Informants' understanding of their current roles	Formalised roles (assigned by job function)	Mostly phenomenologically defined (in case of formal caregivers, roles are formalised)
	Dyadic or network defined roles	Network interactions (roles work together as a team in achieving job-related goals)	One-to-one interactions (e.g. a role of a daughter is defined with respect to the achievement of elderly person's personal goals) Network interactions (some roles are defined on a network level – e.g. network coordinator)
	Types of roles	Job-specific roles (related to institutionalised positions in the service systems)	Context-specific or (segment of) life roles (roles within the defined elderly-care network)
2. The nature of the (research) intervention	Visualisations made by	Researcher in collaboration with technology developers	Informants (during the interview)
	Type of visualisations	Diachronic (process)	Synchronic (network map)
	Use of visualisations	To trigger articulation of informants' knowledge	To trigger articulation of informants' knowledge As outcome of the interview
	Portrayal of technology	Software introduced as tool that provides information and guidance during service process	Robot is introduced as a non-human actor
	Agency of technology developers in determining the role of technology	Software technology developers presumed and presented the role of the software through its functionalities	Robotic technology developers presumed and imposed robot's role through offered functionalities
3. The outcomes of the study	Informants' understanding of their future roles	Anticipations of changes in own and other actors' roles	Anticipations of future roles in a network-conscious way (impact on their own and other actors' roles)
	Role-related behaviours	Role acceptance Role anxiety Role mitigation	Role acceptance Role anxiety Role resistance
	Evaluations of the technology	Informants perceived technology as a system of information and cognitive resources and had different opinions	Informants perceived the technology both as a system of cognitive and affective resources, but also as an actor with its

about how well they could integrate these resources for value co- creation	own role within the network
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#### STEP 6: Joint comparative session

In another Skype session, collaborators reflected on the second iteration comparison criteria:

1. **Characteristics of the existing service roles** included the analysis of informants' understanding of their current service-related roles (institutionalised vs. phenomenologically defined) and the breadth and type of their roles (working life/job-specific only or more general (segment of) life roles). While informants in Project 1 understood and described their current roles as institutionalised (determined and influenced by their job position and work-related tasks), informants in Project 2 perceived their roles more loosely, phenomenologically defined (determined by the needs of their care-related context).
2. **The nature of the (research) intervention** analysed the use of visualisations. In particular, how and by whom the visualisations were made, type of visualisations used (diachronic vs. synchronic) and the advantages and disadvantages of each depending on their purpose. The key similarity was that both research approaches leveraged visualisations as a generative tool aimed at eliciting informants' knowledge. However, they differed regarding the type of visualisation (*flows* vs. *maps*) and the involvement of informants in the creation of the visualisations.
3. **The outcomes of the study** covered what kind of understanding informants developed about the effects of the technology on their and other actors' future roles, how informants talked about role acceptance (willingness to accept/advocate future roles) vs. role-averse behaviours (e.g. having role anxiety and expressing hopes to mitigate future roles). Many similarities were detected based on these comparison criteria, with informants expressing their expectations for and (often) discomfort with their future value co-creation roles.

Based on the group discussion, the comparison criteria were further developed into the third iteration criteria: (1) *Studying effect of technology on value co-creation between actors from a multi-actor perspective prior to technology deployment*, (2) *Use of service visualisations as a way to facilitate service actors in articulating their understanding of changes in value co-creation*, and (3) *Use of Role Theory to articulate how informants talk about changes in value co-creation*.

#### STEP 7: Individual comparisons

Once again, the first two authors made their individual dissections of the research projects guided by the comparison criteria defined in step 6. The aim of this step was to see whether we had found a set of criteria by which we could separate similarities and differences in the analysed projects. Finding these criteria would allow us to demarcate and discuss what parts of the results from the one project would have surfaced in the other project as well. In other words: what parts of the research knowledge developed in the one project would be transferable to the other. And what research knowledge cannot be transferred because the context in which it was developed it (too) different from the other project (i.e. the receiving context). The outcomes of this step were individual written comparisons which were then shared with the remainder of the author team. Table 3 shows the combined analyses of the first two authors augmented by the feedback from all the collaborators.

Table 3 – Project comparison based on the third iteration criteria

Comparison criteria	Project 1	Project 2
1. Studying Aim effect of technology on value co- creation between actors	Investigate how informants understand current value co-creation practices and how they envision changes to these practices due to the	Investigate how informants conceptualise their current roles and value co-creation in a networked context and how they anticipate their

from a multi-actor perspective prior to technology deployment		introduction of the technology	future service practices to change once the technology is introduced
	Nature of technology impact	Technology deployment expected to affect value co-creation practices both for actors who directly interact with it and those who interact with it indirectly	Informants discuss both the value co-creation potential of future robotic technology with respect to self and other network actors
	Stage in new service development	Evaluate future service process that was envisioned by technology developers prior to its introduction	The expectations of future service scenarios (processes and practices) were evaluated prior to technology deployment
2. Use of service visualisations as a way to facilitate service actors in articulating their understanding of changes in value co-creation	Intent of using visualisations	Facilitate informants in (1) developing their understanding of the envisioned future service process and (2) their evaluation of potential effects of technology deployment on existing value co-creation processes	Facilitate informants in (1) understanding their current value co-creation practices in their care-providing networks (2) sharing their anticipations of future service scenarios where technology impacts their current network contexts
3. Use of Role Theory to articulate how informants talk about changes in value co-creation	Coping with future roles	Different stances towards future role, depending on (mis)match between resources that informants have today and resources they are expected to integrate after technology is deployed	Combination of role acceptance and role anxiety/resistance depending on the evaluations of value co-creation and co-destruction potential of planned technology introduction
	Resources needed to be shaped	Development of additional skills for existing service actors in order to enact future role Development of technology as resource to enable integration with actors' existing resources	Additional skills needed to enact future roles Technology is expected to be personalised to fit the needs of diverse network actors

#### STEP 8: Joint comparative session

The group discussion yielded the following conclusions:

1. **Studying effect of technology on value co-creation between actors from a multi-actor perspective prior to technology deployment:** Our analysis suggests that despite nuances in sub-criteria (e.g. the degree to which technology developers had an influence on the portrayal of technology), both projects evaluated i) the effect of technology, ii) on networked value co-creation practices, iii) from a multi-actor perspective, iv) prior to technology deployment.
2. **Use of service visualisations as a way to facilitate service actors in articulating their understanding of changes in value co-creation:** The use of service visualisations related to the way in which the intervention was set up in both

projects. Again, while the projects showed two variations of use of visualisations (synchronic/diachronic; made by informants/made by research and technology developers) they were consistently used with an aim to i) understand current service scenarios and ii) anticipate future service scenarios (through changes in value co-creation)

3. **Use of Role Theory to articulate how informants talk about changes in value co-creation:** The use of Role Theory concerned how the vocabulary of this theory can be used to articulate how informants talk about how they expect technology deployment to influence the roles in the service and how value co-creation changes as a consequence of that. For instance, that they felt that they do not have the resources needed (e.g. knowledge) in order to perform their expected future role, which caused anxiety.

## Analysis and discussion

We started this paper with the observation that research on effects of technology on value co-creation has so far looked at these effects during or after implementation and from the perspective of service encounters. To the best of our knowledge, effects of technology on value co-creation have not been studied from a multi-actor perspective, prior to deployment of the technology in question. The first contribution of this paper is thus the introduction of this alternative approach and the presentation of two illustrative research projects that show how this approach can be applied.

Furthermore, we investigated the possibilities for transferability of the findings of two research projects through an explorative qualitative comparison. A summary of the evolution of these comparisons during the three iterations is presented in Figure 4.

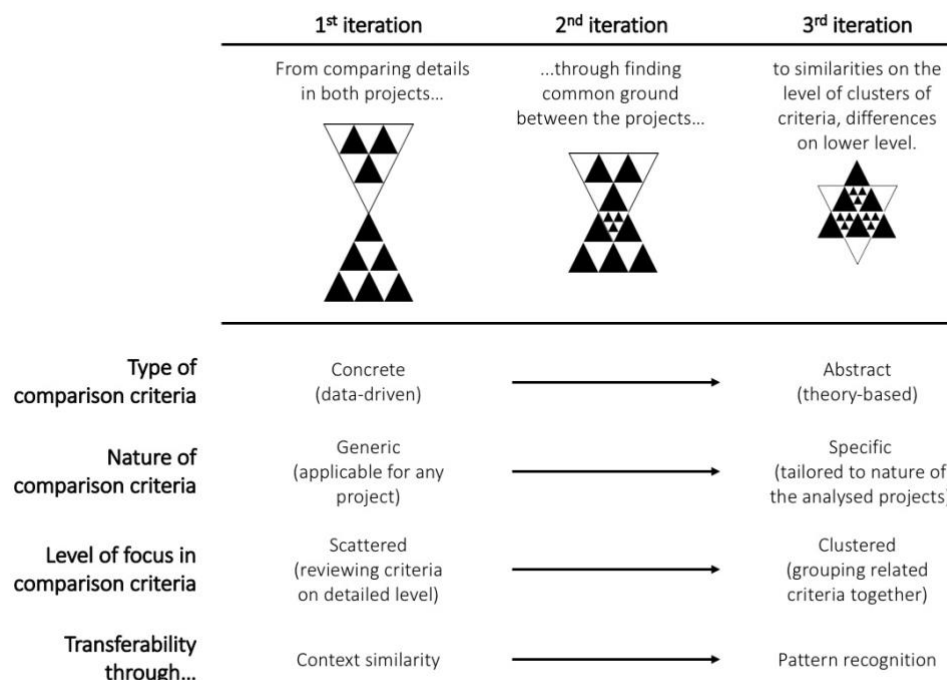


Figure 4 – Evolution of the project comparisons over the three iterations

The outcome of this comparison showed that the projects are comparable on the high-level criteria presented in Table 3. However, on a more detailed level, the contexts of the projects are different. Firstly, the project around socially assistive robots is situated in a B2C

healthcare setting, while the software support is developed for B2B services. Secondly, the type of technology is different in both cases. Thirdly, the informants in the projects had a different understanding of their own role and the role of other actors. Fourthly, the aim that either project had with the intervention differed: *articulation* of existing and future network relations in the healthcare project, *evaluation* of a future service process that was envisioned by technology developers in the other project. Finally, Project 1 used what Diana et al. (2009) called *flow*-type visualisations, while *maps* (ibid. 2009) were used in Project 2. We therefore posit that transferability between these projects is not possible from the perspective of context similarity. However, we believe that the five contextual factors discussed above are of value for other researchers, working in projects similar to ours, when assessing the generalisability of their research findings.

Comparing these cases made us realise that it *is* still possible to discuss transferability, but from the perspective of pattern recognition. Vocabulary for roles and role change, from Role Theory, helped to articulate and make sense of *how* informants talked about changes in value co-creation. This was identified in Project 1 (see also Overkamp & Holmlid, 2017) and could be used for Project 2 as well. Based on this finding we suggest that vocabulary about roles and role change from Role Theory literature helps to articulate and make sense of what service actors anticipate as effects of technology deployment on value co-creation.

There is not much previous work regarding taking a multi-actor perspective that makes informants conscious about their service *network* to understand potential consequences of technology deployment on value co-creation processes. Hence, it was difficult to formulate aspects for a comparison a priori. Therefore, we decided to have an explorative and qualitative process. For us, the process of performing the exploratory qualitative comparison of our two projects helped us to achieve a better understanding of the similarities and differences in the projects, but should be considered unique for our situation and the nature of the projects we are involved in. It cannot be seen as a general recipe for arriving at an understanding of transferability and the grounds upon which research knowledge can be generalised from one project to another. Being aware of this, we have described the process of our exploratory qualitative comparison and the context criteria that were discussed during this process as clearly and detailed as possible. This description provides guidelines for researchers to compare projects similar to ours, while at the same time allowing readers to take other perspectives and make different interpretations than we did.

## Conclusion

We observed a growing interest for a network perspective in service research, combined with a need for more knowledge regarding how value is co-created in such networks. When it comes to the influence of technology on co-creation this has mostly been studied from service encounter perspective, during and after deployment. We made a first contribution by introducing a *multi-actor* perspective to study effects of the technology deployment on future value co-creation, *prior* to the technology deployment. We provided a detailed description of two illustrative research projects that show how this can be done. In these projects we used service visualisations to facilitate service actors in articulating the changes in value co-creation they foresaw.

In addition, we performed an explorative qualitative comparison of the two projects, where we at first focussed on whether transferability was possible through context similarity. We concluded that research knowledge cannot be transferred from the one project to the other on those grounds. At the same time, we found that a pattern that was identified in one project was recognised in the other project: in both cases Role Theory vocabulary proved useful to articulate how service actors understood potential changes that would follow from the deployment of technology.

Through the explorative qualitative comparison, we made a second contribution by suggesting five contextual aspects that researchers can use as guidelines to explore transferability of research knowledge: (1) whether visualisations of future services are used in order to facilitate service actors in articulating their understanding of value co-creation in those situations, (2) whether a multi-actor perspective is adopted on such value co-creation to make informants conscious about their service network, (3) whether the effect of technology on value co-creation is studied prior to its deployment, (4) whether the projects are located within the same service setting, and (5) whether informants in the two projects have the same understanding of how their roles in the service system are defined. Using these five criteria, researchers that study effects of technology on future value co-creation from a multi-actor perspective prior to deployment can determine (1) whether it can be argued that it is likely that their findings would have surfaced in either of our projects and/or (2) in what contexts their findings are likely to be valid too, because of similarity in terms of these five context criteria. We made a third contribution by suggesting that vocabulary for roles and role change from Role Theory literature is useful to make sense of and discuss how service actors talk about their expectations of how introduction of technology will change value co-creation.

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# Maps as participatory platforms: Towards open data and transport service

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## Abstract

This paper develops a new perspective on maps and mapmaking moving interacting with Open Data and transport service. It outlines the implications of a design case study in which maps become democratized and start to function as a participatory platform. This leads to the argument that maps enabled by technology means that the nature of maps has changed and should be considered as a complex value co-creation system with users' experience and knowledge at their centre. Based on the proposition that user experience and the complexity of the value co-creation system are at the core of service design practice, this leads to the conclusion that map development has become a service design practice. This paper contributes to the growing interest in map-based services, the latter leading to redefining the nature of the map and service design's role in relation to the value co-creation system in complex city systems.

**KEYWORDS:** cartography, map, digital platform, transport service, service design

## Introduction

Traditionally mapmaking is an exclusive domain of cartography. Since the rapid growth of digital technologies and smart devices enhanced by ICT, maps and map services faced one of the radical changes in our urban life (Maps and Mapmaking, 2012), thereby we are now experiencing a complete shift in maps/mapping and emerging agenda available in this subject. Maps and mapping have been significantly influenced by digital technology and have come to function as participatory platforms with the capacity to collect, create, store and process data through people's interaction with others, their environment and the cities they live in or visit. These dynamics have significantly changed the way that key stakeholders interact with each other through maps, while further altering the way that design and designers are involved in map development. This shift has transformed the traditional mechanisms of maps and mapping.

A two-stage study is presented in this paper. The first stage identifies the nature of maps in the literature related to cartography, digital platforms, and service systems. At this stage has

developed a proposition, which suggests that the nature of a map goes beyond its physical existence while becoming relevant to services and complex service platforms. The second stage contextualises this proposition through a design case study in relation to these shifting parameters.

The findings reveal that the complexity of maps has dramatically increased driven by the growing usage of advanced technology while user experience has become a central part of map-based service development. The nature of maps as services and service systems has become more evident in this context, particularly when maps are more closely associated with various complex service systems and stakeholders, which suggests that maps become systems of co-creation through the integration of resources. This leads to a further discussion of a designer's role as a facilitator of value co-creation through map services. In this role, service designers consider maps as service and adopt a human-centred approach to facilitating the engagement of key stakeholders in complex systems. Finally, the paper suggests the need for further study to contextualise the involvement of service design in this new area alongside investigating its implications and limitations.

## The nature of maps in the digital era

### Principles of mapmaking

Understanding the nature of maps and mapmaking has been debated for centuries. Maps are defined in various terms and from a range of. For example, in geography, “the set of graphic representations that facilitate a spatial understanding of things, concepts, condition, processes or events in the human world” (Harley & Woodward, 1987. xvi), while the Oxford Online Dictionary (2014) defines maps as “visual diagrams and representations or collections of data showing spatial arrangement or distribution over an area.” Furthermore, we often understand that the world can be objectively mapped using scientific techniques to capture and display spatial information.

As famous allegories from Borges (1946) and Carroll's (1893) maps in their fictions illustrate, a 1:1 scale map is impossible and valueless. A map does not simply mirror the world, not merely an image or drawing, rather it is a process of decision-making (Tufte, 2001). Maps capture something of the world while simultaneously producing the idea of the physical place they represent (Wood & Fels, 2008). Cartographers or designers negotiate information from both physical objects and graphical representations shaped by scientific principles, implying a systemic proposition; symbolically categorised data satisfies according to its accuracy, readability, and interpretability in terms of the best way to deliver geospatial information and communicate with maps users, a process that leads to map readers' action rather than an essentially aesthetic reaction (Robinson, 1952; Pickles, 2004; Wood & Fels, 2008).

Each map is a massive reduction of the reality derived from an extensive set of facts, then uncountable information is abstracted through graphic symbolisation and is accentuated from a number of possible design outcomes (Monmonier, 1996). All maps are created by a selection of truths, suppressing certain information. Central to mapmaking is not simply the representation of the world, instead it produces space so that the user perceives information by interplaying the data underlying the graphic elements of maps and constructing knowledge of space in a systemic way that serves a singular agenda (Turnbull, 1989; Pickles, 2004; Wood & Fels, 2008).

### Digital technology and users as co-creators of maps

The digitalisation of cartographic information processes, production and map design showed how the cartographic efforts could be reduced for the creation of high-quality products and new ways of cartographic distribution that make accessing and participating in geospatial information much easier. These emergent mapping practices have been facilitated by a new array of Web 2.0 platforms (O'Reilly, 2005) such as such read and write media, Google Maps<sup>3</sup>, OpenStreetMap<sup>4</sup>, while social media sites are all around us and a wide range of people consume and simultaneously create maps as never before. The key characteristic of Web 2.0 is that it understands the web as a Read+Write platform with cost-effective scalability, collective intelligence through user participation, dynamic connections, openness and freedom (Haklay et al., 2008). This technological shift has been particularly evident in applied maps/mapping, which has opened the process of mapmaking to everyone by weaving in the perspectives of users as collaborative mapmakers.

Mapping practices or the distribution of spatial knowledge is not only centrally managed by professionals but also by individual users' contributions. Users produce spatial knowledge in the same way that they consume spatial information, for example how they navigate, search and review locations of choice and whether they intentionally and voluntarily contribute spatial knowledge through this space. Thousands of people collectively act as geographically-distributed sensors (see the 'citizen as a sensor' as detailed by Goodchild, 2007); they voluntarily collect, clean and upload geospatial information and contribute data while also connecting to platforms socially, communicating meaningfully and contributing collectively (i.e. explicit user contribution, OpenStreetMap, The Missing Maps Project<sup>5</sup>).

The availability of vast of user's contribution in maps fundamentally altered the way spatial data are generated, utilised and manipulated (Leszczynski, 2012; Leszczynski & Wilson, 2013). Gartner (2009) has termed this movement as 'Web Mapping 2.0,' suggesting that it provides a suitable platform for dynamic and interactive maps that allow everyone to produce and change his or her own individual maps, constituting a democratic approach to mapmaking and mapping. This approach is a central concept of 'Neogeography' or 'Neocartography,' consisting of a set of techniques and tools that fall outside traditional mapmaking and mapping, but which is also concerned with people using and creating their own maps in their own terms (Turner, 2006). The user's spatial information contribution has shifted from professional agencies to amateurs or hackers (e.g. free open-mapping tools, OpenStreetMap), and from governments to individual citizens. Such digital mapping software and a mixture of 'open data' (Powell, 2012) collaborative tools, as well as the geo-tagging embedded in mobile mapping applications, have become the systems that represent the physical evidence of our experiences.

Given this turn in mapmaking, the experience of mapping has become participatory and social. Maps begin to function as participatory platforms and more democratised than ever before. Online cartographic services enable the user to become a source of cartographic information or a knowledge creator, an innovator with a new product or service on an open platform, which is changing the nature and character of the mapping experience. This indicates a series of new relationships alongside changes in the practice of map production and consumption (Wilson & Graham, 2013). The boundaries between producers and consumers have become blurred through users acting as both consumer as well as producers of cartographic products in the so-called 'prosumption/prosumer' process (Ritzer, 2010). Instead of relying on the completed cartographic product users can now create customised maps on demand (Dodge & Kitchin, 2013). The shift from being a map user to mapmaker (Zook & Graham, 2007) is not only about blurring boundaries by letting users control

<sup>1</sup> Jorge Luis Borges (1946) collected fiction "On Exactitude in Science"

<sup>2</sup> Lewis Carroll (1893) "Sylvie and Bruno Concluded"

<sup>3</sup> Google maps is a desktop and mobile mapping service developed by Google. It offers satellite imagery, street maps, 360-degree panoramic views of streets and real-time traffic information with a route-planning function.

<sup>4</sup> OpenStreetMap (OSM) is a collaborative project attempting to create a free editable map of the world. OSM is considered a prominent example of volunteered geographic information.

<sup>5</sup> Missing Maps project was born out of a realisation by the American Red Cross, British Red Cross, Humanitarian OpenStreetMap Team, and Médecins Sans Frontières that maps are pivotal to delivering humanitarian aid. See more <https://www.missingmaps.org/>

geographical information but is also concerned with counter-mapping and counter-knowledge activities (Harris & Hazen, 2006).



Figure 1. Example of multiple layers of information in maps

### Data and the expanded usage of maps as participatory platforms

Geospatial data is now ubiquitous, fluid and has dramatically increased the complexity of the type and amount of data available for mapping. Nowadays most digital information contains geographical references about location. Massive volumes of data are harvested from smartphones, geo-tagging social media contents or posts and sensors embedded in the built environment (fixed and wireless networks, digitally-controlled services and transport infrastructure, sensor and camera networks, management systems and so on) that are invisible to user experience while generated passively and unconsciously as an implicit user contribution in some sense (Graham et al., 2013, p. 332).

Various data from sensors and maps may be combined together with an automated form of data production that provide an even better understanding of geographical data and patterns. For example, head-based wearable devices that track in real-time how a user's ride, movement, and location engage with his/her mind, offering new insights into the ride experience without a user's direct participation, which can be considered as an implicit contribution while explicit volunteering report particular interests that users deliberately want to address and share with a specific purpose in mind (i.e. the OSM community mapping project, Earthquake Maps, Waze). Put together, both implicit and explicit users' contribution in the form of big data has increased the complexity of the types and amounts of data available for mapping.

The visual representation of geospatial data does not simply describe places of space but reveals the system of networks and flows (Batty, 2013). The representation of data on map platforms can be understood as collective knowledge and another facet of urban life, therefore the city planner or policy maker can find this information useful for their decision making, potentially as acting as new ways of knowing (Batty, 2013; Graham & Shelton, 2013). Furthermore, it provides a better understanding of geographical data and patterns, thereby creating value for governments and corporate entities by allowing them bottom-up insights to arrive fundamental truths (Graham & Shelton, 2013; Powell, 2014; Zook & Graham, 2007).



Figure 2. Most Stressful Place,<sup>6</sup> MindRider Map<sup>7</sup>

Given the availability of open data, more data is streamed via map-based interface aggregation and is freely available to the public and businesses, allowing them to access, manipulate and represent information in order to display useful insights into how cities perform such as providing environmental data (e.g., air quality, water levels, temperature and weather), which can be supplemented by objective analysis of urban changes and insights, while identifying facts and establishing connections between various urban stakeholders. These attempts make cities cleaner and healthier places to live by providing quick snapshots for both individual users and local authorities, thereby supporting governing bodies' meaningful decisions in order to improve environmental conditions, which can facilitate better collaboration across exiting applications and services systems accordingly.

In this light, depicting geo-referenced location data can offer new perspectives on the ways in which city services' processes and strategies are designed and implemented (Ciuccarelli, 2014; Graham & Shelton, 2013). Describing the dynamics of a city using data is a crucial step to both understanding people's activities in urban environments and assisting planning and designing. Location data from different systems can be visualised through various cartographic representations and forms of cartographic expression, leading to a system that represents our physical experience of the physical place. This means maps can now transmute the role of maps from the end-product to a situation, wherein the maps display evidence and function as an expression of space (Wood, 1992; Elwood & Leszczynski, 2013).

In this respect, the nature of maps as platforms that facilitate engagement between different urban stakeholders becomes more evident when maps are more closely associated with various complex systems and the available data. This further suggests that maps become a participatory platform through the integration of resources and systems.

<sup>6</sup> Most Stressful Places (MIT Startup, 2015) offers users the opportunity to see patterns in daily lives through wearable devices and to learn about controlling stress better while helping to design environments that are less stressful for everyone.

<sup>7</sup> The MindRider bike helmet and map (MIT, 2015) is a helmet that tracks, in real time, how a user's ride, movement, and their location engages with their mind. The MindRider app maps user's engagement, offering new insights into the riding experience, thereby providing a unique resource for riding communities and street advocacy ([www.mindriderhelmet.com](http://www.mindriderhelmet.com)).



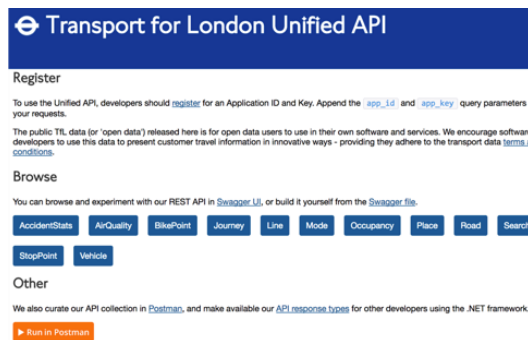


Figure 3. TfL's Open API<sup>8</sup>

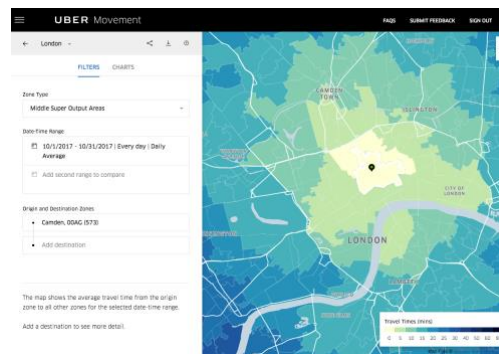


Figure 4. Uber movement<sup>9</sup>

## Use of maps as a vehicle to design a service

Based on the previous section that suggests the nature of maps goes beyond physical existence while participatory platforms facilitate engagement, this segment contextualises the proposition through a design case study relating to a new perspective on maps.

### Design approaches and propositions

The approaches applied in the case study use action research as a model of both design research for analysis and the design of project outcomes (Checkland, 1981). It has employed three different data collection techniques: observation, semi-structured interviews, and content analysis of existing services. The researcher plays the role of designer, actively and reflexively interacting with both the object of research and design outputs. The development of the case study was a response to a challenge run by TfL (Transport for London). The aim of the challenge was to “tackle London’s air quality through a service design approach” and, in this case, uses maps as a vehicle enabling people to be an active agent of change, developing awareness, changing habits and choosing sustainable transport choices, which can have a positive impact on reducing air pollution in London.

The growing population and number of vehicles on the roads and consequent rise in pollution levels in London is responsible for nearly ten thousand deaths each year and is considered a major health crisis, costing our economy around £3.7 billion every year. Overall, 90% of transport-related nitrogen dioxide emissions in central London come from diesel vehicles. In total, 80% of PM10 in London is due to ground-based transport of which taxis are responsible for 25% of PM10 and 10% of NO2, while also spending up to half of their time looking for passengers according to research (Vaughan, 2016).

From a design perspective, the design strategy seeks to reduce pollutant behaviour. Central to the design proposition to this challenge is to provide a service using tailored open data with drivers’ peer-to-peer information using black cab drivers’ knowledge, thereby allowing them to make informed decisions as to where to find fares so they can reduce drifting time in central London. The information provided by designed service consists of three parts: traffic and unplanned roadwork data; event-ending times; and taxi rank moving speed. Instead of giving city-wide information which is largely irrelevant to the drivers, this service provides hyper-local information based on a given driver’s current location.

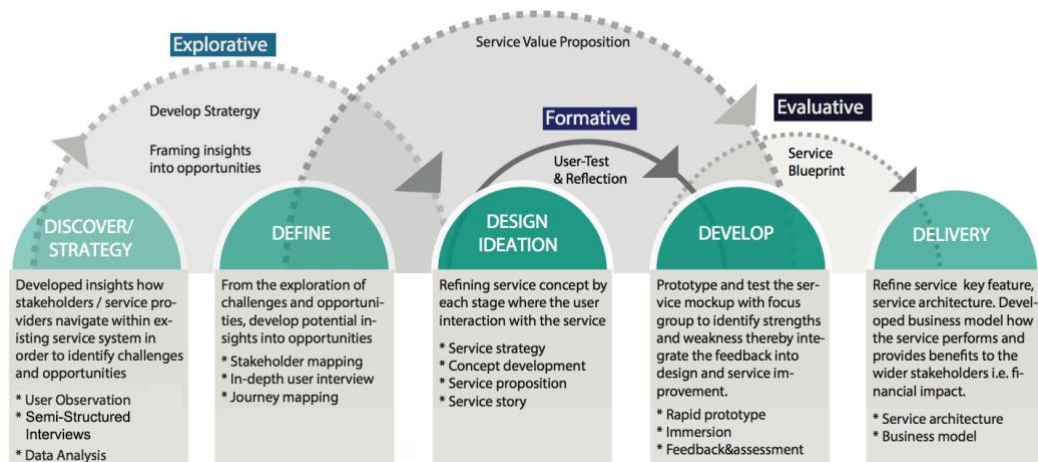
<sup>8</sup> TfL’s API: The unified API presents all the data that is semantically similar for each mode of transport in the same format and consistent structures. The complexity of mapping between multiple identification systems used within TfL has been hidden from consumers of the API.

<sup>9</sup> The map shows the average travel time from the origin zone to all other zones for the selected date-time range.



The second design proposition underlines how the platform differs by putting the decision back into the hands of the black cab drivers, who are the most reliable navigators of complex London roads, by allowing them to input or confirm automated data, thereby enhancing its data accuracy while correcting unpredictable road information. By slightly nudging a driver's drifting behaviour using hyper-local data, the driver can reduce the amount of drifting time without carrying a passenger, thus saving fuel costs while increasing the chance of finding fares. Meanwhile, customers are more likely to be picked up when they need a black cab and the city also benefits by reduced air pollution.

This design process adopted broadly accepted iterative cycles of enquiry common to the design process as illustrated in the diagram below.



Figures 5. Design process

The design team developed a deep understanding of the problem following comprehensive desktop research and information gathered from initial user research. This included analysing air quality data from London Air Quality Network, taxi-hailing market trends, alongside map service research to identify current challenges and problematic areas. During first-hand desk research, the design team identified which area in London is the most polluted and which road consumer causes such pollution, for example, taxi, bus, private car or private hire vehicle such as Uber. Following desk research, the design team conducted road observations to identify the 'as-is' situation, namely which type of cars are occupying the road space in peak time, off-peak time, and how their driving behaviour is performed. In the discovery stage, the design team found out that a large proportion of black cabs are empty in certain problematic areas in London.

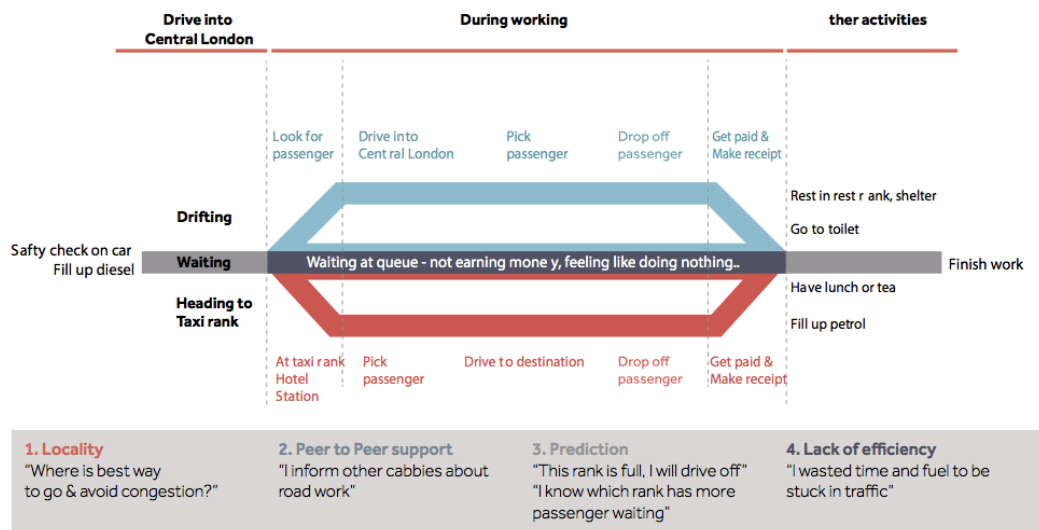


Figure 6. A driver's Journey mapping

## Data collection

During the data collection, qualitative data were collected through three types of interview: focus group, in-depth interview, and electronic interview as semi-structured interview using four categories of participants to develop a deep understanding of the problem in relation to driving and pollutant behaviour. In total, the participants were drawn from 70 black cab drivers, two taxi marshals, 15 passengers, 27 Uber drivers, the Head of Finance at TaxiApp UK, a London Air Quality expert from King's College London, and the Sustainability travel manager Royal Borough of Kensington and Chelsea.

## Ethics

Before the interview, the scope of participation and a consent form was presented to participants. The latter was carefully explained, and a stress environment was assured. The interview was recorded, and participants would withdraw if they wished to do so.

## Data analysis and responses

The qualitative data gathered was analysed and, consequently, coding analysis were adopted into this analytical process. Key problems and insights were defined, which in turn resulted in the generation of a series of opportunities.

First, compared to Uber drivers, black cabs are faced with an unpredictable situation in terms of picking up passengers on the road:

*"These times when we don't get work really, that's when we head for train stations or ranks.... where we will obviously get guaranteed job but then you have to wait and queue up...otherwise you are driving around and its costing you money such fuel" (T1)*

*"...2-3 years ago, on my way, five, ten minutes... now sometimes one hour looking for passenger on the road" (T12)*

Second, the black cab drivers are disconnected from each other as individual business owners and experience a lack of information that are necessary in advance of driving decision:

*"...because we work for ourselves, we only work individually... we are not connected in any way we are all on our own... there is no real group to share useful information" (T57)*

Third, black cab drivers receive identical notifications from a maps-like services regardless of their location, which adds to the noise they experience while they are driving:

*“... I use some maps and apps... if its busy on the street, there’s no point using maps like apps... there’s only a limited amount of work on the apps” (T7)*

*“I use waze, hailo sometimes googlemap but it is not relevant to me. You never imagine road conditions” (T43)*

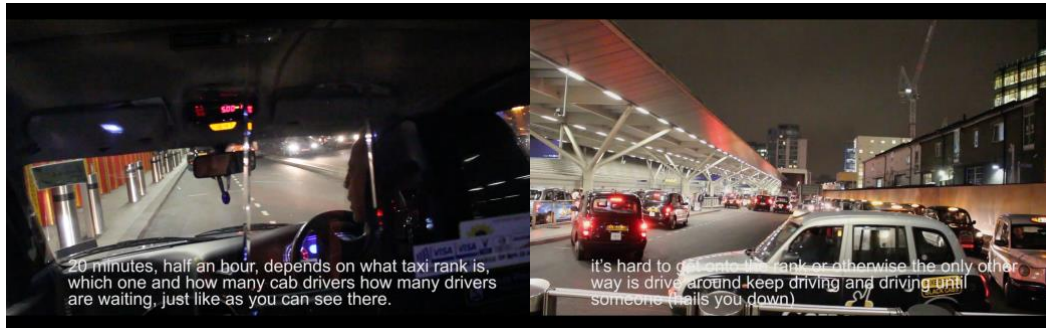


Figure 7. Observation and conversation

### Different views of the required design service

Based on the problem areas defined, the design team moved to the ideation stage by framing the key opportunity areas with service propositions that differentiates the service from what already exists in the market. The opportunities are: PREDICTABLE compared to unpredictable: Make the unpredictable ‘job’ of finding passengers that rely on luck to become more predictable and organised for black cab drivers to know where to go. Second, CONNECTED compared to disconnected: Integrate data generated by black cab drivers that is currently not being utilised. Empowering black taxi drivers by using their own datasets and connecting individual drivers to build a sense of community is necessary. Third, there is a need for TAILORED DELIVERY based in a simple map-like app notification: To make the black cab driver’s job more efficient, deliver tailored information based on their location and time by considering hyper-locality as well as relevance and an individual driver’s preference.

The data is collected from the peer-to-peer group based on black cab drivers’ input regarding the designed map-based service which utilises the knowledge of drivers and real-time data about traffic, road events and taxi rank speed to help them make informed decisions. Through iteration of testing, the service was designed based on the final user interface and as an urban ‘Flo’ strategy. Following this stage, the design team developed a business model detailing how this service could perform and offer benefits to the wider stakeholders. Importantly, in this stage, a potential financial benefit model measured and estimated costs using the services offered to the black taxi drivers. Furthermore, this suggested the benefit of wider urban stakeholders’ having this service live by placing transport data onto one platform for the better understanding of urban flow.

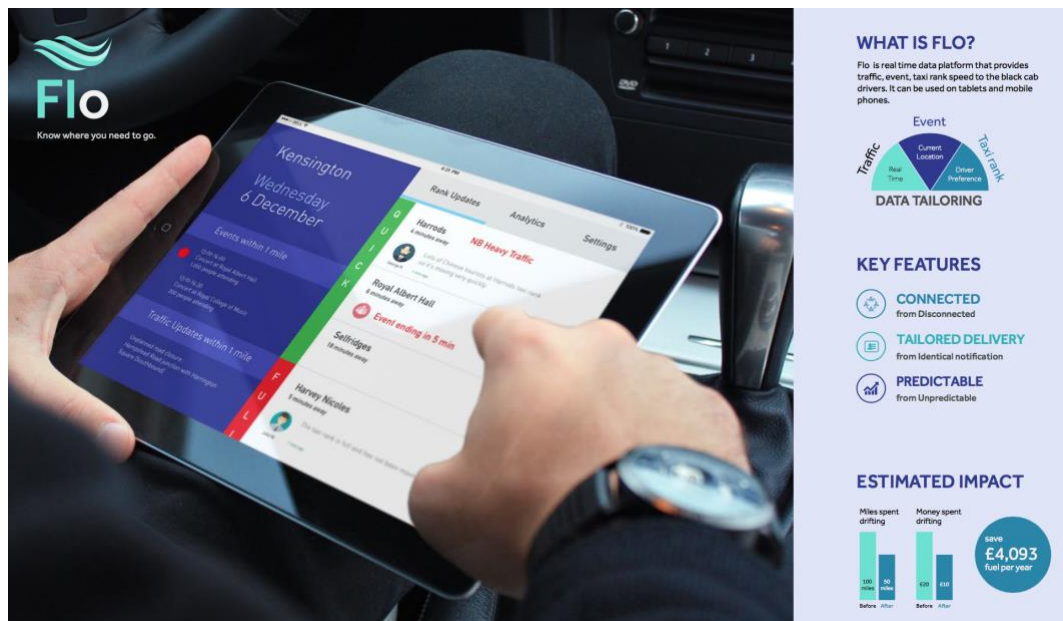


Figure 8. Case design, Smart Black Taxi Service

## Discussion

Service Design as a way of viewing human interaction and reframing problems uses designed solutions, and user-centred service system fulfils users' desired experiences by engaging with wider stakeholders (Brass & Bowden, 2009; Ostrom, 2010; Segelström, 2010). Service design can act as a "collaborative, cross-disciplinary activity involving the orchestration of clues, places, processes, and interactions that together create holistic service experience for customers, client, employee, business partner or citizen" (Ostrom, 2010, p.17). In addition, service design deploys holistic approaches to the design of experiences and systems, which in turn requires the integration of multiple design disciplines in a systemic solution. In this respect, service design's contribution in two crucial aspects in the development of map-based service are relevant here.

### First, user experience becomes central to map development

As identified in previous section, the expansion of freely available information and accessible tools by individual users allows them to increase their level of participation, thus reshaping our experience in urban spaces (Lessig, 2006). The shifting relationship between maps and users since the emergence of IoT technology has played a key role in allowing the user to involve map services in the creation of bottom-up information while the grouping of individuals' collaborative data embedded in maps reveal patterns and insights that do not simply appear in particular locations and at a particular time.

This platform can be used to gather collective feedback from individual users and a potentially useful tool for city planners, authorities and policymakers to garner insights efficiently and effectively. The individual user has played a significant role in transferring their knowledge and skills into this space in both direct and indirect ways. They are not just simply users, rather their behavioural data input generates and changes interaction dynamics in map services. They are co-producers and deliver the value-in-use of service (Lusch et al., 2008; Vargo et al., 2008).

In this perspective, the role of map service providers and users are not distinct, which means the value is always co-created in the interactions between entities – map service providers,

users, governance and other related entities – emerge through the integration of resources. The nature of maps has nowadays become a value co-creation system that places a user's experience and knowledge at the centre of a complex value system. Users have the power to decide what can go into maps and their experience is one of drivers of map service development.

## **Second, mapping as a facilitation of user knowledge and collaborative activities**

Service design is concerned with the complexity of the system where individual and service interaction take place, including in companies, cities and many contexts. Cities are complex systems involving various stakeholders such as citizens, visitors, city planners, policy makers and service providers. The city is also known as the location where people come together to interact with one another, which is affected by complex and reactive information generated by people (Batty, 2013). As we have reviewed, depicting urban data in map platforms can be a way to tease out issues in this complex system, hence the design role in map development have been extensively expanded, moving away from acting as a tool to becoming the catalyst of system.

In a complex system, a service designer can help to unveil opportunities, solve problems and create strategies. They find ways to explain, share insights about complex structures, and to process implementation of the solutions identified (Moritz, 2005). Service designers address and provide evidence of environmental or social issues by engaging with different entities ranging from local authorities, geographical information, technology and people. This illustrates that the design role is not staying in the realm of visual representation but as acts as a connector of various resources from the multiple levels of information that can be implemented, embedded, measured and scale-upped in response to the problems rooted in physical locations.

Viewing mapping as an act of co-creation, service design facilitates collaborative activities because of its unique way of adapting a range of multidisciplinary tools and methods such as stakeholder mapping, user journey mapping, co-creation and blueprints. In comparison with more conventional design methods (e.g. task analysis, sketching and modelling), this set of methods facilitates user participation, interdisciplinary teamwork and creative collaboration. Through the service design discipline, map service developments can facilitate different levels of information and engagement by representing the complexity of city systems that are key issues for better user experience and are therefore a subject for the designer's interpretation.

## **Lastly, the role of designers in map service development**

Design is concerned with people and solving problems. The design discipline works to develop thought and action that can solve problems while developing solutions to our daily problems currently unmet by existing systems (Manzini, 2015). Although the role of design has been raised recently, designers have been critiqued for their weakness in terms of their systemic approaches, including that their focus on overly discrete product or service ideas results in them concentrating on interfaces and interactions aimed at touch-point innovation (Clatworthy, 2011). Service designers' skill are more communicable and accessible. When service designers are involved with map development, this involves a collaborative process involving all stakeholders including citizens, city planners, technology and cities.

Furthermore, they offer a link between stakeholders and resources rather than focussing on visualising information or designing a single touch-point. In doing so, service designers visualise, formulate and choreograph. They interpret people's needs and transform these into possible future services. In this new space, designers' expertise is based on their ability to empathise with people in relation to the system while applying thought to action (Fayard, Stigliani, & Bechky, 2017). The participatory experience is considered as "not simply a

method or set of methodologies” but as “a mindset and an attitude about people” (Sanders & Rim, 2002, p. 1). In this shift, the concept of “design for people” is replaced by “design with people.”

As the nature of the map has changed, the designer’s role in map development has also transformed. They are no longer mainly responsible for the visual aspects of communication in relation to the creation of goods, rather they expected to develop mutual benefits through applying systemic thought to issues and connecting stakeholder engagement and holistic approaches to many systems such as families, cities, and companies (Maglio et al., 2009). The involvement of designers can function in a more strategic manner when applied on a wider systemic, service and infrastructure scale (Brass & Bowden, 2009).

## Conclusion and Future Work

Using mapping as a vehicle of the service design discipline, the development of map services should not be viewed in isolation, instead it should involve the entire environment in a holistic and interdisciplinary fashion by evidencing problems in a user-centred and co-creative way in the context of service development, management, operations and marketing (Edvardsson et al., 2005). Maps and mapping services, from their traditional origins to recent innovations, have shown how the role of the designer has changed from the representation of information to acting as a catalyst of value system design. In the wake of this transformation, this paper argues that map developments nowadays contribute to service design, whereby traditional map design has changed to becoming a subject of service design.

This paper has tried to redefine the nature of maps, identify new perspectives on maps’ development, a context in which service design plays a crucial role, while highlighting the role of designers in map development in relation to the service design discipline. The purpose of map services and their role has expanded dramatically, and its usage is on a far grander scale than what went before. Map service appears to function as a service system in the creation of novel and dynamic indicators of urban life and issues, and therefore facilitates value for various urban stakeholders.

In summary, the paper has outlined the new role of service design in a complex value system and concludes that maps’ development contributes to the of service design practice, thus helping to redefine the nature of maps and service design’s role in value co-creation systems in complex city systems. Thereby when a designer designs a map service, s/he engages with a system that reveals a complex value system. In this role, service designers consider maps as services and adopt a human-centred approach to facilitate the engagement of key stakeholders in complex systems. Future studies might contextualize the involvement of service design in this new territory further and investigate its implications and limitations.

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# Service design and human resource consulting: An integrated vision

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## Abstract

When talking about service design people still tend to perceive it as something new, although the international debate in research and education fields is far beyond maturity. In fact, in the professional world and in education, we are witnessing three important pushes: service design tools are becoming valuable also for other professions; designers are searching for other skills in order to face the complexity of contexts; user experience approaches are becoming fundamental for organizational transformation. In particular, this paper addresses these three issues by analysing the intersection between service design and HR consulting. Both professions are involved in strategic projects that support businesses facing change: from the design point of view through developing new services and from the HR consulting point of view through enabling people to engage in change. The paper describes how these two professions meet and how this encounter can facilitate business transformation processes through collaboration experiences.

**KEYWORDS:** HR consulting, service design, business and cultural transformation processes.

## Introduction

This paper is the result of a combined effort of a group of designers, design researchers and HR consultants who have been working together to understand how these two professions can learn from each other and grow together. The work is mainly based on on-field experience with companies, where the two professions have collaborated in transformation processes, while theoretical research has helped us to reflect on the empirical results

achieved in the past years and position them within the international academic debate.

## Business and cultural transformation processes

The world is made of continuous transformations, if there were no transformation there would be no evolution. Similarly, also the business world is constantly changing for the most diverse reasons. Today the changes cover many aspects of business and they are occurring fast: the evolution of the needs of customers (both internal and external, BtoB and BtoC); the evolution of new technologies offering more and more advanced solutions; the change in work dynamics demanding for larger flexibility, agility and speed; the change in organization structures and their boundaries and the new challenges that concern big data, business intelligence and analytics (Petersen, 2016); the increasing need of performance improvement and innovation for any enterprise to stay competitive (Gino and Staat, 2015); the global challenge to attract and retain the most talented people, always more important particularly in highly complex occupations (Keller and Meaney, 2017)

All these needs and transformations require a shift in management paradigms (Mootee, 2013) and of the role of the manager and the skills needed for leading groups: the new skills being visioning, casting, learning and investing versus previous skills being working by targets, functions, education and delegation (Staes, 2009). Especially within innovation processes people need to feel and be engaged in higher visions from the start instead of only executing visions created by others. “Innovation usually emerges when diverse people collaborate to generate a wide-ranging portfolio of ideas, which then refine and even evolve into new ideas through give-and-take and often-heated debates” (Hill and al. 2014). So managers need to develop a new kind of leadership based on co-designing; they should structure organizations in order to allow each individual to contribute unleashing their innovation potential.

Moreover there is a radical change regarding the emerging need to involve customers within business processes, both for internal decision making and the development of solutions. Within this last issue co-design methods are seen as the best way to approach the problem by using customer journey maps as prototyping tools throughout the process. This is happening when defining new products/services and involving users in formulating better customer experiences, but it is also implied when talking about internal organization transformations where we tend to talk about employee journey maps (or employee life cycles). In business transformation processes this change in mindset brings people at the center of the design of new organizational services and the new emerging goal of HR Departments is designing a productive and meaningful employee experience through solutions that are compelling, enjoyable, and simple (Deloitte, 2016)

Successful companies are constantly wondering how to offer products and services that satisfy the customer/employee, how to improve their services with respect to other competitors, making sure that internal processes are effective through gradual investments. Furthermore successful companies are able to capture all the benefits that new social and digital technologies offer both in relationship with customers, and in bettering internal collaboration and management of knowledge. In doing so, they continually redefine and plan their transformation: they identify and pursue improvement goals and all this is achieved with people and thanks to people.

If in the past transformation happened through a top-down process, therefore top managers decided what needed to be done and the rest of the pyramid executed according to specific functions and delegations, today transformation processes involve everybody at every level, allowing people to grow through the transformation and participate actively throughout the process. In this scenario, change can be sustainable when people are called ‘on board’ and become themselves, with their creativity and experience, the designers of change. Today people are at the heart of transformation processes and this is why there is an increasing need for professions able to guide this evolution through new modalities that are capable to:

- understand the specific corporate culture, because there are no pre-packaged solutions that are good for everyone;
- give voice to the various stakeholders involved, in order to have an enlarged vision;

- be human-centered, to encourage motivation and engagement;
- encourage the creative process, to go deep, envision and build possible futures;
- support people to exploit all the different emotions associated with change, from the negative ones, like fear, anger and sadness to the positive ones, like joy, happiness, curiosity, etc. (Fredrickson, 2001, 2004);
- encourage people to adopt new behaviors by approaches based on “changing mindset” (Dweck, 2006, 2012) and “changing context” - the environment within which we make decisions and respond to cues (Dolan et al., 2010).

Knowing how to guide transformation processes also entails to be able to:

- use ethnographic analysis tools;
- be empathic with various stakeholders;
- guide and follow work groups;
- have a visionary approach;
- use methods that favour the elaboration of creative thinking.

## The role of service design within business and cultural transformation

In the professional world what is happening is that designers are called to co-design in different modalities within transformation processes and within this process they are often called by managers to help employees reflect on specific problems and find new solutions together. Problems can go from defining a better customer engagement service to defining new ways to work within the business or building a vision for the future development of the business itself.

The role of the designer in transformation processes has been described as a facilitator or mediator of multidisciplinary groups to reach different goals (for a deeper reading see Yee et al., 2017).

The profile of the service designer in particular is the most suitable to achieve such abstract outcomes varying from organizational structures, operation processes or service experiences (Stickdorn and Schneider, 2011).

Since design thinking is also becoming the next management ‘wonder bug’, a tool for changing management paradigms (Mootee, 2013) and the design attitude (as defined by Michlewski, 2015) is considered to be precious in facing today’s challenges, designers are often called to support human resource consultants in changing work environments and integrating them with design thinking tools and methodologies. In more advanced contexts designers are also asked to guide advisory boards in order to help businesses involve external experts in defining solutions together.

In general, however, in practice designers are not involved from the start of the transformation process, but rather are invited to perform in a specific moment within the process. Design is more often seen as a team building accelerator, while in reality the main goal of the profession has always been to co-design, to involve different stakeholders in the process for developing new ideas.

Therefore, due to this misunderstanding, in all the aforementioned situations, and beyond, there is a need to reflect on different aspects of the profession, including both limits and strengths, and how designers could integrate with other professions in order to better respond to the impelling business demands while keeping focused on the profession’s main goal.

Analysing previous experiences we have identified a few areas in which the design profession lacks in reflection in understanding:

- the opportunities and risks of facilitation (Meroni et al., 2018);
- the limitations in transferring design capabilities, from tools to a broader mindset (Sanders and Stappers, 2013); and of instilling a design culture which goes beyond the application of a process (Michlewski, 2015)
- the effectiveness of co-design in terms of final product/service delivery with respect to traditional design processes (Pirinen, 2016);

- the overproduction of ideas with respect to real downstream implementation (Verganti, 2017).

Within this reflection, starting from professional experience and also from confrontation with students, we realized that the design world is increasingly interlinking with the world of HR consultants. In particular we have noticed how service design and HR consulting have similar core competences, such as for example empathy and “perspective transformation” (the capability to facilitate individuals to change their frames of reference by critically reflecting on their assumptions and beliefs and consciously making and implementing plans that bring about new ways of defining their worlds) (Merizow, 1978, 2000)

But the way the two professions use this competence and the reasons why can be very different, although both are essential for business and cultural transformation processes. Many practitioners in the consulting environment are exploring this interconnection. An example is the report published by Deloitte, where HR experts identified specific consulting areas that can benefit from design, including organisational design, engagement, learning and more (Deloitte, 2016). Building on this knowledge and starting from our intuition, in the following paragraphs we will describe our point of view and the proposal of an integrated vision.

## Limits and opportunities of service design within business transformation

### Beyond the role of the design as a facilitator

The way design is practiced and adopted both by businesses and the civil society today is much more collaborative than it traditionally was. Co-design has passed from being an emerging practice to being usual and often seen as the only way to do innovation.

Within this context, businesses look at design as a tool to involve employees in decision-making by analysing the status quo and imagining future possibilities. This process usually takes the shape of a workshop gathering staff from different business units and sharing a business challenge to be tackled together.

It is in a context like this that a new role of the designer is defined: the designer is no longer merely seen as the expert that comes out with the brilliant solution and delivers it to the client, but as a facilitator able to interact with very different stakeholders and guide them to find solutions together (Muratovski, 2015).

This represents a big shift in the traditional service design activity. It is no longer a matter of merely interviewing final users and key stakeholders to collect the evidences that are necessary to design the new product/service (Segelström, 2013). It indeed implies to facilitate non-designers with very different backgrounds and characteristics to collaborate with each other and co-design solutions.

The service designer is in a sense familiar with such approaches because interacting with people is fundamental within the profession, but this doesn't necessarily imply the capability to lead a co-design session. Facilitation is a professional skill and there are experts who are specifically trained to coach. Historically, designers are simply not, or rather facilitation is not a skill that is officially foreseen in the curriculum of design education.

Service designers are trained to work in groups and sometimes the groups can be even highly heterogeneous, within some universities there are support programs for team building in order to allow students to learn basic techniques, but still this doesn't mean that designers know how to manage groups in a professional manner. For this reason, the designer's role is often confused by people coming from other professions. In this regards, the experiment made by Han (2009), illustrates the very different perceptions that the designer can evoke in stakeholders regarding the role the profession must have during the various stages of a project.

Indeed, there are some service designers who can be personally inclined to lead groups therefore performing better in those conditions, but there is the possibility that they don't act in the most proper manner and hence this leads to having to deal with critical situations. During a workshop there are many dynamics that can be difficult to manage for a designer: throughout the process, a conflict can arise because of different opinions of the participants; there can be some people that are not so confident in expressing their opinion and have difficulties in engaging with others; there are groups where all members want to contribute with long talks and time is limited; there are people that feel uncomfortable in playing, letting go and creative thinking tools and techniques. These are just a few examples of situations where the service designer faces group dynamics which can be critical and can be solved only thanks to personal intuition, instinct and wisdom.

What is felt by many service designers is the lack of awareness and skills within facilitation methods, that can probably be found in a group dynamics specialist or a professional in the field of coaching.

Being aware of how group dynamics work and how they develop could be a great value for the designer, necessary to understand what is going on when working within groups, but on the other hand it could be still not sufficient to know how to deal with them.

Facilitation today, besides being improvised and not grounded for most service designers, could also be considered as distracting for the design activity itself.

Indeed, the activity of facilitating as it has been defined by the community of psychological scientists (De Sario, 2017) is an activity that should be done with an 'outsider' tone, without adding content or opinions to the table. Based on personal experience in education and in the professional field, we think that in these contexts designers should stay focused on playing the role of the visionary and hence propose content and lead the group toward the project goal, being this the core skill of the profession, leaving facilitation to an expert in the field.

With regards to this, many authors have been studying the ever changing role of the service designer and how to conciliate the twofold activity of facilitating and proposing contents (Meroni and Sangiorgi, 2011; Tan, 2012; Yee, 2017). Selloni (2017) with her experimentation of co-design with citizens offers an extensive material for discussion, highlighting the crucial power of the designer in 'proposing contents', that goes far beyond facilitating the expressions of others and puts the designer in a leading position. From our perspective, the role of the designer should not be limited to summarizing a group discussion on post-its (Manzini, 2016) and probably should not be focused on managing the group, subtracting energy to the creative act. Rather, designers should stay focused on the design activity in order to develop intuitions, crazy thinking and breakthrough ideas. Facilitating is indeed a stressful and demanding activity, which could threaten the quality of the result of the co-design itself. Hence, we believe that the lack of a specific competence in facilitation is concerning for the service designers for two main reasons: the first one is related to the quality of the consultation, which can be compromised by the unawareness of the designer toward group dynamics techniques; the second refers to the effort in facilitating which affects the concentration of the designer in the creative act.

## Service design and HR consulting: integration of tools and methods

Based on the reflections described above, at the beginning of October 2017 we decided to have a live confrontation to understand how service design and HR consulting could merge together. The confrontation was organised as an event, where the authors of this paper represented expert practitioners in the two fields. They reported situations, in their experience, where they felt the need of the support of the other profession and they opened the discussion to the audience. The audience was composed of professionals of the two fields mixed with a generalist public.

The aim of the confrontation was to collect different perspectives on the possible integration of methods, tools, competences and activities of the two disciplines and to frame a proposal for a ‘manifesto’ in this field. What was interesting is that both professions found that the combination of the skills was empowering and has to start from the beginning of the transformation process. Below is the result of this confrontation (see also Figure 1 and 2).

**An open dialogue between professions: how does design see HR consulting and how HR consulting sees design? Which tools can be shared?**

### **The Designer’s point of view**

The following points underline different areas in which design tends to fail its task when called to perform within a context of change and hence the areas in which it would be useful to search for allies in the field of Human Resource consulting.

**1. For greater effectiveness in stakeholder engagement.** Upstream, the ability to involve CEOs and top management, at the beginning of the process, in understanding the importance of the project to ensure continuity over time and avoid the usual workshop and hackathon tendency to end with many ideas but without any concrete outcomes. Designers are often called upon to intervene in short activities within a process of change but often innovative ideas that emerge in the design activity do not find fertile ground after. In the long run, this can be negative because it creates expectations in the group and confusion in understanding the real aim of the design profession confusing it with a teambuilding activity. HR consulting has developed methods to build trust upstream and also define transformation goals with stakeholders from the very start of the project.

This is the step of the diagnosis, when the goal is to have a deep understanding of the needs, the context, and to build a strong alliance with the customer. With a process consulting approach, HR consultants interview the stakeholders in order to gather information, understand the context by a systemic point of view, and tighten a relationship where the stakeholders are in some way the ‘content experts’, because they are the ones who know what they need, while HR consultants are the process experts, because they know how to guide the project. The final goal of the project is the result of a co-design process for diagnosis. In this manner, stakeholders feel engaged in the process and are willing to risk and take the process forward.

**2. For group management.** In the planning phase of the design process, it would be helpful to have an ally able to understand group dynamics in order to achieve better results in each phase. Groups are living systems and go through recognizable stages as they change from being a simple collection of individuals to a real group (Tuckman, 1965). When you understand it and know how to manage the subsequent dynamics, you can help working teams become effective and productive. This collaboration can determine what tools to use and how, with what aim, and also who to involve in the process and how to form groups. It is also useful to allow designers to better focus on reaching design goals without being absorbed by having also to deal with group dynamics during the design activity, leaving this task to professionals that are more skilled and expert in this field.

**3. For conflict management.** While working with HR consultants we have learnt that as designers we tend to see conflict as a negative factor, something that needs to be quickly solved, while it can also be seen as a positive moment, a crucial turning point in group dynamics which, if managed well, can bring to breakthrough insights. This change in mindset must not be underestimated because it can also lead to defining new pathways in managing design processes. However, it is important to recognize the typology of conflict and lead it in the right direction.

**4. For the acceleration of integration.** We have come to the conclusion that the two professions have common abilities and that we deal with the same themes from different

angles. In particular, as said in the above paragraph, in order to be successful both designers and HR consultants need to have an empathetic approach, and need to lead people to work together with such an approach, however, the tools used are very different, but, when combined, they accelerate integration between the people involved in the process. Designers talk about empathy when analysing people before designing, while coaches focus on empathy within the working group while designing.

### **The Human Resource Consultant's point of view**

The following points underline different areas in which design offers methods and tools that can support Human Resource consultants in better performing within a context of change and hence the areas in which it would be useful to integrate.

**1. For building a place of trust and empathy.** If we want to focus on our customers'/employees' needs and be effective, we have to work with our clients in a personal way, emphasizing authentic openness, curiosity, and humility. As consultants we need to create an atmosphere of genuine trust and caring so that clients can share what's really on their minds (Schein, 2016). Consultants and clients can then jointly discover what needs to be done. The co-design approach, methodologies and tools, facilitate the creation of a participative atmosphere where everybody plays the same game and at the same level. In particular, role playing methods allow people to live the experience in a playful matter, but it is a serious play, like playing card games, Monopoly or Risk, people are serious about it and tend to care for achieving the goal more than in other occasions of adult discussions like traditional meetings. So co-design, reducing interpersonal barriers and accelerating a deeper sharing of different points of view, can be a fruitful approach to empower people, energize teams, overwhelm prejudices and reduce cognitive bias (Liedtka, 2015).

**2. For visualization.** In many projects design enters thanks to graphic skills. The capability to transform a conversation into a visual representation allows participants to elicit their mental models, build a common knowledge around a topic and stimulates the debate underlining gaps and areas of opportunity. The use of maps, capable to transform a complex system of actors and the interactions between different parties involved in a process, facilitates confrontation. The visualization of needs, desires, expectations, fears, etc. facilitates the creation of a common ground of understanding of a topic and supports decision making processes.

**3. For structuring the project process.** The design process is perceived as an 'ordered' set of tools that give form to a methodology. When involved in a complex co-design project it is important to keep track of the results emerged in every step and to learn from them to go forward. The iterative method adopted by the design profession allows the team to build on each step of the process keeping in mind the final goal and preserving an overall vision of the whole process. The design process allows HR consultants to understand in which stage of the process they are, keeping track of outputs and intuitions and generating comparable outputs, both within the same project and among different projects.

**4. For empathic integration both at a cognitive and emotional level.** Co-design activities involve people while designing. This means that people are involved in the development of new ideas in an active/participative manner rather than only answering questionnaires and interviews. As human beings they are living an experience and are totally involved in it, mentally and emotionally, and this increases and develops awareness and empathy in the group and towards other stakeholders and therefore customers. Service design methodologies are based on practical tools that combine the two levels of engagement and this allows people to deeply understand what they have to change or improve, to define new solutions.



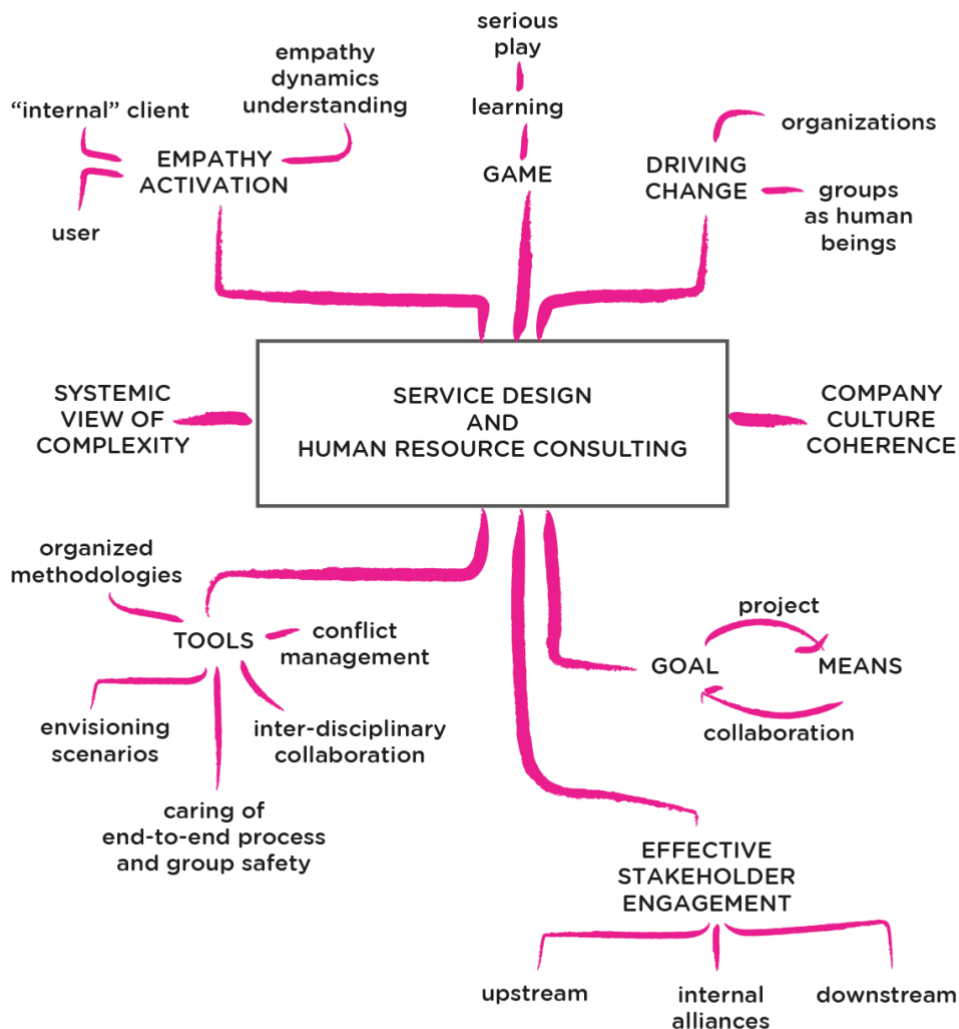


Figure 1 – Mind map that emerged from the confrontation between the professionals representing the two disciplines during the event held in October 2017.

As previously mentioned, the confrontation involved also the audience that attended the event. Therefore, after the panel discussion between the experts, the audience was invited to contribute to the debate, during an interactive session. All contributions were mapped on a board and they are reproduced by Figure 2.

The participants were asked to brainstorm on the connection and integration of the two disciplines: service design and human resource consulting. Five areas of possible synergies emerged:

- empowering collaboration: service design tools are seen as means to support people to work together and accelerate collaborative activities. They offer visual guidance to organise ideas and thoughts of diverse people;
- applying design methods to diverse fields: design methods and tools are seen as flexible and they are currently being applied in diverse fields, especially in management.
- shifting from individuals to groups: in a context where the design activity is becoming increasingly collaborative, the specific competences of the HR consultants represent a significant value for managing groups dynamics and creating communities of intents and practice.
- managing diversity: similarly to the previous point, the alliance of service designers with group dynamics specialists can be beneficial to value diversities that are naturally found within groups, in order for them to be empowered instead of flattened.
- fostering emotional pushes: during a collaborative activity, it is important to emotionally engage people who participate to it. Even if an important principle of service design deals with building empathy, designers can surely benefit from the knowledge of behavioural experts to increase motivation to participate.

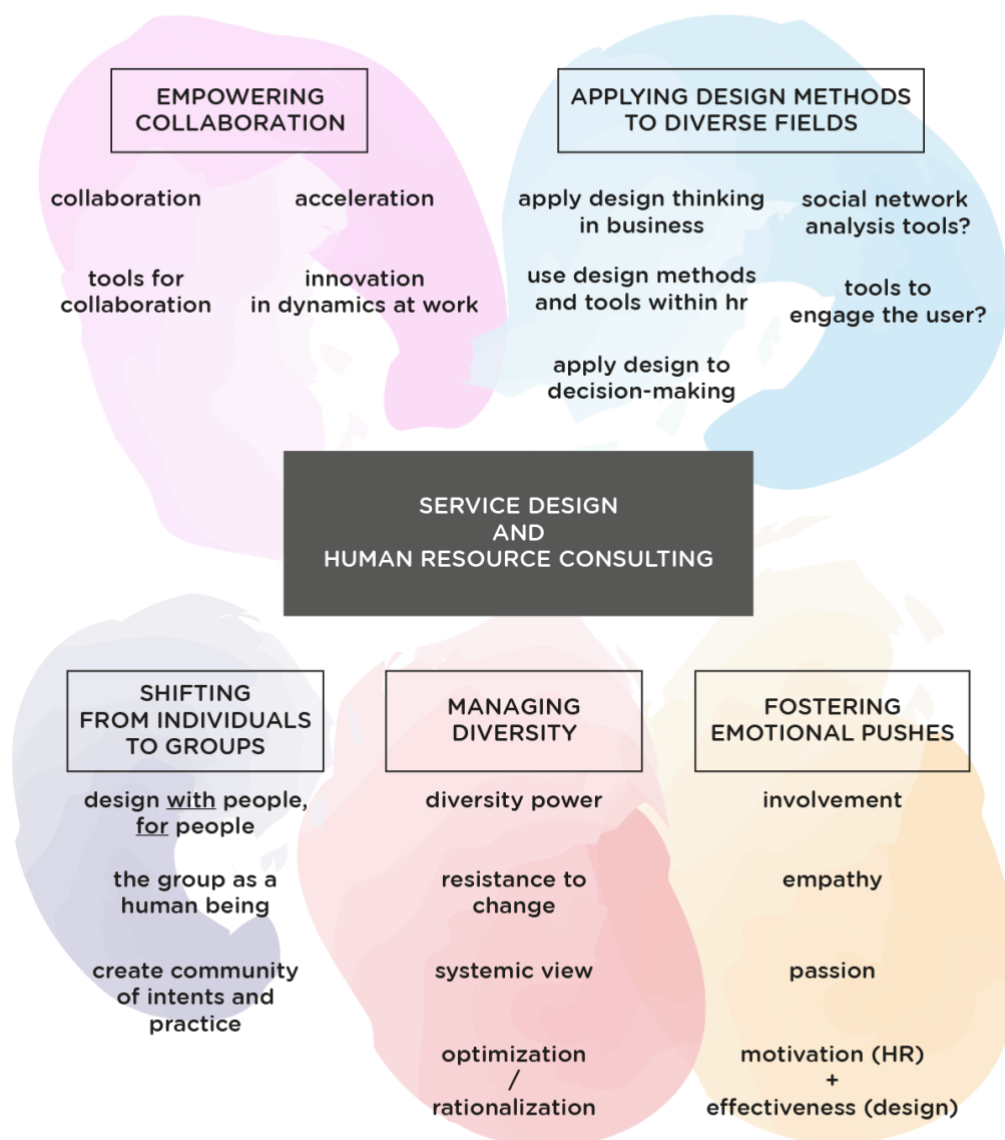


Figure 2 – Representation of the brainstorming co-designed with the audience of the event held in October 2017.

# Proposing an integrated vision for the future

## Implications in the professional world

In conclusion, what we are trying to build is a set of tools and methodologies that see a total integration of the two professions. Our intuition leads us to believe that if the two professions collaborate in defining a transformation strategy together from the start instead of working in parallel, this could give businesses a stronger acceleration in change dynamics, reducing costs and being more effective throughout the whole process. This is a first reflection on what is happening and further on-field testing needs to be done in order to define a possible integration model. The case studies on which this paper is based still see a separation between the professions but they have allowed us to start reflecting on our differences and the power of mutual collaboration. The next steps will be to approach new projects together, understanding the implication of a more profound integration and defining a model for ongoing collaboration.

## Implications in education

In the field of education the implication of such reflections is still not clear: on one side there is a desire to bring HR consulting tools within service design schools (and vice versa), in order to allow both parties to be aware of each other and of the opportunities in working together; on the other the possibility to define a new specialization that can allow these two professions to come together and form an expert in business transformation processes. The doubts of both have been described in the previous paragraphs and maybe the best solution would be to create opportunities to form teams in which the two professions can meet and learn how to collaborate.

We are not proposing to teach each other specialized skills with the risk to form hybrid professionals (nor designer, nor HR consultant), but education opportunities to learn how the two professions can integrate in the future. The vertical expertise should stay the same, but both should gain basic knowledge about the other's profession in order to build a bridge in which the two professionals can work effectively together, speaking the same language. A first practical step in education toward this solution could be to insert a specific module within both educational paths about the other's discipline in order to get that basic knowledge that we mentioned above.

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*CoDESIGN. Creatività in rete. Building a Design Orienting Scenario with respect to groups psychology to foster dialogue, engagement and effective collaboration* by Marta Violetta

*Service design inside human resources. Multiflows active environment* by Matteo Mariani

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# Developing *recovery* oriented services and co-production in mental healthcare: Building-up on existing promising organisational practices

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## Abstract

*Recovery*, as a patient-centred emergent transformative concept in mental healthcare, requires a change in the culture and practice of organisations at different levels. This paper investigates the potential of nurturing existing *recovery* oriented initiatives as promising practices for the re-orientation of mental healthcare provision.

In the field of social innovation, promising practices are intended as very context-linked sustainable practices which open up possibilities of societal radical transformation based on people's real needs and existing assets. Similarly, in mental healthcare services, the authors argue that emergent promising *recovery* oriented and co-produced practices can favour the shift from a traditional top-down culture to a more collaborative one.

This paper is based on an experimental action-research project, *Recovery CO-LAB*, developed in collaboration with the Mental Health Department of *Spedali Civili di Brescia*, aiming to explore how service design could help the organisation to increase its orientation toward *recovery*.

**KEYWORDS:** service design, mental healthcare, *recovery*, social innovation, promising practices, co-production, co-design

## Introduction

*Recovery* as a concept, in its developing application in care systems globally, promotes patient participation and it is characterised by a strengths-based and life-oriented approach.

In a *recovery* logic, instead of being underused and undervalued, personal skills and experiences of patients and professionals are seen as resources with a meaningful influence on the design - and also the delivery - of services (Repper & Perkins, 2013). In this perspective *recovery* is strictly related to co-production which by nature is “*appreciative, collaborative, respectful and active*” (Lewis et al., 2017) and based on the concept that everyone has something to contribute within a shared context.

The idea of recovering from mental disorders as a personal journey different, gained strengths from patients’ stories about their own lived experiences that contributed to spread positive expectations about the possibility of an independent and fulfilling life even in presence of severe conditions. In parallel, a more *recovery* oriented mental healthcare system was pursued thanks to the achievement of some key steps in policy-making and mental healthcare management including the deinstitutionalization and the consequent evolution toward a community-based psychiatry.

This article considers the combination and mutual influence of these bottom up and top down initiatives as fundamental assets for a deep transformation of mental healthcare services. In fact, starting from the periphery and militant movements, some autonomous practices of peer support had gained credibility in the system, and are now a core component for the development of *recovery* in established systems. However, these emerging user-led and co-produced practices, even if recognised and indicated as desired healthcare models, are struggling to spread and become the norms, motivating this research project.

After reviewing the multiple origins of *recovery* and linking it with challenges and opportunities of co-production in mental healthcare, the paper focuses on exploring the concept of promising practices as discussed in Design for Social Innovation theory. The authors use this as the starting point to summarise the Recovery CO-LAB project experience and to reflect on the strategies applied to favour the development of *recovery* and co-production in a mental healthcare department in Italy.

## Origins of *recovery* in mental healthcare: a bottom-up and top-down movement

The *recovery* concept originated in US during the ‘60s as an anti-psychiatry movement led by professionals and promoting a more consumer-driven approach. Then in the following years, people with severe mental illness - initially spearhead by professionals - started writing about their personal experiences of *recovery* initiating the consumer/survivor movement and patient-controlled initiatives with the aim to protect the patient's rights on being informed about their condition and on participating to treatment decisions, care planning and delivery.

The establishment of a *recovery* oriented mental health system should be searched also in the phenomenon of deinstitutionalization - meaning the move from the long-stay in psychiatric asylums to more distributed and community-based solutions for patients with severe mental health illness (Tomes, 2006). The transition toward deinstitutionalization, in US and Western Europe, necessarily created the need for new forms of community-based support systems. The 1970s saw the expansion of welfare programs and national legislation - like the Basaglia’s experience and Law 180 in Italy; the lack of funding and coordination between medical and social services though left many patients to stand for themselves.



In parallel, the World Health Organization developed the rehabilitation model that was aligned with the community-based support programs and represented an effort to keep together within the same conceptual framework the traditional approach, based on interventions to overcome or reduce symptoms and disabilities, and the *recovery* vision that gives more importance to people's assets, choices and capabilities (Anthony, 1993).

Notwithstanding these significant steps, moving from *recovery* as an individual self-managed process to *recovery* oriented services is still an ongoing process that implies several challenges. The transformation toward *recovery* calls for a paradigmatic change of infrastructure and performance of the mental healthcare system that is difficult to envision (Ostrow & Adams, 2012).

## Challenges and opportunities when fostering *recovery* oriented services and co-production in mental healthcare

As suggested in literature, the authors start from the assumption that co-production, with its different levels of patient involvement - from being informed to participating in the planning, co-design and co-delivery of services - is a fundamental trigger for service transformation toward *recovery*.

Currently, the most mature experiences stemming out from a synergistic view of *recovery* and co-production can be found in UK (Slade et al., 2014; Frost et al., 2017); experiences are also developing in countries like New Zealand, Australia and Ireland (Shepherd et al., 2008) where a system of coordinated services is well-established around concepts like individual treatment plans and coordination among different services.

According to the perspective of the UK ImROC (Implementing Recovery through Organisational Change) group, *recovery* oriented services and co-production are based on mutual and reciprocal relationships in multidisciplinary teams and consider people as having human assets, resources and networks that go far beyond their institutional roles. Here co-producing services means enabling people to lead their own *recovery* journey and empowering them in developing personal resources in peer networks and communities (Lewis et al., 2017).

Notwithstanding these significant steps, developing *recovery* oriented services based on co-production faces resistances from organisations and professionals who have difficulties to clearly define and recognise the values of *recovery* (Davidson et al., 2006); issues relate also to the limitation of available resources, risk management and the devolvement of responsibilities (ibid). There is a general fear of devaluing professional knowledge and expertise often accompanied by the limited trust in users' capabilities and on the sustained motivations behind their active participation.

Nevertheless, reviews of existing studies on the engagement of users and carers in the delivery and evaluation of mental healthcare have documented the feasibility and potential of involving users also with a history of severe disorders given the right support (Simpson & O House, 2002). There is a growing recognition of the role played by self-help and peer support services to enhance the potential of *recovery* within official mental healthcare services or independent peer-operated programs (Ostrow and Adams, 2012). At the same time empirically validated *recovery* oriented practices are starting to be formalised, evaluated, promoted and replicated (Slade et al. 2014). Examples are the *Recovery colleges* or *recovery* education programs, in which services users (but also citizens) can acquire and co-produce competencies and tools to be used along their personal journey to *recovery* through an educational approach.

Exploring how public sector organisations can leverage bottom-up and outside in processes of innovation is now a matter of debate (Hartley, 2005). Starting with the assumption that innovation can happen with the transfer of bottom-up elements to broaden organisational levels (Boyle & Harris, 2009), the possibility to use innovative practice prototypes seems to be a fundamental element to be nurtured (Lucchi et al. 2016).

This article found an analogy between the interplay of bottom-up and top-down initiatives for mental health care transformation and the evolution of social innovation. We refer in particular to studies investigating how to support and scale social innovation initiatives as a driver for the transformation of public services (Manzini & Staszowski, 2013). The next session will review some of these studies, highlighting some of the concepts used by the authors to revisit their work with mental health.

## Building up on promising cases of social innovation

Social innovation has been described as “*a process of change emerging from the creative re-combination of existing assets, the aim of which is to achieve socially recognized goals in a new way*” (Manzini, 2013: 57). Often these changes have been associated with behaviours and initiatives growing out of problems posed by everyday life (Jégou & Manzini, 2008) and addressing the transition toward a more sustainable future, such as micro-nurseries, purchasing groups or co-housing, also described as “promising cases”. Most of these initiatives are forms of collaborative public services, led and co-produced by citizens, that “to endure and diffuse beyond local communities must be recognized and supported” (Manzini & Staszowski, 2013: page i).

As for *recovery*, also social innovation initiatives can be viewed as top-down and bottom-up movements, depending on where the change starts and who the original drivers are: if they are experts and decision makers (top-down) or people and communities directly involved in the transformation (bottom-up) (Manzini, 2013).

Concerning the top-down social innovation Manzini (2013) actually uses as an explicative case, the experience of the Italian psychiatrist Franco Basaglia who, in 1970s, founded the Democratic Psychiatry movement opening up the psychiatric hospital where he was director in Trieste. As a result of Basaglia’s effort, in 1978 a national law opened up all psychiatric hospitals and led to new forms of assistance for people with mental health disorders. An interesting result was the birth of economically effective commercial enterprises which actively involved patients - with their individual capabilities (e.g. restaurants and cafes, carpentry workshops, etc.).

Bottom-up initiatives in social innovation are on the contrary generated by the so called “creative communities” (Meroni, 2007) who collaborate in the co-creation based on commonly recognised values. They break up with mainstream models proposing new forms of collaborative services based on an original combination of existing products, services, and knowledge. These solutions can be considered as “promising cases” with the potential to be scaled up and replicated in different contexts if they find a tolerant environment and if supported by an appropriate design intervention (Jégou & Manzini, 2008).

Starting from this analogy with social innovation bottom-up and top-down movements, the authors identified some key factors described in literature favouring the growth of these promising cases: their recognition and observation, the identification of common values and favourable environmental conditions and the use of design methodologies to make these values more recognisable, shared and practicable.

## Recognition and observation

As Meroni (2007) recommends, the first step to support creative communities in fostering promising practices is their recognition. Aligned with Meroni's perspective, Manzini (2013) identifies as a fundamental initial step, the observation of the existing cases (ethnographic on field research) and the consequent analysis of their success in terms of sustainability, replicability and their capacity to involve more people (degree of tolerance) (Jégou & Manzini, 2008).

## Defining common values

To support social innovation, it is also crucial to nurture the sense of belonging and commitment of people involved in the practices, working on commonly recognised values. As Morelli (2015) suggests, only service offerings with a perceived local and personal relevance are considered as valuable. In highly localised services the sense of trust – linked to social proximity, personal acquaintance and geographical proximity– works as main catalyst for user attention and as main driver to build up a successful scaling up strategy. As discussed in service research literature, “value” is always co-created and situated (Grönroos, 2008), but needs to account for a multiplicity and at times conflictual “values”. When aiming to scale up collaborative services, service design is proposed as contributing to the co-creation of “experiential values” in a specific social context (Arvola & Holmlid, 2016), amongst which: social significance meaning a contribution to the person's status and identity; mutual advantage, where design supports the cooperation and coordination between actors; and collective welfare, leading to organisational change.

## Supporting different stages of growth

After the recognition of common values the following question is: *“Is it possible to consolidate and replicate these promising cases?”* (Jégou & Manzini, 2008: 33).

In the design for social innovation literature, design can intervene at different stages of the development process, namely the solution prototypes, mature solutions - spread internationally by imitation - or implemented solutions - supported by specifically designed “enabling solutions” (Jégou & Manzini, 2008).

The very early stage of solution prototypes is a frequent form of collaborative services in public sector as they test if a service is feasible and if it can be implemented: it is very context-dependent and very much reliant on people who started it. In order to transform these initial ideas into mature ones, the design intervention can help reframing the initial promising solutions, working to preserve the winning features while increasing their accessibility and effectiveness. According to Manzini (2013) professional designers could play an important role designing with or for the communities. In particular, “designing with” includes: co-design and consensus-building, where design methodologies and tools help to define common values and agree on the strategy to follow; designer as mediator and facilitator, for instance in co-design workshops where participants may align to the existing assets and build new service scenarios; or co-design activities where design prototypes are used to envision and discuss new possible solutions.

From this short review the authors learnt: the relevance of identifying promising practices as a starting point for affecting wider systems; the important of designing for the co-creation of value, recognising the potential conflicts between the original values behind these initiatives and the new contexts and communities where they should develop or expand to; and the potential of a design-led process to increase the accessibility and attractiveness of the solutions and the collaboration and consensus building across diverse social actors.

In the following paragraphs, after an introduction of the Italian and Brescia (a small city in the East of Lombardy region) contexts, we present and discuss the Recovery CO–LAB project where promising co-produced practices were identified and analysed as the starting point for their development and replication in the organisation.

## Recovery CO–LAB: framing the context

While *recovery* and co-production are embedded concepts in the international mental health arena, in the Italian context - where government documents and a recent proposal for a new Mental Health Law<sup>1</sup> introduced *them* as a mandatory orientation - their declination in routine activities of mental health services still lacks behind.

Nonetheless, some good practices are still running across the nation informed by Basaglia's flagship experiences such as those of Trieste, Trento and Modena (see for example the national meeting for patients, families and carers "*Le Parole Ritrovate*" in Trento). Besides these major initiatives, many promising projects occur but hardly reach the attention of a wide audience.

In the Brescia area in particular, *recovery* and co-production began to be on the agenda of local mental health services about ten years ago when public and third sector services agreed to test a tool for the promotion of person-centred care - the so-called Mental Health Recovery Star - introducing concepts such as peer-support and negotiation between users and services.

However, a sort of cultural divide about *recovery* and co-production still characterizes and separates front-line staff members from middle-managers and directional board. With this in mind, the UOP23 of Spedali Civili di Brescia became interested in service design as an alternative methodology to enhance their ability to change.

## The Recovery CO–LAB project

The UOP23 (Operational Psychiatric Unit n. 23) is part of the Mental Health Department of *Azienda Socio-Sanitaria Territoriale Spedali Civili*, a health organisation that operates under a regional framework assuring continuity of care from acute settings to ambulatory care through rehabilitative interventions. UOP23 is composed by: an acute inpatient unit, two community mental healthcare centres covering about 220.000 inhabitants in the area of Brescia, a day-centre and two rehabilitative residential units with different levels of care. The multidisciplinary team of UOP23 is staffed with psychiatrists, psychologists, nurses and social workers.

Recovery CO–LAB is a one-year experimental project developed by the Departments of Design and Management Engineering of Politecnico di Milano in collaboration with the UOP23. The project explored the application of design approaches and tools to foster co-production in *recovery* oriented experimental practices across UOP23 services. The process had been involving a heterogeneous group of actors including patients, family members, doctors, caregivers and local actors for a total of 59 people.

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<sup>1</sup> The mentioned governative documents are "*Ministero della Salute. Linee di indirizzo per la salute mentale*" (2008). And the law proposal refers to "*Proposta di legge 2233 di Casati et al. del 2014, Camera dei Deputati*".

The project was structured in two design and learning cycles of 10 weeks conducted within two very diverse contexts (see Figure 1). The first cycle focused on the community mental healthcare centre, the day-centre and the rehabilitative residential unit in Brescia, while the second cycle on the inpatient unit and the community mental health centre in the Montichiari hospital.

Figure 1 - The Recovery CO-LAB process.

## Recognition and observation of promising practices

### Definition of common values

The identified values, shared with participants and used as common language for co-design activities, consisted of:

Keeping these values as a point of reference, co-produced practices were analysed considering both the experiences of people involved (activities and spaces where these take place) and organisational aspects (roles and rules). Reflecting on co-production values helped the design team to map the state of the art of promising practices and then to identify critical points and opportunity areas that became input for co-design workshops.

## Supporting co-produced practice with design interventions

As mentioned before, the design cycles were conducted in two very diverse contexts in terms of organisational readiness to co-production and they were structured around 4 co-design workshops.

The first workshop focused on the personal medical record prototyped for the UOP23 residential services and the second on the community mental health centre welcoming desk. In the second cycle, given the complexity of the inpatient ward in Montichiari the team had to slightly reframe the research with the aim of investigating the context and try to co-define some opportunity areas for the improvement of the inward experience.

The design interventions aimed to foster the following changes:

1. Rethinking the concept of a personal medical record into a personal journal able to support the overall *recovery* journey;
2. Fostering the shift from the community mental health centre welcoming desk to an accompanying service across the entire patient journey across services;
3. Re-thinking the in-ward activities to open-up opportunities for co-production in a high-risk environment.

### 1. From personal medical record to a personal recovery journal

The personal medical record prototyped and co-produced by caregivers and patients of the UOP23 residential services in Brescia, is a paper repository for patients to collect all the fundamental information about their illness and symptoms as well as notes and tips for rehabilitation. It was chosen as a clear example of a co-produced tool, whose development was still in progress and for this reason had the potential to be improved.

The design team used data collected during the field work to create 3 patient journeys and scenarios as participatory material for the first workshop, which involved 15 participants - including patients, their families and professionals. Co-design tools such as persona profiles, customer journey maps, value and inspirational cards and a service offering map (see Figure 2) were proposed to re-think the personal medical record.

From the co-design session emerged some new ideas, such as a “role play” table game in which the patient-player can go through the challenges of an ideal rehabilitation journey; or an online and offline “multi-level activation platform” providing relevant information, self-help tools and peer-to-peer exchange channels that could be activated in agreement with doctors and with different levels of visibility.



Figure 2 - Workshop 1: co-design tools.



In preparation for the second workshop the design team trained expert patients to interview other patients using a simplified customer journey map. The collected stories allowed to identify key-common stages of a *recovery* journey that were used in the second workshop as a tool for participants to align their knowledge.

## 2. From the welcoming desk to an accompanying service

The welcoming desk is a service co-produced and co-delivered by some healthcare professionals and expert patients in the community mental healthcare centre in Brescia. It involves expert patients on a daily basis welcoming and helping to orient new patients across the UOP23 services.

The second workshop aimed at evolving the experience of the welcoming desk toward an accompanying service, meaning a service able to support patients in the different stages of their *recovery* journeys. 16 people participated to the session, divided into 3 groups. Tools used in this session consisted of a synthetic description of the key steps of the *recovery* journey as a trigger for the discussion, inspirational case studies (see Figure 3) and role cards to imagine new functions and their impact on the roles of people involved.

Ideas and discussions emerged from the session focused on combating stigma and aspects related to the support needed during the latest stages of the patients' journey, when they try to go back to their social life and their work activities. For instance, a group envisioned a safe space with very practical job facilities (carpentry, kitchen, etc.) where patients - supported by experts - could experiment with job skills.



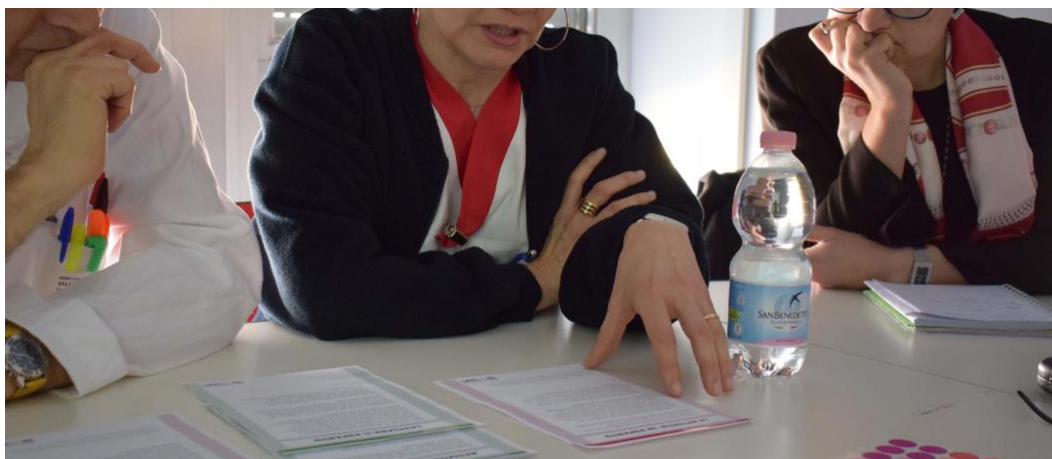
Figure 3 - Workshop 2: inspirational case studies.

## 3. Opening up space for co-production within a high risk environment

Aware of the complexity of the Montichiari context, the second design cycle started with an exploratory meeting with representatives from Montichiari acute inpatient unit and community mental health centre.

As mentioned before, the meeting revealed limited familiarity with the concept of co-production as well as difficulties to imagine how co-production could be implemented in a ward working in an ongoing emergency situation and with patients in a state of acute conditions.

At the end of the field work stakeholders agreed to focus on implementing the daily in-ward stay, reflecting in particular on activities and spaces. Thus, workshops 3 and 4 focused on this topic and involved respectively 15 and 17 participants, also including local stakeholders (a librarian and an art therapist). Similarly, to previous sessions, some tools were used to help participants in using creativity and aligning very diverse perspectives on existing services. These consisted of inspirational case studies, quotes from UK literature and field research insights cards (see Figure 4).



**Figure 4 – Workshop 3: inspirational case studies, cases from literature and research cards.**

The groups came out with new rehabilitative and social activities –such as walking sessions, art, book reading, in-ward music sessions, etc.– and explored the possibility of strengthening the bond with existing services available on their territory. Workshop 4 aimed specifically at turning these ideas into concrete solutions to be actually implemented by the ward, like an in/out ward information kit, or developing the role of expert patients as support for in-ward stay and the exit phase.

## Discussion

This paper has used the analogy between the concept of promising cases in social innovation with the work done to increase co-production initiatives in mental healthcare. Together with the importance of building up on already known experiences, similarity was found in the importance of working on co-production values to make them more recognisable, shared and practicable, even where there was no original awareness of the term and its implications. Furthermore, the design team used design tools to help translating these abstract terms and values into ideas and potential activities, all built around a deeper understanding of the *recovery* journey.

### Building up on already known experiences

Working on promising practices was useful as people already owned these initiatives and could reflect on possible improvements starting from very personal experiences. Choosing the welcoming desk as design focus of the second workshop, for example, allowed to ask expert patients working at the desk to collaborate in the design research in collecting other patients' stories favouring a higher level of participation and involvement, not always easy with this kind of population.

### Different awareness on co-production

The level of awareness on *recovery* and co-production was very diverse for people involved in the process and often very subjective. This implicates different levels of readiness even among services of the same organization. Because of this the design team had to adopt different context-based strategies: if workshop 1 and 2 could work on improving and expanding existing practices across the system, the second cycle needed to first align the participants on recognisable values. For this reason all workshop participants were asked to review *recovery* and co-production starting from literature quotes, case studies and insights from the field research. Emerging from this activity was a negotiated space for



experimentation in the form of possible inward activities for patients or the need for improving the entrance and exit of patients as part of their overall *recovery* journey.

## Making values and concepts tangible

Identifying shared values as objectives to be achieved and guidelines to be followed acquires a fundamental role in establishing a common language and aligning participants' expectations. Fundamental vehicles for engagement was the sharing of patients' *recovery* experiences and the use of co-design tools as a way to translate abstract concepts and values into ideas for practical activities: e.g. the co-created patient profiles, the *recovery* journey map alternating the patient and professionals' views on the service provision, the value cards providing hints for the re-thinking of services or the inspiring cases cards providing tangible examples.

## Responding to the needs of the whole *recovery* journey

Through the co-design process the design team aimed to support all the stakeholders in envisioning how these values could respond to the need of the *recovery* journey that, with its iterative and recursive nature, required a holistic vision of the current mental healthcare system. Analysing very diverse stories and the existing gaps between service providers, helped participants to look outside their own services and teams and consider other internal and external resources as new assets to guarantee continuity of support along the *recovery* process. As an example during the workshop 3 participants envisioned the possibility for inward patients and caregivers to attend rehabilitation courses provided by the mental healthcare community centre, anticipating the beginning of the *recovery* process and gaining fundamental knowledge for when they would exit the hospital.

These valuable insights do not diminish the extreme difficulty of engaging and motivating people participation and engagement. The project confirmed the strong need for very motivated actors which are keen to invest personal extra effort and are willing to take positive risk. Also, given the vulnerability and diverse conditions of patients, a significant effort was made to make sure that user knowledge was considered and fostered as a crucial resource.

## Conclusions

This paper has taken inspiration from studies on design for social innovation where designers work to recognise, develop and empower promising practices so that they can become self-standing social enterprises and have an important impact on society.

As discussed in the previous section we found a strong similarity with this process even if working just at the early stages of the process. What was inevitably different instead was the constraints given by a highly institutionalised context as the mental healthcare system where these promising practices should grow and develop. In this context increasing awareness and exploring opportunities for *recovery* and co-production are a fundamental first step to find, negotiate and create the actual space for experimentation and change. In the authors opinion, thinking of dedicated co-design tools for this stage could be particularly relevant.

Finally, empowering people involved in service co-production and creating a safe space for starting a new dialogue on co-production are both very important aspects that need to be simultaneously considered and nurtured in designing a strategy toward a lasting systemic change. It is only after having built some evidence on co-production values and having negotiated this experimentation space that the design intervention could start working on the “enabling solutions” (Jégou & Manzini, 2008) that can favour the growth of *recovery* oriented and co-produced mental healthcare services, as it is for social innovation initiatives.

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# User perceptions of design games as settings for organizational learning: Case *Topaasia*

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## Abstract

Design games are a co-design tool used in diverse environments including service design, improving organizational processes and creating strategies. In this paper, we expand the role of design games to include organizational learning and outline a theoretical framework for analysing how design games provide a creative space which supports processes of *expansive learning* (Engeström, 2001) within organizations.

We illustrate the framework by presenting preliminary results about the use of *Topaasia*, a design game for supporting co-development of organizational practices. Based on the user perception of *Topaasia*, we argue that design games can support organizational learning even in the absence of a design project by providing a space for creative dialogue through which practices are transformed. Finally, we propose a research approach further study the effects of using design games as tools of organizational co-development.

**KEYWORDS:** design games, organizational learning, interventions, expansive learning, creativity, playfulness

## Introduction

Design games are a method of collaborative design in which highly context-specific physical games are used to invite stakeholders to participate in design processes. Design games have been shown to be powerful tools for creating spaces for creative dialogue, as evidenced by their use in the creation of new services, the improvement of organizational processes, and the creation of new strategies (Harviainen, Vaajakallio, & Sproedt, 2016; Klapztein & Cipolla, 2016; van Amstel & Garde, 2016). In this paper, we expand the role of design games by describing how design games can be used as settings for organizational learning.

We discuss design games as a method for developing practices and organizational processes by providing a space for playful creativity. Multiple authors have described design games as playful spaces and activities in organizational contexts (Vaajakallio, 2012; Hannula &

Irrmann, 2016), and the link between playfulness and creativity acknowledged in also organizational research (Mainemelis & Ronson, 2006). However, the patterns and processes connecting the use of design games to learning have remained largely unexamined. In this paper, we propose that the potential of design games as an organizational co-development intervention has not been fully explored. Especially the design games applied in service design have been used to interrupt routines and focus on building new understanding about a particular context (Kaario, Vaajakallio, Lehtinen, Kantola, & Kuikkaniemi, 2009) and support the abilities of “everyday people” to design their own environments and working practices (Sanders, 2006). This, in turn, supports organizational learning, as people expand from individual to organizational knowledge and adapt idea gained in play and simulation into organizational life (see Kim, 1993). To examine this, we answer the research question: **How do design games function as playful organizational learning tools?** To answer this, we first introduce expansive learning as a framework for studying organizational learning.

## Organizational learning as the development of practices

We look at organizational learning as the development of practices relevant to the collective capabilities of organizations (Gherardi, 2011) in contrast to e.g. individual learning in organizational contexts. Practice theory is interested in the practical knowing that is behind competent everyday action and posits that knowing in practice is inseparable from doing, i.e. that knowledge is not a possession of individuals but rather a continuous social achievement (Gherardi, 2011). The continuous performance of intelligible collaborative action – the *practice* – is always dependent on the social context and shared tools of a *community of practice* (Cook & Brown, 1999; Lave & Wenger, 1991) and always situated in space and time (Gherardi, 2011). Because the capabilities of organizations are ultimately comprised of the continuous, recursive practices of their members, organizations must be able to support the development of practices for organizational learning to take place (Brown & Duguid, 1991; Gherardi, 2011). We believe that design games have previously unidentified potential in supporting this development of practices in organizations.

Activity theory, a strand of practice theory, posits that the unit of analysis when studying practice knowledge should be the activity of a group, i.e. a community of practice. One of the key proponents of modern activity theory has been Yrjö Engeström (1987), who introduced expansive learning as a model for understanding how practices are developed over time by their members. According to expansive learning, the development of practices takes place when the members of a community identify contradictions in their collective activity and respond to the contradictions by reorganizing their activity through identifiable steps (Figure 1). The resulting transformation of the activity represents a change in the practice, and as such organizational learning.

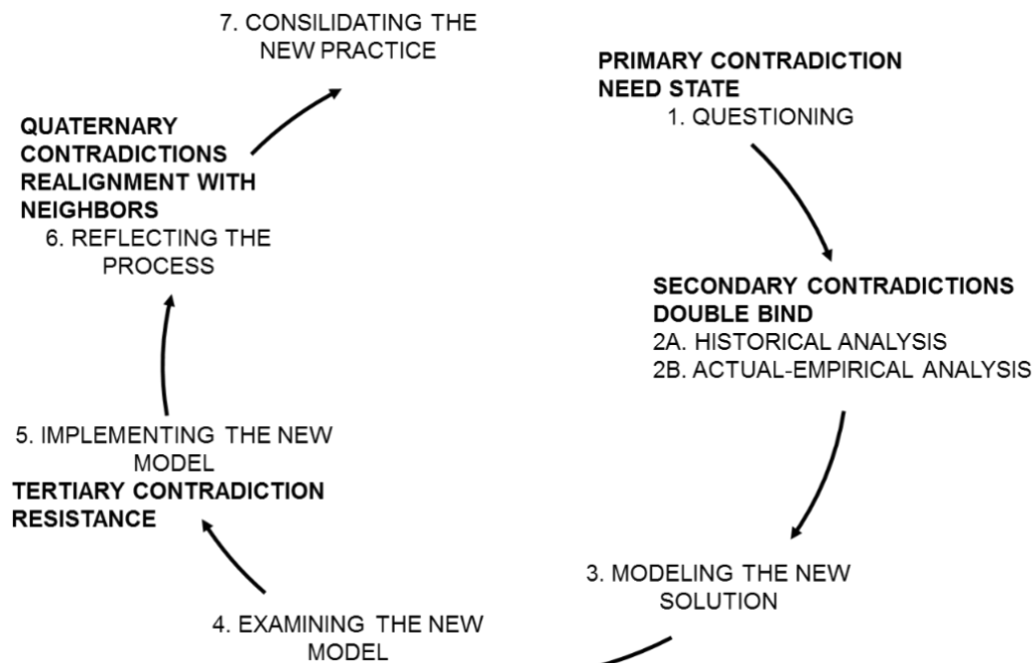


Figure 1 – The expansive learning cycle by Engeström (1999).

In order to transform their activity, members of a community of practice has to overcome four key contradictions associated in expansive learning – although all steps do not necessarily appear in all instances and the steps may appear in a different order (Engeström, 1999). First, when the members identify some fault in their existing practice, they face a *primary contradiction* in which the existing stable practice shifts into an unarticulated *need state* which motivates further inquiry. Through questioning the existing practice, the community faces a *secondary contradiction*, the *double bind* of finding fault in the existing practice without having a new practice to replace it with. As the members begin to construct and test new solutions, the community must overcome the *tertiary contradiction* of matching the new elements of their local practice with the new. As the tertiary contradiction is reconciled, the old local practice is gradually replaced by the new one, and the new practice begins to settle in place. As the new practice is being implemented, neighbouring practices need to be realigned to overcome the *quaternary contradiction* of change in the interconnected practices. (Miettinen & Virkkunen, 2005).

For example, Engeström (2001) describes expansive learning in the complex environment of a children's hospital where different units and departments addressed challenges in working with children with multiple illnesses. First, practitioners *questioned* their current practices by voicing challenges in sharing patient information. Second, the questioning lead to deepening *analyses* which produced more articulated questions regarding the challenges in fragmented patient information and lack of physician in charge. Third, the practitioners collaboratively *modelled* solutions, the first of which were rejected as a part of *examining* the new model. After creating and examining a second model, it's *implementation* was started, setting off its own process of negotiation and alignment. (Engeström, 2001).

While creativity has not been central in the prior research of expansive learning, research in the role of playfulness in creativity in the workplace gives us some guidelines for evaluating the role of creativity in expansive learning. Mainemelis and Ronson (2006) have studied the role of playfulness in fostering creativity in organizations, and named five creativity-relevant cognitive processes supported by play: *problem framing*, *divergent thinking*, *mental transformations*, *practice with alternative solutions*, and *evaluative ability*.

We propose that the creativity-relevant cognitive processes may support overcoming the contradictions in expansive learning. *Problem framing* is the act of deciding how a problem will be solved – a specific formulation of a problem will most often lend itself to some specific solution, and the ability to reframe problems often leads to undiscovered solutions. This is

why design thinking, in contrast, considers problem framing to be the act of understanding the problem from one or more specific perspectives (Dorst, 2011). When challenges are brought into play, the flexible and associative attitude in play encourages the recontextualization of old problems, allowing people to defamiliarize themselves from the known solutions to the existing problems, and instead find new problems and new solutions that make sense in the flexible reality of play. (Mainemelis & Ronson, 2006) This ability to find alternative possibilities in existing formulations of activity may facilitate the identification of contradictions in current practices and to identify the *need-state* that will trigger expansive learning.

*Divergent thinking* and *mental transformations* are cognitive processes that generate novelty in different ways: while divergent thinking focuses on generating variety of output from the same source in terms of number, variety and breadth, mental transformations generate newness by reconfiguring existing knowledge. Both forms of ideation are plentiful in play in the form association, combination, metaphoric reinterpretation, analogical thinking and similar reconceptualization (Mainemelis & Ronson, 2006). These sources of novelty are important in overcoming the secondary contradiction of expansive learning, the *double bind* of understanding the fault of the current practice without yet having an alternative solution.

*Practice with alternative solutions* means that decisions are not made prematurely but instead multiple possibilities are entertained simultaneously until they have been given due consideration. The flexible reality and lack of external pressure in play means that alternatives can be considered and come back to without the need to decrease uncertainty or appear decisive. By allowing for multiple answers, play also fosters evaluative ability, and elements from multiple answers can be combined. (Mainemelis & Ronson, 2006) The ability of play to sustain parallel and even contradictory propositions in play gives participants a possibility to better *examine the new model* for a practice before it is implemented, and take steps back to iteratively model and evaluate multiple alternatives.

Based on the understanding of expansive learning as the development of practices and some guidelines on how playfulness might support they points in the expansive learning process, we next describe design games as a potential solution for creating spaces and activities for the playful development of practices.

## Design games, from a learning perspective

Design games are a group of games more defined by similarities in use than common factors in their design (Agger Eriksen, Brandt, Mattelmäki, & Vaajakallio, 2014). They can be for example card games, board games, or role-plays, but typically have at least some physical components (Brandt, 2006). The main goal of such games is to foster innovation and reflection through play (Hannula & Harviainen, 2016). The rules of the game function as not just limits, but also facilitators for inspiration, tools for giving all participants equal voices, and ways for keeping the involved stakeholders focused on the task at hand (Brandt, 2006; Hannula & Irrmann, 2016 Klapztein & Cipolla, 2016). They have traditionally been used more in the fuzzy front end of service design, but are increasingly seeing use in also other contexts, from strategy work to organizational applications for knowledge transfer (Harviainen, Vaajakallio, & Sproedt, 2016; Luoju & Harviainen, 2016; Sproedt & Boer, 2011).

To describe the use of design games, we use the Play framework by Kirsikka Vaajakallio (2012) in which design games are simultaneously viewed from three points of view (Table 1). For the designer, the design game is a tool for gathering input from several participants in an organized manner. For the player, the game is a mind-set that allows associative and representational thinking across space and time. Finally, for the designer of a particular design game, the game forms a structure for creating materials and roles for the participants (Vaajakallio, 2012; Vaajakallio & Mattelmäki, 2014).

Table 1 – Play framework, adapted from Vaajakallio and Mattelmäki (2014)

<b>Design</b> Practical application context with its objectives and characteristics	<b>Designer's perspective:</b> <b>design games as a tool</b> <ul style="list-style-type: none"> <li>• Organizing dialogue – combining purposes of instrument, competence and an agenda</li> <li>• Supporting empathic understanding – combining subjective and collective interpretations</li> <li>• Gaining several contributions – designing with users and other stakeholders building on direct and indirect user involvement</li> </ul>
<b>Games</b> Play-qualities drawn from design and games, play and performance	<b>Player's perspective:</b> <b>design games as a mindset</b> <ul style="list-style-type: none"> <li>• Transporting participants into another world – a magic circle as physical and ideal playground</li> <li>• Proceeding within its own boundaries of time and space – symbolic time for moving between past, current and future</li> <li>• Creating positive tension by providing boundaries while being open for new interpretations – action governed by rules</li> </ul>
	<b>Game designer's perspective:</b> <b>design games as a structure</b> <ul style="list-style-type: none"> <li>• Supporting idea generation, collaboration and interplay between now and the future by game materials, which work as: visual stimulus for exploring alternatives, boundary object, visual reference for shared focus of attention, documentation, reminder, illustration of progress and as visual indicator of being in a special game world</li> <li>• Utilizing performance roles appointed by the game</li> </ul>

Playfulness and creativity are central to design games. In the design game research of Kirsikka Vaajakallio (2012), the magic circle of play (Huizinga, 1949) is an essential part of design games because design games transport players into an ideal playground in which time moves symbolically backwards and forwards, and new connections and interpretations can be created within the constraints of the game. Players are afforded much freedom in interpreting material artefacts and explore diverse possible worlds through open-ended and ambiguous tasks (Vaajakallio & Mattelmäki, 2014).

Despite of their shared elements with games in general, design games are a kind of game where players do not compete against one another, game rules are open to interpretation, and game pieces have intentionally vague meanings (Vaajakallio & Mattelmäki, 2014). This provides the players with opportunities to project their own meaning onto the game material in a process of negotiating a shared language (Vaajakallio & Mattelmäki, 2014). There is, however, a tension in the game of whether the players can overcome the design challenge and what will the eventual product of the game be.

The Play framework describes that for the designer utilizing design games, the playfulness and creativity in design games exist in service to the design process. Design games are employed to organize dialogue and collect contributions from multiple participants, while maintaining close ties to stakeholder groups (Vaajakallio & Mattelmäki, 2014). They are very efficient in fostering collaboration, cooperation, and co-design (Brandt & Messeter, 2004). Design games often also promote exploration at the expense of negotiation or compromise (Brandt, Messeter, & Binder, 2008). Based on accounts from projects in which design games were used at specific points to involve stakeholders, design games excel at building up player capabilities but hold ultimate agency with the designer who keeps ownership of the project surrounding the design game encounter.



We propose that the potential of design games as an organizational co-development intervention has been downplayed: an organization does not need to have a design project underway to use the explorative qualities that design games enable. Especially the design games applied in service design have been used to interrupt routines and focus on building new understanding about a particular context (Kaario et al., 2009). Developing design games to better empower the players in applying creative thinking to their own problems resonates with views that the evolving role of the designer in general involves providing scaffolds for the creativity of “everyday people” (Sanders, 2006).

To bridge the gap between the theoretical understanding of expansive learning in organizations and the use of design games to support reflection which would trigger expansive learning, we aim to conduct empirical research to identify how design games encourage creative discussions. In the following section, we describe our preliminary study of *Topaasia*, a design game created for such a purpose.

## Case Topaasia

We examine the learning process in the context of an organizational learning game, *Topaasia* (Figure 2), earlier studied by the authors (Hannula & Harviainen, in press). It is designed and sold by a Finnish company Gälliwashere, which advertises the game as a “consultancy without a consultant”. This is because it can be played without a facilitator. From the point of view of service design, *Topaasia* is clearly a design game (as per e.g., Vaajakallio & Mattelmäki, 2014), even as neither of its creators is a service designer. *Topaasia* games combine a dialogue for developing practices (as per Hannula & Harviainen, 2016) with simple game rules that structure the discussion on shared topics and provide some competitiveness to the interaction. *Topaasia* is intended to be played in multiple short sessions over a longer period for continuous reflection. For discussions around different topics, decks such as “Sales”, “Projects” and “Agility” are available, which follow the same rules with different cards. The creators of *Topaasia* constantly produce new decks and improve old ones through both experimentation and customer interaction.



Figure 2 – A *Topaasia* deck, package and hourglass timer. (Promotional picture, Gälliwashere.)

In *Topaasia*, players draw cards from the deck they are using to form a hand of four cards. Each deck has 52 cards, each with a suit corresponding to a theme of development within

the deck, as well as a keyword which refers to a specific item of within that theme. Each round begins by drawing a perspective such as “our strongest” or “our hardest” after which each player selects a card from their hand that best fits the perspective. The played cards are shuffled to hide which player chose which card and then revealed for everyone to see (Figure 3). Through discussion, the players together choose the most important card to fit the perspective within a time limit enforced by an hourglass included with the game. Finally, the player whose card was selected is revealed, that player gets a point (if scoring is used) and the group moves to a new perspective. One game takes from 30 to 45 minutes of play, and can optimally accommodate four to eight players.



Figure 3 – Actual play: players discuss which of the four cards to choose. (*Gälliwashere*.)

To facilitate a dialogue on developing practices, the game uses cards to act as shared points of reference. First, the text on the cards act as a trigger for the player to consider the potential of each card in their hand and choose the most important out of those cards (Hannula & Harviainen, in press). Second, once each player has played their most important topic, the collective best cards are discussed without going into the details of how each challenge might be solved. In this way, many topics get considered each turn but the players are forced by the game rules to compare the topics and come to a shared conclusion on the most important topics for development.

Because of the randomisation, some important subjects may not come up for discussion, simply because the card of that topic was not in anyone’s hand at the right time. *Gälliwashere* therefore recommends that for best results, the game should be played multiple times at intervals of e.g., once per month.

A key feature of *Topaasia* during this research was the explicit goal of getting the most points by playing cards that will be picked the best by the group. Because of this competition, the game might be perceived to be more engaging than design games without competitive elements or explicit winners (such as *ATLAS*, documented in Hannula & Irrmann, 2016). However, the competition created an anticipatory mechanic to the game: if players wanted to win, they might play cards that are likely to score a round of the game, instead of choosing subjects based on their importance for the organization. Because of this possible problem, later editions of the game turned formal scoring into an optional mechanic. Nevertheless, there too the presence of “whose idea was picked” remains strong.

## Empirical study

Examining any sort of game-based organizational learning is difficult, because of the number of factors involved (Klabbers, 2003b). No commonly shared theory of game-based learning exists and the field therefore often relies on case study based extrapolation (Harviainen, Lainema, & Saarinen, 2014). We therefore set out to study a game used for the express purpose of organizational learning and knowledge co-creation, using data provided by the game's players through a summary system. In addition, we reviewed customer stories on the use of *Topaasia*, which Gälliwashere presents on their website, and looked for direct expressions of game-based learning experiences. From these, we formed a preliminary set of data, used as the basis of testing whether the theory of expansive learning would answer questions about play, learning, and time-efficiency experiences with *Topaasia*.

As noted by Ketokivi and Choi (2014), case studies are useful for three different but connected purposes: theory generation, theory testing and theory elaboration. In this paper, we focus on initial testing as well the directions for potential elaboration, through the presentation of the tested framework, expansive learning. Case research may be descriptive, exploratory, or explanatory (Eisenhardt, 1989; Yin, 2009). Here, we use it to describe time-efficiency experiences as well as to develop and initially test our theory.

The data used in this paper comes from Gälliwashere. Their players have access to a summary/feedback system, *Kiteyttäjä*. It provides the designers with use and evaluation data, while summarizing the results of each session for the players, and sends reminders for e.g., next play session and for putting the results of the play into actual use in the organization. The system has been altered over time, as have the decks. We have therefore focused our analysis in this paper to only the set of five questions that was used in all versions. It is presented in Table 2.

Table 2 – Core feedback questions of *Topaasia* (Hannula & Harviainen, in press).

How useful was the session, compared to the time you used? (1=No benefit compared to time; 3= Equally useful compared to time [as other methods]; 5=Produced significantly more value compared to time.)
How well was the play session organized on a scale of 1-5, with 5 being the best?
Do you have suggestions on how the session could have been improved?
What functioned well in the session?
Other feedback?

At the time of writing this article, about 500 *Topaasia* decks have been sold, to over 100 companies. We do not have precise numbers on actual use, because using the feedback system, *Kiteyttäjä*, is voluntary. It furthermore has no user satisfaction marker right now, so we have relied on older sets of data, as well as written statements by Gälliwashere's clients. A total of 53 *Kiteyttäjä* answers were received from play sessions with the older version (January 1, 2015 to May 12, 2016), and 54 with a new version (May 13, 2016 to August 19, 2016). We next analyse those results.

## Results

*Kiteyttäjä* requires that people answer together in teams, through group consensus, and not as individuals. Two central findings could be determined from the data set, the first of which was also analysed by the authors in an earlier work (Hannula & Harviainen, in press), and is re-iterated here for further discussion in a new context: Numerical scales pointed to the perception that the game was consistently found to be useful and time-effective. Average time-effectiveness ratio was in the older *Kiteyttäjä* 3.74 (n=53), and 3.78 (n=54) in the new one. The most common answer was 4, "somewhat more time-effective than other methods" (n=66), with 10 respondents considering it "extremely useful" (rating 5). This means that 71% of the respondents considered *Topaasia* a superior learning tool, compared to others.



28 respondents, in turn, found *Topaasia* as useful as other methods they had tried, i.e., gave it a rating of 3. No ratings of 1 (the lowest) were in either data set, and they had only one rating of 2 each. Later sessions scored significantly higher than the early ones. This strongly suggests that Gälliwashere's iterative approach to constantly improve the game and its rules is working. The results also suggest that regardless of whether actual learning took place, the players thought they, and thus the organization, was learning.



Figure 4 – Actual play: discussion on a difficult topic, with several time-extension “Joker” cards in use. (Gälliwashere.)

The new data - player stories, provided on the company website (Gälliwashere: Asiakastarinat) and other media - expand on the experience of time-efficiency and add points of learning. For example, corporate client Johanna Pystynen of the company *Vincit* states that they regularly use *Topaasia* at the start of projects.

*The game eases the team's discussions and guides participants to talk about the project's practices, praxis, challenges as well as successes. It grants a way to bring up also difficult subjects more easily. In addition, every member of the team gets an equal say on things during play. Feedback from our employees has been positive and the [game-based] project starts have been considered useful almost every time." (Johanna Pystynen, translation by 2<sup>nd</sup> Author).*

Saana Rossi, from the same company, also described the reception of the game positively.

*The game has been a well-liked, functional, and efficient way to close in on risks and areas of development. It forces people to participate in open discussion, and enables that discussion. It also brings forth things from the perspectives of both risks and successes, in ways that one would not otherwise think of. The play sessions have been solution-oriented: we focus on the essential and think of the steps we need to take to proceed. (Saana Rossi, translation by 2<sup>nd</sup> Author).*

Other player-client stories included successfully changing the structure of sales meetings, increased focus on discussion during play, and participants engaging in much more active and productive discussions facilitated by the game's rules.

All customer testimonials feature elements of expansive organizational learning, facilitated through shared, fruitful dialogue made possible by the game as a boundary object (Bergman, Lyytinen, & Mark, 2007; Tsoukas, 2009). We propose that examining the *Topaasia* games

from the point of view of expansive learning provides an opportunity to address an important issue of employee empowerment and utilization of creativity in organizations. It must be noted, however, that *Topaasia* proved to be backcasting-oriented, i.e. based on revisiting past experiences rather than designing possible futures like in the design games described by Vaajakallio and Mattelmäki (2014). This is not necessarily a bad thing: the identification of existing challenges, risks and potentials through the examination of current understanding is an important part of organizational learning that can be facilitated through organizational gaming. From this viewpoint, *Topaasia* games provide a crucial insight on the current state of the organizations in which they are played.

## Conclusions

The main goal of a design game, we believe, is to foster creative discourse on an equal basis that takes many stakeholders into account. User responses from *Topaasia* very strongly point to this taking place. With players reporting time-efficiency, commitment to play and dialogue, and hint at actual implementation of the found ideas, we can perceive expansive learning processes taking place. Making sure that the dialogues are productive and positive is not easy, but it appears that design gaming can make people share, rather than hoard, what they know, and to appreciate ideas brought forth by others.

*Topaasia* appears to work as a productive scaffold for knowledge creation. Like many other good design games, it contains its own debriefing and assessment to some extent, as the play itself is a form of reflection (As per Hannula & Harviainen, 2016). By playing, participants have access to each other's tacit knowledge and emerging new insights. They may also be able to together locate problems and advantages that would otherwise not be found, as the written responses especially noted. They furthermore make their players see time spent on them as more effective, and thus more easily contributed, a factor known to increase learning through time-on-task (Landers & Landers, 2014). Their playful nature, in turn, makes people more motivated to participate, shields them from social repercussions of critique, and enables the sharing of temporal propositions that are necessary for efficient strategizing (Apter, 1991; Vesa, Hamari, Harviainen, & Warmelink, 2017). The expansive learning potential of these kinds of games is in providing methods for interrupting the routines of organizations by allowing players to "bring in" their existing practices and contradictions and setting up a space in which the players feel at liberty to engage in playful examination of the existing practices and modelling new solutions.

A central question for further research remains: even as players and organizations using *Topaasia* found the use of the game to be efficient and useful, we do not yet have concrete evidence of their efficacy. A gap exists between idea generation and actual implementation (Vaajakallio, 2012). To foster functional design, the game's processes have to reflect the external world, and in turn provide results for that work (Klabbers, 2003a). While no direct data exists yet, it appears that *Topaasia* follows the first criterion because it brings existing processes in organizations into play. The next step is to analyse whether the insights created or found through play become actual practices and developments.

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The authors have no connection to Gälliwashere excluding this research project. Pictures used with permission from Gälliwashere.

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# Quasi-participatory service design in organizational context: A case study

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## Abstract

Service Design is about creating a desirable end to end experience for service-users. Participatory design involving service-users and stakeholders is an established paradigm in service design. There are constraints as well as opportunities while designing for organizational services. The Participatory design paradigm is appropriate in this context, however, the traditional participatory design methods have limitations and need to be adapted to overcome the constraints and leverage the enablers. The suggested approach comprises the aspects: a mix of tacit and explicit knowledge, synchronous and asynchronous working, full and partial participation, and a mix of 'lite' and in-depth application of design methods, and leveraging the knowledge externalization techniques. This service design case study is about high-touch hiring and joining experience of new entrants in a large IT organization. The outcomes confirm the benefits of the proposed approach suggesting its appropriateness for designing services within organizational context. It also offers the promise of wide applicability.

**KEYWORDS:** participatory design, service design, organizational services, tacit knowledge, employee onboarding, quasi-participatory design

## Introduction

Ideas such as 'collaboration', 'working together', 'co-design', and 'participatory design' are widely discussed in the design field. In the era of specialized knowledge workers, it is imperative that employees of organizations master the art of collaboration to succeed in today's highly dynamic and networked world. Collaboration is essential and beneficial, but it has its own challenges such as conflict and disagreement in the team, business functions wrangling, snail-paced decision-making, and bureaucratic tangles. Unless these challenges are overcome, collaboration is likely to fail (Weiss & Hughes, 2005). For successful collaboration which goes beyond cooperation or teamwork, the process must ensure that every contributor's voice is heard and acknowledged. The elements of cooperation are knowledge

sharing and performing assigned tasks, but it might not imply generative interactions, debate, and working towards common goals (Campbell, 2011). Innovation culture can be nurtured through effective collaboration of employees (Kelly & Schaefer, 2014). Trust, communication, a shared vision and a purpose are critical for effective collaboration. Participatory Design hinges on successful collaboration among experts from diverse fields to come up with design outcomes that are useful, usable, and innovative. Involving not only primary end-users but also secondary end-users and other stakeholders was found to be useful in participatory service design (Korpela, et al., 1998).

Services are multi-dimensional, complex, intangible, and heterogeneous in nature. Hence there is a need to include various stakeholders who have a stake in the success of the design outcomes. These stakeholders are likely to have different kinds of knowledge and expertise which could strengthen the multidisciplinary collaboration. To design user-centric services, designers need to understand the expectations and needs of the users; keeping in mind the service context and environment. Different stakeholders also enrich the understanding of service situation. As a result, participatory design is gaining ground across domains (Sangiorgi & Clark, 2004).

## Organizational Context and Organizational Services

Increasingly the organizations are turning to in-house service design teams for business purposes and for internal services (Blomkvist, 2015) (Mrad, Vandertuyn, & Mahraj, 2015) (live|work, 2016). Service design within large organizations can however be markedly different compared to design done through external design consultancies (Atvur, Rau, & Wilson, 2015) (Marlovits, Fischl, & Mang, 2015). The organizational conditions can either aid or hamper traditional design approaches (live|work, 2016). Design teams are generally aware of organizational structures, culture, politics (Blomkvist, 2015), informal opinions, and sometimes restricted knowledge. The design teams may face challenges of support and investment from leadership (Mäkijärvi, 2015; Katz, 2015), and lack of resources or competency skills (Katz, 2015) (Beyerle & Wend, 2015). Organizational structures lead to segregation and ‘department’ perspectives or silos which makes sustained collaboration difficult (Atvur, Rau, & Wilson, 2015). While recognising the constraints these factors impose, they can be leveraged as well to support the design activity. For instance, a team can build long-term relationships with employees and create a knowledge pool (Mrad, Vandertuyn, & Mahraj, 2015).

The design of organizational services could be as challenging as that of services designed for clients. However, human centric, thoughtful design of organizational services aimed at employees often receives inadequate attention leading to impaired service experience and loss of morale. There is a direct correlation between positive employee attitude and an organization’s business performance (Koys, 2001). Also, the employees can be co-opted as responsible organizational citizens and offered opportunities to contribute to initiatives, including in designing organizational services, through voluntary participation (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). High-touch services that require empathy towards end-users might be particularly benefited by fostering a sense of ‘organizational citizenship’ among the stakeholders and this could lead to improved quality of organizational services.

## Participatory Service Design

There is ample evidence in literature of the benefits of participatory design in general as well as in organizational contexts. Design concepts generated by participatory design teams are more innovative and useful than those generated by design professionals alone (Trischler, Pervan, Kelly, & Scott, 2017). End user as well as stakeholder participation in service design helps in gaining better knowledge of users' needs, generating out-of-box ideas, improved focus on users' needs, generation of innovative solutions that enhance service experience, and long-term benefits such as more successful innovations, increased loyalty of users and higher user satisfaction (Steen, Manschot, & De Koning, 2011). One of the keys to success in designing internal services could be the effective use of the rich tacit knowledge that stakeholders have about the end-users and the service context. Ehn (1988) suggested that participatory design attempts to steer a course 'between tradition and transcendence' that is, between participants' tacit knowledge and designers' more abstract, analytical knowledge. Therefore, participatory design methods should appropriately leverage the stakeholders' tacit knowledge and designers' explicit knowledge in a productive synthesis (Spinuzzi, 2005). The departmental and hierarchical structures of large organizations lead to, therefore, narrow perspectives or incomplete understanding of a problem (Atvur, Rau, & Wilson, 2015). A key aim of participation of multi-disciplinary stakeholders in organizational service design should therefore be to bring diverse and important perspectives together to solve complex service design problem.

The stakeholders could be motivated to participate in a design project by acknowledging the value of their skills, experience and effort towards the design outcomes (Kensing & Blomberg, 1998). It is challenging though to sustain their interest and enthusiastic participation throughout the service design life cycle. Therefore, the participants need to be selected carefully, taking into account their motivations for participation and scope of participation (Kensing & Blomberg, 1998). Further, the mix should be such as to leverage the appropriate tacit knowledge spread among various stakeholders. However, practical problems such as unavailability of team members throughout the design process, multi-location teams, and effort required in coordination remain. Participatory design takes a good deal of time, resources, and institutional commitment (Spinuzzi, 2005). The stakeholders in an organization have their own mainstream responsibilities and they might be spread across different locations (Keller, 2014). They often have business demands and unanticipated obligations which lead to interruptions or limited availability. The coordination of participatory work also requires considerable effort and time. This could lead to delays in project completion. These limitations might adversely affect the progress of the project and ability to meet the goals of design. Participatory service design studies, have exhibited challenges such as time crunch and logistical difficulties (Bowen, et al., 2013), which could get aggravated if the team is geographically dispersed; a common situation in large organizations. Learning and collaboration among stakeholders from different 'communities of practice' transcending the perspectives and paradigms of their fields morphing into 'community of interest', that is, those having shared design outcome objectives is a complex and multi-faceted phenomenon (Fischer G. , 2001). Spatial (across distance), temporal (across time), conceptual (across different communities of practice, and technological barriers prevent effective collaborative design and formation of communities of interest. (Fischer G. , 2004). A participatory design method must address these challenges.

The team had experienced such challenges previously while designing services in the organizational context using traditional participatory design process (Mahamuni R. , Khambete, Mantry, Das, & Verghese, 2016) (Khambete, et al., 2015). We discuss some of them and partial solutions which were tried out. To begin with, there was often a demand to show quick progress. A partial solution was to blend an agile approach, multiple iterations, and stakeholder workshops. The iterations also helped fortify the learning of design methods by the stakeholders, who had no previous exposure to designing. Since the participants had diverse backgrounds, skill levels, and experience levels, it was necessary to arrive at a shared vocabulary. A Pattern Language for Service Design (Khambete P. , 2013) was used to address this need. We also found early evidence that flexibility in the mode of working

(synchronous, asynchronous, sequential, individually, and so on.) along with the use of the externalised artefacts as mediators helped establish continuity across sessions, and effective collaboration leading to the overall progress. A few members of the participatory design team were not able to participate adequately due to reasons such as mainstream work pressure, change in work priorities and context change. This led to discontinuity and interruption of the functioning of the participatory team. Sometimes new members were added to the team as their replacement which led to considerable additional effort to bring everyone on the same page and to ensure the quality of the engagement, their motivation and enablement to contribute. There were occasions where insight synthesis took a lot more time than expected. All these had direct or indirect impact on the time and effort required to design the chosen services.

Along with the challenges, organizational context also provides opportunities such as the ease in accessing the stakeholders and having participatory team members that are themselves also service-users of some services and providers of others. The latter offers a unique opportunity of a well-rounded set of perspectives. These opportunities are utilized in the proposed approach, which is holistic and brings together suggestions from literature and previous experiences of successful partial solutions.

## Proposed Approach

To overcome these challenges and keeping the benefits of the participatory design process intact, we used a modified participatory design approach, the elements of which are explained in table 1.

Challenges	Approach elements
Time availability, multi-location	Team members working together and separately
Time availability, multi-location	Synchronous and asynchronous work
Time availability, multi-location	Team members working concurrently but from different locations
Time availability, multi-location	Facility of full or partial participation
Different kind of expertise and tacit knowledge, time availability	Distribution of work items to match the team member expertise and available time
Access to end-users, constraints on time available for user research	Enablement for leveraging tacit knowledge
Inadequacy of explicit knowledge due to constraints on time available for user research, triangulation of tacit and explicit knowledge	Synthesis of tacit and explicit knowledge through team interactions and consensus
Multi-location, fluid team, carrying forward the knowledge and common understanding throughout the design life cycle	Conversion of synthesized knowledge into shared artefacts
Multi-location, fluid team, quality of knowledge synthesis, solutions and artefacts	Planned face-to-face interactions at critical junctures

**Table 1 – Challenges and associated solution elements in proposed quasi-participatory design approach**

A similar approach was successfully used by Ajiboye and Ajitoni (2008) in participatory learning, where learners worked independently at their own pace and then met in groups to share the learnings. Similar to the collaboration aspect discussed in participatory design, computer-supported cooperative work (CSCW) focuses on supporting collaboration among spatially and geographically dispersed group involved in an activity, though keeping technology at its centre (Carstensen & Schmidt, 1999) (Johansen, 1988). Distributed

computing is another technological paradigm, in which a task is divided into multiple and each one of them is solved by one or more computer systems which interact with each other (Distributed computing). These different approaches in various fields give one the basis for proposed approach.

We refer to the proposed approach as quasi-participatory design as depicted in figure 1. This approach was validated in the context where stakeholders had rich tacit knowledge about service-users as described in the following section. In general, for organizational services, the service-users are its employees including the stakeholders. Also, stakeholders have regular and varied exposure to other employees which helps them to build tacit knowledge. These interactions are formal as well as informal, which help them build rich tacit understanding of service-users. As part of the service design team, the stakeholders' tacit knowledge can be uncovered through group processes and leveraged to draw insights which can inform design. In such situations, stakeholders also may come with their own biases and hence there is a need to triangulate the data with user research methods like observations, surveys and interviews.

The following section explains a service design case study in an organization, where quasi-participatory design approach was used. The study followed research through design methodology, which focuses on addressing a research problem, while also focusing on the end product of design (Godin & Mithra, 2014). We used this methodology to validate the proposed approach. In further section, we put forth actionable recommendations for service design in participatory manner.

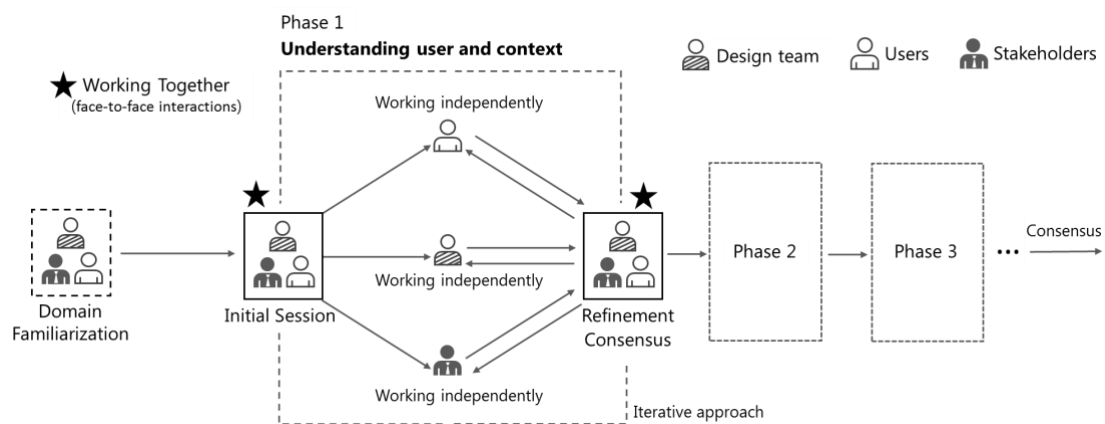


Figure 1 – Quasi-participatory Design Process

## Re-Designing the On-boarding Service

It is vital to create an impactful and desirable experience of joining an organization for the candidates going through the hiring and joining process. Research has shown that new employees form their attitudes and beliefs toward their organization very early in the job, which influence their decision to remain in the organization (Bauer & Green, 1994). It is important therefore to treat every new employee as a new 'customer' that the organization is prospecting and invest in building the relationship. Organizations should ensure that not only the new employees' expectations are met but the experience in the initiation in the organization is of high quality. Taking into account time, people, and costs incurred in hiring, onboarding and training the candidate, losing new entrants, particularly the experienced professionals, leads to high monetary losses, opportunity costs and could impact the morale. This acted as a key motivation for us to redesign the existing joining and onboarding service of a large IT organization with over 350,000 employees. The team believed that the effectiveness of the onboarding program can be enhanced significantly by framing it as a 'service' where new employees will be the customers. Such a reframing shifted the focus

from simply improving operational processes to addressing each component of the service, keeping the candidate's holistic experience as the central concern. To achieve this, the design team was formed comprising of 'customers' of this service that is, employees of the organization; service owners, that is, representatives from the talent acquisition group and the human resource management group. The key areas to focus upon were identified as – creating an appropriate mix of high-touch and technology-mediated hiring and joining experience for the candidate, helping them to get assimilated in the project teams in the initial period of one year after joining, thereby reducing the attrition of newly hired employees.

The stakeholders identified the hiring and onboarding phases as shown in figure 2. The brief activities associated with the phases are **Considering job change** – usually while employed at another company; **Exploring options** – including various employment platforms, social media and contacts; **Applying for a job** through the organization's career portal or other channels such as referral programs and emails; **Selection phase** –primarily, interviews of the accepted applicants; are scheduled and conducted; **Acceptance phase**–the candidate receives an offer letter, along with details about the job; **Joining preparation** –the candidate conveys the acceptance of the offer, and initiates arrangements such as providing authentic documentation, possibly for relocation, , and leaving the prior employment; **Onboarding**–the candidate joins the organization and attends induction sessions. This is followed by assignment to a project which has an 'Initial phase' in which necessary infrastructure and support is provided, a longer '**Assimilation phase**', and at the end of one year an event, celebratory **Joining anniversary**'.

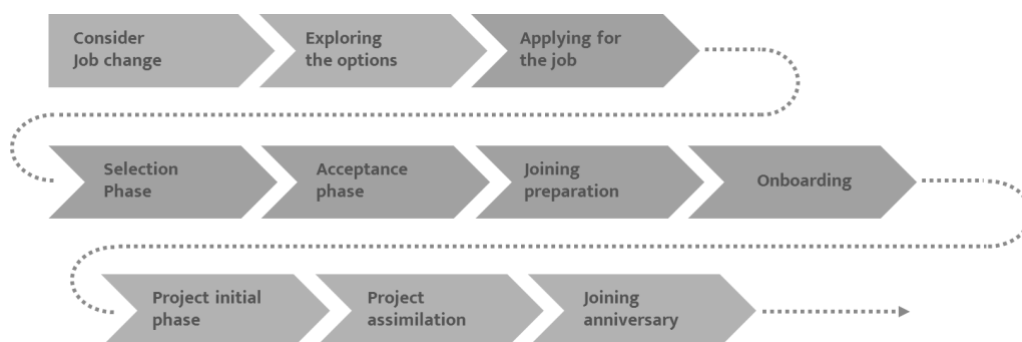


Figure 2 – Candidate journey from phase of considering the job change till joining anniversary

## Participants

The service-users included candidates and new employees that had joined through “lateral hiring” (that is, professionals with experience ranging from 2.5 years to 12 years) who participate in the hiring and joining process. The service providers included interviewers, recruiters, trainers, human resource teams, project managers and other employees of organization (who could be acquaintances of the service-users). The design team comprised service-users (employees at large), service owners (recruitment function and human resource management function), and people with technology background and Service Designers who acted as facilitators throughout the project. The participatory design team was spread across two different cities, but in the same time zone. Having stakeholders from different domains, different locations and who closely interact with service-users helped us understand and identify the improvement areas. Also, the team had rich tacit knowledge about the service-users due to their long period of engagement with the service uses as a part of their roles. This knowledge was leveraged whenever the service-users were inaccessible.

## Method

### Domain Familiarization

Members of the team lack understanding of others' work domains. Therefore, initially, the recruitment team sensitised the Service Designers about various aspects of experienced candidate recruitment and onboarding. The current challenges such as the gaps in communication, long process duration, in-process dropouts, employee satisfaction, and infant attrition were discussed. Subsequently, two workshops were held to familiarize all stakeholders with the service design concepts as well as to gel as a team. During these workshops, the explicit and tacit knowledge was captured and externalized in artefacts. The workshops enabled the stakeholders to collectively reframe the problem as 'service' and reach a consensus on the service experience goals and the data collection strategy. The participatory philosophy was followed from the earliest stages of this service design project.

### Data Collection – Understanding User and Context

The data collection was done through observations, survey, and informal and formal semi-structured interviews with key stakeholders. Service Designers attended one full day of induction sessions anonymously and created observation notes. They also informally discussed with the new employees during tea and lunch breaks to know their feelings about the induction programme. They also went through the process of form filling during the induction along with the new employees. To understand the issues faced by the new employees in the organization, two survey questionnaires were developed – one for understanding the issues in the hiring phase (spanning from candidates applying for the job till they join the organization) and another for the on-boarding phase (induction and training of two days after joining). The Service Designers' observations during the induction, along with tacit knowledge from other stakeholders, was the basis for the design and development of the survey questionnaire. Since the service-users (newly hired experienced professionals) were easily accessible during the two days of onboarding, the survey was administered at the end of second and last day of onboarding. Also, the organization has presence in several cities in India, the surveys were administered (ensuring anonymity) in two cities so as to know the differences, if any, in processes across cities. Care was taken so that both teams followed the predefined protocol to maintain the consistency and rigor of the process. The survey data was collected from 66 respondents altogether. The survey analysis pointed to several service design and execution related issues.

The team conducted in-depth semi-structured interviews of those who had joined the organization within last one year to know the details and nuances of the problem areas identified in the survey. The interviews were conducted with stakeholders as well. The interviews also probed to uncover behavioural traits of employees, based on their motivation, triggers and abilities (Fogg, 2009). Interviews were conducted in two Indian cities – Pune and Mumbai by two different teams of two or three members. Care was taken in this case as well that both team followed a predefined protocol to maintain the consistency and rigor of the process. Together, 23 formal and informal interviews were conducted spanning the representative cross-section of the stakeholders.

The collected survey data, audio recordings, and interview notes were analysed during subsequent workshops conducted by team, which resulted in identifying the key contexts, service encounters and personas. It helped us identify the negative as well as positive key scenarios in the process from user's perspective. We also understood various feelings like anxiety, apprehension, uncertainty which users go through, throughout the hiring and onboarding process.

To illustrate, we summarize some representative findings. We found that candidates as well as new employees used many informal channels to interact with each other. We also found that candidates had pre-set perceptions about large organizations, which generally led to certain expectations and allowances – for example, some candidates expected and accepted

the delays in responses from the company, though it caused anxieties. Another example was that candidates considered induction sessions as expected formalities in a large organization but were pleasantly surprised by socialization activities. We realised that it was important to understand the positive and negative preconceived perceptions about the organization the candidates might have. This will enable guiding the service design to leverage the former and counter the later.

*Various activities involved in the data collection such as observations, informal discussions, surveys, semi-structured interviews, data analysis and insight collection, were carried out following quasi-participatory approach, details of which are mentioned below in table 2.*

<b>Activity</b> (phase: understanding user and context)	<b>Primary responsibility</b> (Worked independently)	<b>Secondary responsibility</b> (Contributed in reviews and discussions)	<b>Tertiary involvement</b> (infrequent involvement on request)
Identification of data collection methods and schedule	Service Designers	Recruiters, HR Representatives	None
Observation during Onboarding	Service Designers	Recruiters, HR Representatives	Other stakeholders
Informal discussion with service-users	Service Designers	Recruiters, HR Representatives	Other stakeholders, Service-users
Understanding the Context	Recruiters, HR Representatives	Service Designers	Other stakeholders, service-users
Critical incidents	Recruiters, HR Representatives	Service designers (facilitating)	Service-users
Semi-structured interviews	Service-users	Service Designers	None
Survey design	Service Designers	Recruiters, HR Representatives	None
Survey administration	Service designers, Recruiters	None	Other stakeholders, Service-users
Analysis of survey and interviews	Service Designers	Recruiters, HR Representatives	None
Insights validation	Recruiters, HR Representatives	Service Designers	None

**Table 2 – Activities along with participatory team member responsibilities for ‘understanding user and context’ phase**

## Personas

Persona creation is a well-established step of user-centered design process that helps designers to build empathy and identify with the service-users. In contrast to the conventional persona creation based on rigorous immersive data, the team significantly leveraged the tacit knowledge of the concerned stakeholders and created concise personas. Concise personas are similar to an assumption personas, ad-hoc personas created on the basis of tacit knowledge, but with established representativeness. To create the concise personas, differentiating characteristics of the service users and the possible service-user segments were identified. Then four to five concise personas were created per segment, using the tacit knowledge of the team which was augmented with insights from observations, survey results and interviews. The representativeness of these personas was established by



validation using the paired comparison method. The most representative personas per segment were then detailed out and further refined with inputs from service-users and stakeholders. These personas were used as primary personas throughout the design study.

*While service-user segments were formed in the initial discussion within group, the initial versions of brief personas were developed by the team offline. The team then came together and through consensus finalized the brief personas. This was then subsequently validated by the team with actual service-users. In a similar manner, detailed personas were created and refined.*



Figure 3 – Persona evolution from initial idea to Rapid prototype to detailed persona

## Customer Journey Maps

As shown in figure 2, there are 10 phases in a candidate's life time journey, where this study focused on the 'applying for the job' phase till the 'on-boarding' phase. The early insights received from the 'understanding the user and context' step, helped to define these stages, where the tacit knowledge available in the team played a very crucial role. As a part of the CJM, the team captured the service-user and business intentions along with the service-user information such as feelings, doing, actions, decisions taken, and resources available.

*The team arrived at the CJM template considering the various aspects through consensus, but the Service Designers in the team played a vital role in it. The team members then decided to work on the phases independently. The team utilized the available tacit knowledge along with the insights from previous step of 'understanding the user and context'. The CJM was progressively evolved over a period of time within team discussions.*

## Service Blueprinting

The team used the technique of service blueprinting to understand and map how the current service operates. Due to limited availability of stakeholders, it was not possible to understand the whole service process (including various encounters, touch points, spanning across various stages) and lay it down in a blue print form in a single day workshop. Hence the team initially had interview-like discussions with the stakeholders and jotted notes. The stakeholders too noted areas where they had doubts about the process and reverted later after independent discussions with their teams. The Service Designers used the notes to independently sketch a first draft of the blue print. These sketches were discussed in the next meeting with the stakeholders and refined with their inputs. The designers then created a detailed service blueprint per stage of the service. Wherever the team had doubts, due to the absence of services users and stakeholders, they annotated the blueprints and listed the set of doubts. These doubts were discussed over email and in further meetings with the stakeholders.

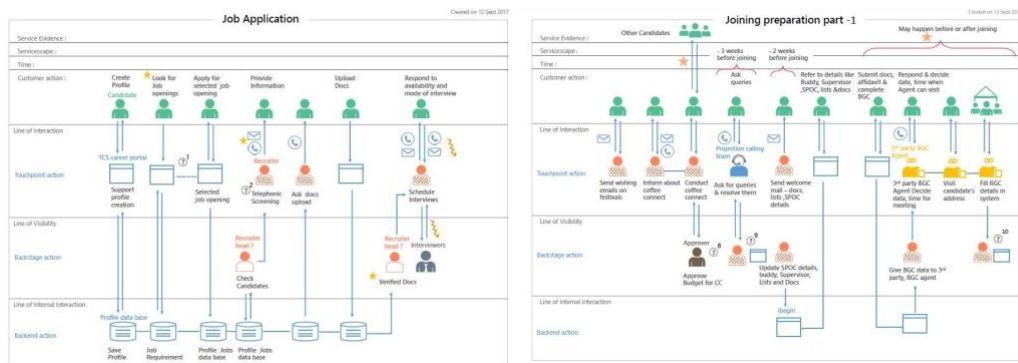


Figure 4 – Service Blueprint for two phases

*Service blueprinting being a new concept for the stakeholders, they contributed mainly in terms of knowhow and helped refining the blueprint iteratively. The service blueprints were mainly created by the Designers with the help of other team members. After the initial version, all the team members got hold of service blueprints and started contributing proactively.*

## Idea Generation

After mapping each phase as a blueprint, the team also annotated the blueprint with insights and ideas using coloured sticky notes. Visualizations of the process in terms of blueprints helped the Service Designers to generate new ideas. Having tacit knowledge about users' expectations and needs, the painful parts of the process and service breakdown points were identified, which again led to some more ideas. While creating blueprints, the Service Designers jotted down the questions and doubts wherever they did not have visibility of what happens in the current service. Design themes were also identified during blueprint creation. Before the next discussion amongst the Service Designers and the stakeholders, a list of questions was sent to the stakeholders so that they can collect details on those if they are not already aware of the facts. Then during the team discussion, the blueprints were discussed and enhanced as per the clarifications to the questions put up earlier.

Besides service blueprinting, the team also used other ideation techniques for inspiration. Some of the significant ideas were also explained to the stakeholders, which helped in maintaining their interest in the project.



Figure 5 – Phase wise ideation and idea clustering

## Service Prototyping

All the ideas for the whole user journey were represented in the form of sketches, to give an overall view of future service. The Storyboarding method was used to illustrate the future scenarios with the key ideas. The Service Designers also created a puppet-show like video to depict the selection phase of the future service.



Figure 6 – Sample storyboard

## Proposed Actionable Recommendations

As explained earlier, through research through design methodology, we observed during this case study how the proposed quasi-participatory design approach unfolded and was effective. We believe that there is a possibility of its wider applicability. We suggest following this approach will improve the overall effectiveness of the participatory service design process, particularly when the teams face the constraints we have discussed (for example, time and resources, balancing the demands of job responsibilities and participation ...). Following are some of the proposed actionable recommendations.

### 1. Working independently and working together iteratively:

Cross-functional group stakeholders are the domain experts, who leverage their knowledge to contribute to different aspects of the design project. One of the challenges identified was to get them together all the time, throughout the project duration as they have their own work responsibilities. A way out is participation that happen in stages, where at times teams work together synchronously at one place and at other times they work concurrently but asynchronously, followed by review and consolidation, improving upon each other's outcomes. The Service Designers could also gather findings after the 'together' sessions, improve, and later meet with stakeholders again to refine further. The stakeholder representatives in the team, on the other hand could be tasked with, for instance filling gaps in knowledge in their respective spheres and evaluating in-progress concepts. Iterations of such asynchronous and synchronous working seem to be more appropriate to overcome to the challenges to effective participation by adapting to and working within the constraints of time and distance to produce quality outcomes. Another significant benefit could be that the team members will be motivated to participate throughout the project as it enables them to fit the project work in their other work commitments. In this way, one of the core principles of participatory design, that people have a basic right of autonomy or working in their own way (Simonsen & Robertson, 2012) is adhered to without compromising the benefits of collective wisdom.

### 2. Externalizing artefacts for team collaboration across time and locations to enable distributed cognition:

In-process artefacts help in supporting each other's thought process by transferring and refining the commonly held understanding of the problem, ideas, concepts, and solutions (Mahamuni, Khambete, & Mokashi Punekar, 2017). These play a key role in participatory design team collaboration. While working independently, team members could create such artefacts to share their understanding and ideas in the team discussions, which will be the basis of the evolution of the artefacts. Tacit knowledge of stakeholders could also be made visible through the artefacts. The key to success is conscious efforts to build common understanding about the types and nature of the artefacts to be co-created and used in the design process (for example, Personas, Scenarios, Journey Maps, and so on.).

### **3. Adapting simplified versions of design methods for early engagement of stakeholders:**

Though stakeholder representatives including service-users might be introduced to design methods and concepts, being novices, they may have difficulties in using the design methods that could be perceived as complex. Therefore, in the initial stages of design, the Service Designers could use methods and artefacts that the stakeholders are familiar with, but adapted to align with the design methods. For example, instead of taking notes of the discussion as a document, each point can be noted on a sticky note. The collection of sticky notes could be used to build affinities. The Service Designers could also otherwise asynchronously build a “draft” affinity diagram which can be shared and discussed with the other team members, and refined together. This approach could give more clarity of the design method to the stakeholders and ensure they do not feel intimidated, and help in building mutual trust. It could also be an effective process of team building. Therefore, it could enable them to contribute and make an impact on the outcomes.

### **4. Collectively representing inaccessible service-users through available tacit knowledge:**

As service-users, especially external to the organization, may not be accessible every time for the design project activities, we can depend on rich tacit knowledge of participatory team and arrive at common understanding through deliberations and consensus. The emergence of trust in other team members and greater appreciation of their perspectives, an outcome of the process discussed earlier can support open and constructive deliberation and resolution of conflicts. Whenever a possibility arises, this understanding can be validated and refined to make it closer to the reality.

## **Conclusions and Directions for Future Work**

The primary objective of this study was to validate the quasi-participatory design approach in the form that was appropriate for the project at hand. Further, we aspired to validate this flavour of participatory design approach for designing organizational services by in-house design teams. We observed that individually and collectively the elements of the approach helped to overcome the adverse impact of the contextual challenges such as unavailability of stakeholders across all the design activities, sustained engagement, and effective collaboration. The well-coordinated way of working enabled the team members to be productive together as well as independently, take advantage of the mix of the synchronous as well as asynchronous working, feel empowered by the freedom to work from multiple locations and the flexibility of full or partial participation. This helped to mitigate the adverse impact of the unavailability of stakeholders as well as the disadvantages of geographical dispersion. Distribution of work items to match the team members' expertise and available time helped them to contribute confidently. The issues related to the access to end-users and limits on the available time for user research was mitigated through enablement for leveraging tacit knowledge within the team. It was evident in the case study that the blend of tacit and explicit knowledge supported to triangulate findings and expedited the synthesis through team deliberations and consensus. In this case study, the team was distributed across three offices from two cities, but conversion of synthesized knowledge into shared in-process artefacts helped to carry forward the knowledge and common understanding throughout the design life cycle with optimal face-to-face interactions only at critical junctures. Apart from the quality design outcomes, we also observed stakeholders acquiring a sense of ownership, developing a service-user centric mind set and a sense of accomplishment. We consider it as a significant achievement as perforce there is a likelihood of conflict of interest, say in a recruiter's objectives and the service user's (that is, job applicant's) expectations.

We acknowledge that this approach was validated only in the organization context and the design output was validated with a limited number of service-users. We plan additional validation with a wider service-user base in the near future. As part of the future work, we intend to refine this quasi-participatory design process in similar organizational contexts as well as in different business domains. In particular, we observe the potential in the Social Impact space, which may be well-disposed due to the tradition of the participatory action research. We observed the possibility of Service Designer playing different roles like team facilitator, mentor, educator, and moderator to build consensus. The different roles the designers could play, that is, 'wearing different hats', and the contribution of appropriately incorporating the roles in the quasi-participatory design approach could be an interesting area of future research.

In spite of its limitations, we hope that this study will serve as a useful point of departure for discussion around quasi-participatory design approach, our suggestions and how to utilize the available tacit knowledge. We see the applicability of this approach in organizational service design as well as in social impact sectors which have similar challenges.

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# Designing tangible tools to support collaboration in the co-design of healthcare services

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## Abstract

As the challenges facing the Norwegian healthcare system are growing in scale and complexity, cross-disciplinary collaboration is needed between public and private sectors to rethink how we design services for care. Service design has emerged as a fruitful area of design practice and research that can support cross-disciplinary collaboration. It may do so by providing effective co-design communication tools that bridge the evidence-based culture of the medical world with working cultures, perspectives and languages of other fields. Despite the documented use of such tools, few examples in the literature describe the actual design process of developing three-dimensional communication tools and how designed attributes of tools may impact on their effectiveness and influence collaboration. This paper presents examples of tool prototyping as part of an ongoing PhD research. It includes three cases that are taken up to explore how to design context appropriate tools. This is done through the application of an analytical framework that draws on the use of metaphors and affordances in physical objects to offer an account of how tangible tools may be developed and implemented to support collaboration in the co-design of healthcare services.

**KEYWORDS:** collaboration, tangible tools, metaphors, affordances, service design, co-design, workshop facilitation, design process

## Introduction

As the healthcare challenges of society increase with changing demographics, we are witnessing increasing pressure on the limited resources available to meet needs and services (Engström, 2014). Service design and co-design processes are being called upon to re-think healthcare service provision and to offer approaches and methods to facilitate collaboration and to harness available resources in new ways (Baxter, Muggleston, & Maher, 2009). In this paper, my focus will be on the development of tangible tools specifically.



Services have been described as being complex, hybrid artefacts made up of things, places and systems of communication and interaction, but also of human beings and their organizations (Meroni & Sangiorgi, 2011). The context of healthcare consists of multiple stakeholders (i.e. consumers, patients, clinical staff, administrators, insurers) who interact with multiple services (from primary care to academic institutional networks) within multiple sectors (from clinical practice to insurance and government) (Polaine, Løvlie, & Reason, 2013).

High expectations are put on cross-organizational collaborations to produce innovative healthcare outcomes. This is despite the extensive challenges that often exist in relationships between stakeholders, such as a lack of an internal team culture, team communication (Sarin & O'Connor, 2009), and a common understanding and a shared vision of the object of development (Molin-Juustila, 2006). The motivations, needs and relations of stakeholders - and between them - need to be understood and regularly taken into account, as relationships also evolve and shift through time, (Clatworthy, 2013; Jones, 2013; Polaine et al., 2013; Sangiorgi, 2012; Wetter-Edman et al., 2014). Effective communication tools are therefore needed to bridge the evidence-based culture of the medical world with the working cultures, perspectives and language of the other fields.

Co-Design is used as a central approach in the design of services in support of multi-disciplinary collaboration. It may be defined as 'the creativity of designers and people not trained in design working together in the design development process' (E. Sanders & Stappers, 2008, p. 2). Co-design communication tools are becoming increasingly popular as a means to generate ideas and to establish a shared understanding and common vision and goal in the early stages of an innovation process. This is carried out through co-creation workshop settings where communication tools are taken up to facilitate knowledge exchanges and understanding between diverse actors.

In recent years, we have witnessed an increase in the use of specifically three-dimensional tools for these ends. This has been due to the effectiveness of the tangible nature of the tools in establishing a shared 'language' through physical form. Such an achievement is beneficial in contexts where verbal communication often breaks down due to professional jargon and misalignments between different professional working cultures. Although the use of tangible tools is often described in co-design literature, what is frequently not given attention are the design processes of such tools and accounts of how such tools could or should be designed.

Tangible tools are often described as having been successful because they were visually appealing, they catch the attention of participants, or facilitate a 'playful' atmosphere (Brandt, 2013; Buchenau & Suri, 2000; Clatworthy, Oorschot, & Lindquister, 2014; B. Gaver, Dunne, & Pacenti, 1999; Mattelmäki, 2008; L. Sanders & Stappers, 2013, 2014). Such accounts support the view that the aesthetics and visual aspects of tools are indeed successful, but say little about the design principles concerning fundamental ideas about the practice of designing tangible tools or the design choices that determined the final physical outcome. This in turn provides limited insights to support designers in further developing tangible tools. Consequently, tools are often developed on a trial and error basis. Further, when there is a poor match between the design of the tools and the people who will be interacting with them, the workshop tools themselves may hinder engagement and interaction. Resulting unsuccessful workshop interactions can therefore create challenges for service designers who are attempting to build ongoing trust with participating stakeholders.

This paper builds on the notion that tools can offer an aesthetic impact on participants (i.e. their interest, engagement, and the collaborative relations between participants). I explore how this impact can be specifically designed and the potential tangible artefacts may have in assisting shared perceptions and plans for the co-development of improved or new healthcare services. I present the design process of developing a variety of tangible tools in the format of three case-study workshops. I analyse these tools and their place early in a

wider innovation process through an analytical framework that draws on the notions and concepts of metaphors and affordances as applied to the physical objects used in workshop facilitation. I close the paper by arguing that there is ample room for the further development and critical co-design of these and other tangible tools in innovation and facilitation practices in healthcare service design and delivery.

## Supporting collaboration through co-design communication tools

Re-thinking how healthcare may be provided and how the co-design of new healthcare services may be realised requires innovation across both public and private sectors. Although research on collaboration in public service has grown significantly, it is still commonly assumed that organizations within and across sectors will naturally collaborate (Morris & Miller-Stevens, 2015). In literature on co-design workshop facilitation within service design, collaboration is often mentioned as a wished outcome, but little is mentioned about what the nature of that collaboration should be. Many project initiatives within the field of healthcare are mandated; not all collaborations are voluntary and not all are equal. A particular collaboration may be perceived as a singular, monolithic interaction, but rather as a highly flexible, adaptable and fluid form of interaction (Morris & Miller-Stevens, 2015).

Looking towards organizational change and management studies, Pirinen sums up collaboration as ‘A transformative capability that necessitates the crossing of the structural, cultural and other boundaries of individuals, organizations and networks and can be supported by strategic, operational and cultural integration, by the creation of trust and through the recognition of mutual value among the actors.’ (Pirinen, 2016, p. 28). As many collaborations differ, the manner service designers approach the aim of collaboration in workshop settings influences the design of the methods they use and also the design of their tools. This is a core item for consideration in the inclusion of tangible tool design as part of service design innovation strategies in healthcare.

In such a context, service designers need to identify, understand and include the character and dynamics of cross-organizational service networks. They need to do so to effectively cross boundaries and align expectations and goals. Typically, co-design approaches used in such contexts involve visual methods and tools. Tools such as design games, graphic representations and artefacts facilitate the sharing of user knowledge, the negotiation of differences and the generation of new ideas and experimentation (Ehn, 1988). In the context of fostering shared activity, the use of ‘boundary objects’ (Star & Griesemer, 1989), such as diagrams or other visual representations, have been stressed as playing an important role in aligning interests among stakeholders and transferring knowledge and learning across distances and domains (Carlile, 2002; O’Flynn, Blackman, & Halligan, 2013).

To provide a clearer understanding of tools used within service design, Tassi (Chiara, Pacenti, & Tassi, 2009) developed an overview of available ones (Figure 1) according to the design activity they are used for, the kind of representation they produce, the recipients they are addressed to and the contents of the projects they can convey. The platform includes both two dimensional and three-dimensional tools. Such tools are connected to materials and materiality.

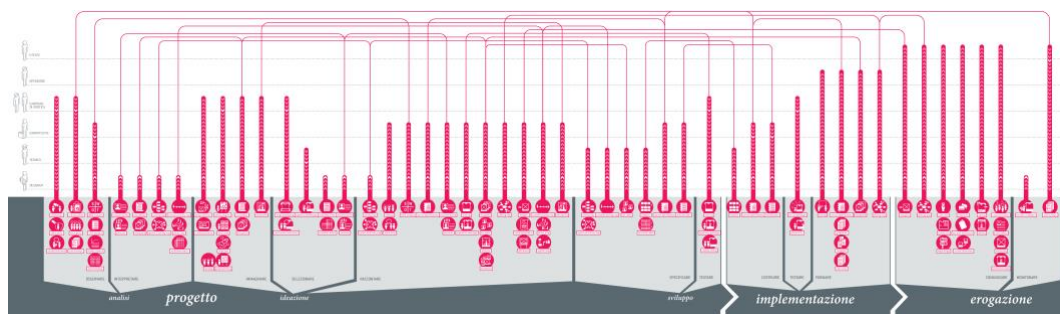


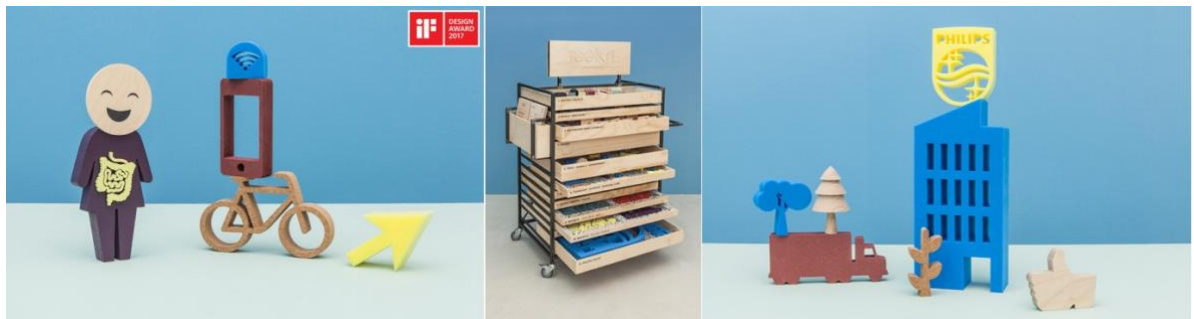
Figure 1: Tassi, 2009, [www.service-designnertools.org](http://www.service-designnertools.org)

Blomkvist, Holmlid and Clatworthy (Blomkvist, Clatworthy, & Holmlid, 2016) state that service designers need to have an understanding of how they use and relate to materials as part of their design process, as a part of their outcome and as a competence. However, there are few descriptions in the literature on the design process of communication tools and ways they can be most effectively designed to support collaboration in the service design process.

If we look towards the field of design thinking in service design and the involvement of graphic designers, Natasha Jen from the design studio Pentagram (Jen, 2018) calls for more critique on the process, materials and tools used in design thinking. Jen questions why design thinking, for example, has been reduced to the use of only 3M post-it notes. In support of such a call for critique of the materiality of tools, this paper questions how design specifications and design support can be developed for tangible tools that support increasingly complex design problems. This is approached by researching how tangible tools are designed, what role tangibility in those tools plays, which metaphors and affordances within those physical forms produce positive results and why that may be so.

### The design of tangible tools for workshop facilitation

Tangible tools are defined as ‘material components used in participatory design activities’ (E. B.-N. Sanders, Brandt, & Binder, 2010, p. 2). They are becoming popular as a physical means to develop common ground between diverse stakeholders in co-design workshops (Figure 2). Wetter-Edman et al. (2014) argue that tangible tools can change the perspective of service design from a specific interaction to transformation, change and value creation. In describing design games as a workshop facilitation tool, Brandt (2011) explains how game materials create common ground that everyone involved can relate to. She describes how game materials simultaneously become ‘things to think with’, where the reflections from different participants result in re-seeing the task at hand, which in turn may provide new meaning.



**Figure 2:** Philips co-create toolkit (Palthe, 2017), photo: Raw Color

Aguirre et al. (2016) define three categories of tools for facilitation that are also applicable to tangible communication tools: *generic tools* (tools that lack specificity and are regarded as products for facilitators), *template tools* (tools that have a predefined format used as a starting point for a particular application) and *contextual tools* (tools that are designed specifically for a certain context or tailored for an activity). Contextual tools are a category of tools that calls for designers’ aesthetic skills as these tools need to be designed specifically for the professionals and the contexts they will be used in. For instance, a tangible tool aimed at facilitating policy-making among civil servants in government have different aesthetic requirements than physical tools used in conversation with children, where the tools need to, for example, stimulate play in order to facilitate interaction.

Examples of context specific tangible communication tools include design games (Brandt, 2013), Philips Co-Create Toolkit (Figure 2.); cultural probes (B. Gaver et al., 1999; Mattelmäki, 2008); Terra Nova Mini Maatschappij workshop tool (Figure 3) supporting

children in discussing societal challenges, Value Pursuit workshop tool (Figure 4) for aligning expectations and goals amongst stakeholders (Rygh, 2013); 'Boat' tangible tool (Figure 5) for strategic conversations (Clatworthy et al., 2014) and the Multi-sensory relational tool (Figure 6) for creating a shared understanding of the role of relationships in the development of complex services (Aguirre-Ulloa & Paulsen, 2017).



**Figure 3** (top left): Terra Nova workshop tool for children to discuss societal challenges (Hu, 2013), photo: M.Haller. **Figure 4** (top right): Value Pursuit workshop tool to align expectations and goals amongst stakeholders (Rygh, 2013), photo: K.Rygh. **Figure 5** (bottom left): Boat tangible tool for strategic conversations (Clatworthy et al., 2014; Ekblom, Langnes, Nordli, & Owren, 2013), photo: AHO. **Figure 6** (bottom right): Multi-sensory relational tool visualizing the role of relationships through physical materials, in the development of complex public services (Aguirre-Ulloa & Paulsen, 2017), photo: Aguirre-Ulloa/Paulsen.

### The use of affordances and metaphors in tangible tools

How workshop participants go about interacting with context specific tangible tools depends to a considerable degree on the designed attributes of the physical objects. What it is about these physical objects that supports and enables communication and interaction may be understood through reference to the affordances and metaphors embedded and embodied in the design of such tools.

The concept of affordance was originally proposed by the American psychologist James Gibson to describe what the environment 'offers the animal, what it provides or furnishes, either for good or ill' (Gibson, 1979, p.127). Donald Norman then introduced this concept to the field of design and Human Computer Interaction in his book *The Psychology of Everyday Things*. Norman regards affordances as relationships rather than properties and defines affordance as the relationship 'between the properties of an object and the capabilities of the agent that determine just how the object could possibly be used' (Norman, 2013, p. 9). Norman states, 'A chair affords ("is for") support and, therefore, affords sitting. Most chairs can also be carried by a single person (they afford lifting), but some can only be lifted by a strong person or by a team of people. If young or relatively weak people cannot

lift a chair, then for these people, the chair does not have that affordance, it does not afford lifting'. (2013, p. 9).

For Gibson (1979), affordances are the action possibilities of objects with reference to the physical condition of the user, while for Norman it is the perceived information with reference to the mental and perceptual capabilities of the user. This paper focuses on the latter, while taking into consideration that specific interpretations of this general idea differ in various research contexts.

The concept of affordance has been especially appealing to designers of graphical user interfaces. Unlike traditional industrial designers, user interface designers can more freely and easily define visual properties of the objects they create (Kaptelinin, 2017) and are therefore well positioned to create what Norman (Norman, 2013, p. 10) calls 'strong visual clues to the operation of things'. Affordances are closely linked to metaphors in the sense that they have the potential to build associations between conceptually separate entities whereby the attributes that relate to one entity are used to understand or represent another (Wee, 2005). In this way, incorporating metaphors in tangible tools can make abstract concepts tangible for the user, allowing them to more easily express and discuss topics through representations and associations.

Metaphor has long been acknowledged as a linguistic device, but there has been growing recognition that the use of metaphors is not confined to spoken or written language but that it underlies how we think, reason and imagine in everyday life. Building upon the Contemporary Theory of Metaphor (CTM) outlined by George Lakoff (1993), Lynch and Fisher-Ari explain that metaphors are not limited to only linguistic expressions but also 'reveal the positionality from which we both form and express interpretations of concepts and experiences, regardless of one's native language, culture, nationality.' (Lynch & Fisher-Ari, 2017, p.196).

It is important to consider metaphor and correspondence in meaning making. A linguistic metaphor consists of an association between a target and a source, through establishing a conceptual correspondence between two words. Product metaphors differ in the sense that products are tangible entities. The target is the 'product' that is employed in a metaphor and the source is the remote entity that is associated. Nazli Cila, in her thesis *Metaphors we Design By* (Cila, 2013), states that in order to create a product metaphor, designers are required to make the appearance of a source visible in the appearance of its target. For this reason, product metaphors involve two different kinds of mappings from source to target. First there is a conceptual mapping as in linguistic metaphors, to build the metaphorical link between target and source; secondly, a physical mapping takes place to manifest this link in tangible form.

Although many examples of the use of metaphors exist in design domains, less is known about the way in which metaphors are generated by designers. This is a topic that is mostly overlooked, even in the linguistics domain. In *Memory and Cognition*, Holyoak and Koh (Holyoak & Koh, 1987), describe the source selection of metaphors as the least understood decision among all the decisions that are made during analogical reasoning and metaphorical thinking processes.

## Considerations for the design process of tangible tools using metaphors

In order to include metaphors in the design of products, it is important to evaluate which particular quality of the product is best to emphasize, what kind of experience one wishes to offer users, and thereafter choose a relevant source for the metaphor. When incorporating product metaphors in tangible communication tools, rather than products, the source selection process may be even more complex. Several aspects need to be taken into consideration: the aim of the workshop in which they are to be used, what activities support this aim and where, and specifically when, it would be beneficial to incorporate physical



tools. Furthermore, the selected metaphor also needs to trigger engagement and participation in facilitated workshop activities. Then participants need to perceive tangible tools not as products, but as tools at their disposal that they feel inspired to use for making sense out of complex contexts. Gaver (W. Gaver, 1996) and Kaptelinin (Kaptelinin, 2017) emphasize the importance of active exploration and suggest that the role of metaphors in design should guide users' explorations of a system rather than conveying exactly how the system is to be used.

The metaphor generation that needs to take place is an example of a creative process where a considerable amount of decisions need to be made. A phase of divergent thinking is needed when designers search for a source to associate with a target and ideate a set of potential sources, while convergent thinking is necessary when deciding on an appropriate source. The same applies to incorporating physical attributes of tools to afford various actions to be taken by the user. When converging to choose one specific metaphor or attribute over another, there is a need for constraints for this decision making.

I argue that it is these constraints that form the basis for design principles for a designing tangible tools that use product metaphors. One approach to defining design principles for tangible tools is to study the use of such tools and to prototype various tools as a means to observing user interaction and the benefits that tangibility in communication tools may offer. This I illustrate with reference to three different workshop case studies.

### Workshop case studies

As part of doctoral research into the design of tangible communication tools supporting cross-sector collaboration, I have conducted multiple case study workshops within the context of co-designing healthcare services. The case studies consist of practice-based explorations through and by facilitating co-design workshops, where the analytical framework draws on the use of metaphors and affordances in tangible tools. The work was conducted at the Institute of Design at the Oslo School of Architecture and Design (AHO) and is part of the wider research project C3 – Centre for Connected Care. C3 is a Centre for Research-based Innovation (SFI), funded by the Norwegian Research Council. The project is collaboration between the Norwegian public healthcare system, the medical industry, and academia with the aim of innovating in healthcare service provision in Norway.

The tangible tool 'Actor Mapping Flags', was designed as a prototype by the author (a multi-domain design professional at the European level). The prototype was created to be utilized in the facilitation of case study workshops with the purpose of mapping projects and/or stakeholders in cross-sector service design projects within healthcare. The intention was to test how participants interacted with the tool, how they related to and embraced the metaphors incorporated within the physical objects and what added value the tangibility of the tools could offer. The design of the tool has been iterated between each workshop test, incorporating observations, insights and findings from both action research (Sanders & Stappers, 2013) and through theoretical research based on literature from relevant fields.

The prototype has so far been tested in five service design innovation projects focusing on the development of healthcare services in Norway, three of which are described in this paper.

## 1 - Project mapping through a metaphorical landscape – Centre for Connected Care (C3)

**Tangible tool:** Actor Mapping Flags, Prototype #1

**Metaphors used:** Map of landscapes and ocean, metaphorical landmarks, flags

**Number of participants:** 30

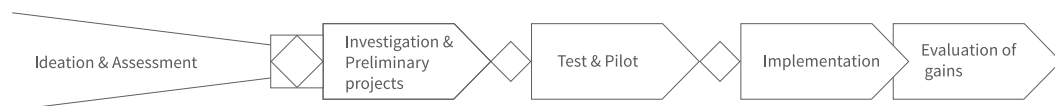
**Participants:** AHO, the Norwegian Business School, Institute for Informatics at the University of Oslo, Akershus University Hospital, Oslo University Hospital, Oslo municipality, Larvik municipality, Sunnaas Rehabilitation Hospital, Abelia, Accenture, Dignio, Dynamic Precision, Induct, Norway Health Tach, Lillehammer Rheumatism Hospital, Siemens, Sykehuspartner.

**Aim of workshop:** To co-create an overview of C3 projects and shared understanding of the project development process, visualizing the networks of both projects and project partners.

### Description:

Due to the complexity of the C3 as a Centre for Research Innovation and its network with its vast number of stakeholders and projects, combined with the speed in which projects develop, early in the project it was difficult to create an overview of all projects and processes. All project participants were therefore invited to a workshop where they could contribute a status update of their individual projects in order to contribute this in the co-creation of an overview of all C3 projects.

Lowering the threshold for engagement and to create a common language in regards to different process terminologies, the existing project process diagram was visualized as a map of a metaphorical landscape (Figure 7). Each landmark represented a specific process stage as seen in Figures 8 and 9. Flags had different colours depending on which pre-defined healthcare theme a project belonged to. Each C3 project was also part of larger project work packages, which were represented by coloured pegs so that these could be attached and detached to the flags according to discussions on the organization of projects and linked work packages.



**Figure 7** (top): Innovation process that was used as the basis for the metaphorical process map. **Figure 8 & 9** (bottom left & right): The innovation process phase 'investigation and preliminary projects' was translated to 'the lagoon of preliminary projects', the 'test & pilot' phase into 'the depths of trial and error', and the 'implementation' phase became 'the peaks of implementation'. This workshop was hosted

to co-create an overview of all service design projects within C3 – Centre for Connected Care. Photo: K. Rygh.

Participants were asked to place their project flag onto the map in relation to the different landmarks according to whether the project was in the start-up phase ('the lagoon of preliminary projects'), going through experimentation and testing ('currents of iteration') or if they were ready to be offered as concrete services ('peaks of implementation').

### Findings:

As participants placed flags onto the map, they also discussed their placements with others in order to adjust their own positioning of the flag in relation to other projects' developments. It was the top of the wooden stick poking out from the paper flag that afforded the action of picking up the flags, rather than pushing them around on the map. This physical act of placing and arranging project flags triggered discussion and questions about why the flags were in one area rather than another. This in turn led to conversations on the challenges projects were facing in their development process and possible opportunities they could consider, based on the experiences of actors in other projects.

The result of co-creating an arrangement of projects on a metaphorical landscape was a visualized, shared overview of active projects and the status quo of their development. This had not previously been possible to achieve via email and Excel spreadsheets. Furthermore, gaining an understanding of which stage of the development process the projects were in, created common reference points for conversations between actors in different projects. The co-created overview was later digitalized and shared with all participants. Unprompted, participants commented widely during and after the event that this tool generation, its tangible qualities and its affordances for shared understanding, were valuable.

## 2 - Actor Mapping and visualizing value exchanges – Children's Social Services

**Tangible tool:** Actor Mapping Flags, Prototype #2

**Metaphors used:** Flag poles, flags, flags with faces representing children (the users)

**Number of participants:** 17

**Participants:** Centre for Connected Care, AHO, Oslo municipality with Østensjø, Nordre Aker and Frogner city districts, the Norwegian Business School, the Norwegian Directorate of Health with the Department of Improved Interdisciplinary Collaboration (BTI).

**Aims of workshop:** Firstly, to define the various phases in discovering and reporting neglect and/or abuse in children and to map out existing and potential actors in each phase. Secondly, to explore and make explicit the value exchanges that occur between actors.

### Description:

'Barneherjernet' is a C3 project lead by the municipality of Oslo focusing on increasing awareness, competence and interaction between municipal service providers in the early intervention and prevention of neglect and abuse for children in vulnerable family situations. The project addresses significant systemic challenges, the role of empathy and the change needed in regards to mental models and relational coordination.

In an 'Actor mapping' workshop, participants were divided into two groups and presented with a persona of a child in a vulnerable situation, a customer journey map and blue paper strips and markers. Participants placed the blue strips and markers on the map to define the various phases of the journey of a child's situation. They then defined which actors were present in each phase and which new actors could be relevant to consider, representing them by Actor Mapping Flags. These flags were then placed onto the map visualizing an overview of the actor network in each phase (Figure 10). To maintain user centricity, one flag



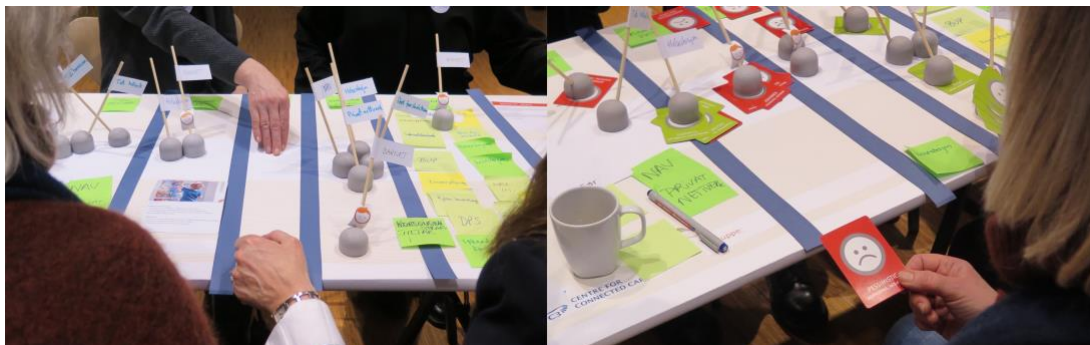
representing the user (the child) was made for each phase and was represented by the face of a child on the flagpole.

The design of the Actor Mapping Flags was iterated from the previously mentioned workshop in order to improve the legibility of the text on the flags. This was done by altering the straight position of the flagpole to placing it on an angle so that the attached flags could be more visible to a person standing next to the table. In addition, the design and material of the flag bases was changed from wood to concrete in order to make the bases heavy enough to support flags being connected to each other with string.

Once all actors were defined and placed, participants chose one phase of focus where emotion cards (AT-ONE Touchpoint Cards, Clatworthy, 2011) were placed under flag bases indicating how various actors were potentially feeling in a certain situation (Figure 11). The cards acted as a stimulus for discussion on what needs various actors had and how these needs could be met by other actors. This exchange of resources (or values) were visualized by writing down needs and contributions on pieces of paper that were hung on string between connected actors.

### Findings:

Through co-creating a customer journey map and visualizing the exchange of resources between actors, participants were able to identify new actors and new relations of value between them. In addition, participants gained a greater understanding of how actors experienced the various phases and how their needs could potentially be better addressed. Through the re-design of the flags, the movements of the actor flags changed where, instead of being picked up and placed, the 'actors' were now rather pushed and slid across the table. It was almost as if participants were enacting interactions between the flags as though they were people. However, an unexpected outcome of the design iteration was that by altering the angle of the flagpole, the flag metaphor was also broken, where the flags were interpreted by some participants as 'canons' pointing at each other. This in turn was embraced by participants who used the flags to point in certain directions, using the poles to visualize what they were explaining.



**Figure 10** (left): Iterated Actor Mapping Flags prototype, visualizing the relevant actors in the process of reporting potential neglect or abuse in children. **Figure 11** (right): At-One emotion cards used as a trigger for discussion, addressing various actors' needs in the different phases of the journey.

### 3 – Supporting youth with intellectual disabilities in entering the workforce – InnArbeid

**Tangible tool:** Actor Mapping Flags, Prototype #3

**Metaphors used:** Flag poles, flags, landscape and ocean with details such as currents, topographic elevations and islands, as a customer journey map. A wooden figure of a person represented the user.

**Number of participants:** 18

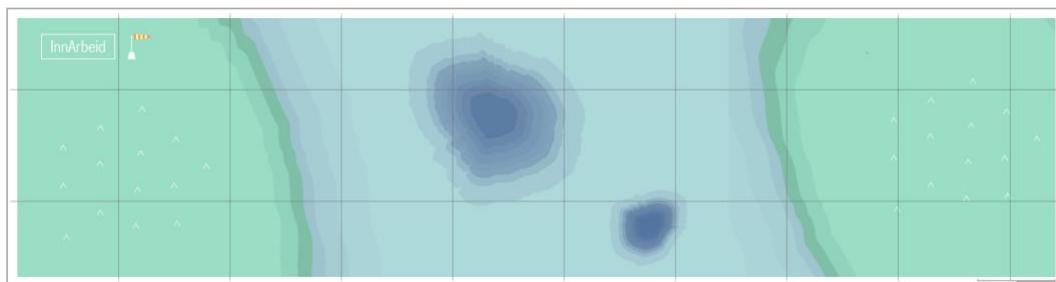
**Participants:** University of Agder, Norway, (Center for Healthcare Research South, Institute of Psychosocial Health and Centre for eHealth), AHO, IT firms Edge Consulting and JodaCar, the Confederation of Norwegian Enterprise (NHO), Sogndal municipality (the Norwegian Labour and Welfare Administration, Habitation services and the leader of Research and Development, FoU), Grimstad municipality (Grimstad Activity Centre, Habitation services, Jobcentral), Mjåvann workplace training center, the Norwegian association for people with disabilities

**Aim of workshop:** Firstly, the aim was to map out existing and possible actors within the different phases of the customer journey map. Secondly, it was to determine the roles of various actors and discuss the value exchanges between them.

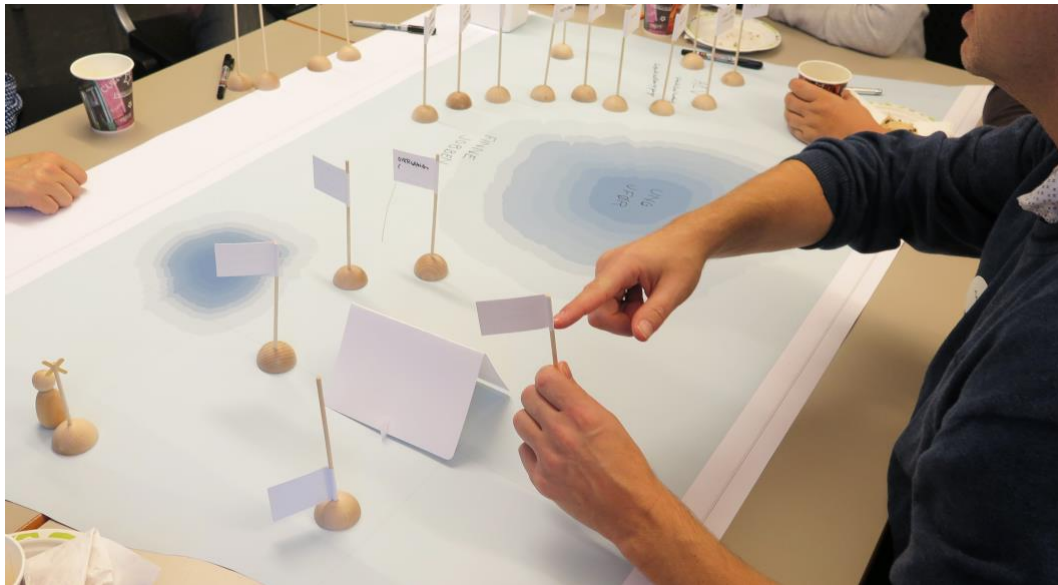
#### Description:

The project InnArbeid focuses on inclusion of youth with intellectual disabilities in the workplace and is led by the University of Agder, Norway, in collaboration with the municipality of Sogndal and the Oslo School of Architecture and Design (by Associate Professor Lise Amy Hansen and PhD Fellow Frida Almqvist). The initiative aims to support the transition from school to the workplace through services and technology enabling young adults to make best use of their individual abilities. An Actor Mapping workshop was hosted to create a shared understanding and overview of the participating actors in the different phases of the transition journey: high school and skill development, the search for employment and the phase of being employed.

Participants were divided up into three separate groups where the customer journey map (designed as a landscape and ocean, see figure 12) was cut into three pieces, where each group worked on one piece (phase) of the map: high school - solid ground (land), searching for a job - a phase of uncertainty (the ocean) and employment - solid ground again (land). To maintain a user centred focus, the user (the young individual) was represented by a wooden figure, visually different from the flags.



**Figure 12:** Map of metaphorical landscape. The map was later cut into three pieces, one for each group of participants.



**Figure 13:** Workshop participant uses a flag representing an actor to explain the challenges this actor faces in this part of the journey.

Participants brainstormed about possible challenges a generic persona (user) faced in each specific phase, and mapped out existing and new potential actors within this phase with actor mapping flags (Figure 13). The design of the flags was again iterated on since my previous workshop and had round, wooden bases and straight flagpoles, with blank paper flags. The new design of the bases afforded the possibility of both picking up and placing the flags as well as holding the rounded bases, pushing and sliding them across the map. The flagpoles were redesigned to be in a straight position in order to re-establish the visual perception of a flag.

After all actors were placed, a second map of an island was introduced where each group chose one challenge to focus on. Participants placed the relevant actors onto the island, on the illustrated topographical lines, in relation to which actors offered most support to the user. With the user in centre, actors that offered direct support to the user were placed closest (higher up) to the user and other relevant, but less involved actors, were placed further away (on a lower level). Workshop participants thereafter discussed what challenges the actors on the island faced and how their needs could be met by other actors' resources. This exchange of value between actors was visualized by drawing lines between actors and writing down the specific exchanges on the map.

### Findings:

In summarizing the workshop day, the different pieces of the landscape were joined together again by placing the different group tables next to each other (Figure 14). The tangible representation of the actor network was the first overview of the transition phase that the participants had seen. Their immediate conclusion was that there were far too many actors involved in the overall transition, where it was suggested that actors in each phase needed to be reconsidered. In addition, by having the complete overview in front of them, the various groups could discuss their phase of the transition in relation to the other phases, comparing, pointing and moving flags to visualize their thinking. The physical flags also created common physical reference points enabling participants in having a democratic, round table discussion about the how the various actors related to each other. The tools remained in front of the participants, which ensured that the conversation stayed on point and did not move into the more abstract complexities of the project.



**Figure 14:** The individual parts of the map were joined together to create the complete user journey, visualizing the relevant actors in each phase. Participants used the arrangements of actors to explain their findings in the round table discussion facilitated by Associate Professor Lise Amy Hansen.

### Conclusion: Towards design principles for designing tangible tools

As seen in the case study workshops, tangibility in service design, facilitated through the use of tools, enables multimodality in communication. Through seeing, moving, pointing, building and rearranging physical objects, workshop participants are able to co-create shared understandings with other stakeholders. By communicating through physical form the focus on hierarchy and power relations may be shifted to the objects in front of participants. Further, breakdowns in verbal communication due to professional jargon are bypassed through hands-on communication. Dialogue is motivated through the placements, movements and arrangements of the physical objects, initiated by the affordances and metaphors in the designed form of the tools.

Pieter Jan Stappers, in referring to the use of tangible tools in workshop facilitation, describes the act of placing an object in front of workshop participants as ‘dropping the phenomenon onto the table’ (Rygh, 2013). As seen here in the case study workshops, visualizations of arrangements of tangible objects make the intangibility of healthcare services and the diverse expertise needed to design them more understandable and accessible to all involved actors. In complex collaborations consisting of a mixture of working cultures and languages designers therefore need to be critical in regards to what they ‘place on the table’ and how that could or should be designed, not only to be context appropriate, but to also add value through its tangibility.

From practice, one often hears that unsuccessful co-design workshops occurred because a group of participants weren’t familiar enough with co-design methods, or mature enough to properly interact with the given material. This paper instead questions how can we design tools that can be effectively taken up with little or no knowledge of co-design practices. One approach to embedding these factors in tools supporting ‘boundary spanners-in-practice’ (Levina & Vaast, 2005), agents who engage in negotiating the boundaries of diverse fields to create new joint fields of practice, is the use of affordances and metaphors in physical objects.

In a context where health meets design to bring different knowledge together to innovate healthcare services, tangible tools cannot add value on their own. They are also part of a set of techniques for supporting the designerly practice of workshop facilitation in orchestrating events and activities more deliberately (Aguirre et al., 2016). It is here that product designers can support service design workshop facilitation with contextually designed tools, applying their competence and training in creating three-dimensional cognitive scaffolds that accelerate and enable collective sense-making.

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# Integrating empathy and lived experience through co-creation in service design

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## Abstract

While empathy is often hailed as a central aspect of service design, there is a growing acknowledgement of the risks associated with an over-reliance on empathy in design processes. As such, there is increasing recognition of the need to integrate lived experience—the direct, first-hand perception of a relevant situation, condition, or identity in an everyday context. This paper reviews existing literature related to empathy and lived experience in co-creation, with particular attention to the associated risks of amplifying one over the other. From this literature, we highlight two different manifestations of the relationship between empathy and lived experience: “I—It” and “I—Thou”. We build an understanding of the interdependence of empathy and lived experience and argue for an integration of both to enable reciprocal co-creation. To advance the existing discussion, we highlight a number of important directions for future research in this area.

**KEYWORDS:** empathy, lived experience, co-creation, service design

## Introduction

Empathy is repeatedly stressed as a central and distinguishing factor in design, especially in service design (Koskinen et al., 2003; New & Kimbell, 2013). It is typically described as understanding what it feels like to be another person or to walk in someone else’s shoes (Kouprie & Sleeswijk Visser, 2009; Wright & McCarthy, 2008). Over the years, a variety of design methods have been developed and employed to elicit empathy including: bodystorming (Burns et al., 1994), observation (Leonard & Rayport, 1997), experience prototyping (Buchenau & Suri, 2000), design probes (Mattelmäki, 2006), role playing games (Kaario et al., 2009), and service walkthroughs (Blomkvist & Bode, 2012). While empathy in the service design process has commonly been perceived as having positive effects, such as



supporting a creative understanding (Postma et al., 2012), critics have recently highlighted its dark side by suggesting that an over-reliance on empathy can promote single-mindedness, a present-day orientation, reinforce otherness, enhance exclusion, and ironically support designers to design for people like themselves (Abbott, 2017; Holt, 2011; Meill, 2015; Staffer, 2015; Wendt, 2017). As such, too much emphasis on empathy can contribute to controlling and disciplining the interpretation of human experiences, further reinforcing the practices of colonization in design (Tlostanova, 2017).

One response to the over-emphasis on empathy is to leverage lived experience in service design processes through co-design, participatory design, or user-led design (Couvreur et al., 2013; Holmlid, 2009; Sanders & Stappers, 2008; Steen et al., 2011; Trischler & Scott, 2014; Trischler et al., 2017). We define lived experience as direct, first-hand perception of a relevant situation, condition, or identity in an everyday context. While there has been significant attention paid to empathy within design literature, there has been little research on the nuances of lived experience or how to effectively integrate empathy and lived experience in co-creation (Cipolla & Bartholo, 2014). As highlighted by Smeenk and colleagues (2016, p.31): “the specific utility, and legitimacy, validity of this first-person perspective in design is currently not sufficiently understood and recognized [...] a better understanding of the relative value of the first-person perspective compared to—and combined with—other fundamental perspectives [...] can contribute to enrich and develop design methodologies.”

This paper focuses on integrating empathy and lived experience for co-creation in service design. For the purpose of this paper, we define co-creation as collaborative activities between two or more actors. Traditionally, most research in service design has accentuated the beneficial nature of co-creation: it fosters the fit between services and its users (Holliday et al., 2014; Hussain et al., 2012); leverages a mutual understanding between involved actors (Akama, 2014; Fjuk et al., 2016; Følstad et al., 2014); and supports the development of new and existing services (Aro et al., 2012; Holliday et al., 2014; Kronqvist and Korhonen, 2009). However, a growing body of literature suggests that co-creation can actually be a ‘double-edged sword’ (Chan et al., 2010; Dong et al., 2015; Piller et al., 2011; Xu et al., 2014) due to several associated risks, such as participants not having an equal voice in co-creation efforts (Näkki, 2012) and concerns about the sustainability of ideas (Akama, 2014). Extant research insinuates that a pressing risk in many co-creation efforts is that the scope and value of innovations may be biased towards the designer, as the designer often takes on the dominant role in the co-creation process (Takeyama et al., 2012). Although there is some acknowledgement of the risks inherent in co-creation, more research is needed on these pitfalls as current literature predominantly focuses only on the positive aspects (Dong et al., 2015; Mustak et al., 2013, 2016).

In this vein, the current paper specifically reviews existing literature related to empathy and lived experience for co-creation in service design, with particular attention to the associated risks of amplifying one over the other. A focused literature review was conducted by manually scanning abstracts for relevance to empathy, lived experience, and co-creation in previous *ServDes proceedings* and the *International Journal of Design* as well as through a general search of design and service research outlets. In addition, opinion pieces from popular discourse, such as blog posts, were added to capture the evolving public sentiment regarding empathy and lived experience. To illustrate issues brought forward through the literature, we draw on short examples of activities within service design processes supported by Experio Lab, a group that uses a service design approach to foster co-creation within the healthcare system in Sweden. The examples presented here were gathered through ethnographic research, which involved observation, interviews, and a review of archival data related to Experio Lab’s work. In doing so, this paper contributes to service design literature by: 1) synthesizing the documented risks of co-creation caused by a dominant focus on empathy or lived experience; 2) detailing the different manifestations of the relationship between empathy and lived experience in service design; and 3) highlighting the interdependence of these processes for reciprocal co-creation.

## The Over-Emphasis on Empathy

Within design literature, and more specifically service design studies, there has been a growing body of research on empathic design focusing on how designers attempt to get closer to the lives and experiences of users (Koskinen et al., 2003; Leonard & Rayport, 1997; Mattelmäki et al., 2014; Postma et al., 2012). Empathic design aims to move beyond a consideration of rational and practical issues to the experiences and contexts of users, typically to inform new product and service development (Mattelmäki & Battarbee, 2002; Postma et al., 2012). The conceptualization of empathy in design has been informed by a variety of perspectives. Drawing on social theory, Wright and McCarthy (2008) highlight that empathy involves both perceiving the emotion of another as well as articulating the other's context within one's own. Similarly, inspired by psychology, Kouprie and Sleeswijk Visser (2009) highlight two common dimensions of empathy: 1) the affective dimension associated with emotions and feelings and 2) the cognitive dimension focused on understanding and perspective.

In service design, a variety of methods have been introduced to help facilitate empathic engagement with a user's experience of a service (Stickdorn & Schneider, 2011). One such example are service walkthroughs, which aid actors in understanding service in a holistic way, focused on the experience of customers and other stakeholders, by enacting and walking through the process of a service (Blomkvist & Bode, 2012). Other common approaches include the use of empathy tools (Hoss & Roopani, n.d.), which involve working with physical objects or social techniques to get a sense of what users feel in their everyday life, and empathy maps, which help to visualize the multi-sensual experience of actors (Gray et al., 2010). However, when actors simulate the experience of others, without having lived experience themselves, their experience remains one of novelty and they cannot fully understand what it feels like for someone who lives this experience (Abbott, 2017). Through the use of these empathic methods, actors can end up projecting their own assumptions on to the experiences of others and falsely rationalizing design directions (Meill, 2015; Staffer, 2015; Wendt, 2017).

To put this in context, Figure 1 illustrates examples of the use of empathy tools and empathy maps at Experio Lab. Within the context of Experio Lab's work, empathy tools are often used to help healthcare staff take on the role of the patient and build their understanding of different perspectives. In the photograph on the left, a healthcare leader is putting on an 'aging suit' to simulate what it feels like being 30 years older while moving around the hospital. Here the actor wearing the suit makes assumptions based a short-term simulated experience about what it might feel like to move through the hospital for seniors. Furthermore, empathy maps are often used to detail the experience of patients and stimulate a dialogue about their underlying emotions and motivations. In the photo on the right, designers are working with healthcare staff to brainstorm about what their patients might be thinking, feeling, saying, and doing in relation to their service. However, completing empathy maps without intentional interaction and input from patients may simply reflect staff's own interpretations of the patient experience, clouded by their own role, identity, and experiences.



Figure 1: The use of empathy tools and empathy maps at Experio Lab

When these empathic methods are employed without the participation of those with lived experience or a critical dialogue with them to unpack the limitations, these methods can contribute to replicating colonial practices in service design. By colonial, we refer to the process of European political domination that involves ‘othering’ and undermining the self-definition of people (Tunstall, 2013). Decolonizing service design practice and research requires an understanding of the locations and bodies related amid complex power dynamics (Schultz et al., 2018). As such, we must acknowledge that empathic methods can often create a semblance of participation and end up becoming tools for the coloniality of design (Tlostanova, 2017). When actors objectify those that they are designing for by assuming that they know them and can understand them through their own actions, they engage in what Cipolla and Bartholo (2014, drawing on Buber, 1921/1996) refer to as “I—It” relationships. The authors highlight the need to move toward reciprocity in co-creation for more socially responsible service design practices. One way to do this is by leveraging lived experiences in co-creation.

## Leveraging Lived Experience

Although there has been some recognition of the need to engage users to cross-validate insights (Buchenau & Suri, 2000) or provide expertise throughout the design process (Wetter-Edman, 2012), the role of lived experience in co-creation has not received much attention within the service design literature to date. There are, however, some methods associated with engaging actors with lived experience, such as: auto-ethnography (Curedale, 2013), co-creation workshops (Stickdorn & Schneider, 2011; Westerlund et al., 2003), and prototyping with users (Sanders & Stappers, 2014). While the body of knowledge on lived experience remains in its infancy, there has been a growing movement in service design to appreciate users as partners in the design process through co-design (Sanders & Stappers, 2008). This movement is peripherally connected with the maturing field of participatory design, which was built on the premise that users should be involved in the process of designing systems that affect them (Halskov & Hansen, 2015; Holmlid, 2009; Kensing & Blomberg, 1998). This evolving ecosystem of collaborative design processes also shares certain links with discussions on user innovation, where users with lived experience actively take on the role of designers in the development of specific products and services (Essén and Östlund, 2011; Oliveira et al., 2015; Trischler and Scott, 2014).

Within these converging bodies of literature, a variety of benefits of user involvement have been discussed, such as: service providers gaining a better understanding of users' needs (Steen et al., 2011), supporting user empowerment (Holmlid, 2009; Hussain et al., 2012; Taffe, 2015; Wetter-Edman, 2012), and combining different knowledge sources for enhanced novelty (Trischler et al., 2017). However, there is also some evidence suggesting that user-generated ideas are less feasible, producible, and sustainable (Akama, 2014; Magnusson et al., 2003; Trischler et al., 2017). Additionally, there is discussion that a more user-driven approach can cause a greater reliance on users' own knowledge (Oliveira and von Hippel, 2011) and may create difficulty in integrating traditional forms of expertise (Carr et al., 2009). On most occasions, the user is still entering the designer's sphere and the designer takes on a dominant and guiding role (Takeyama et al., 2012), which results in participants often not having an equal voice in the process (Näkki, 2012). As such, there is recognition of the need for role renegotiation (Donetto et al., 2014). Further research suggests that the involvement of end-users in the design process may actually shift their role away from designing for their own needs toward designing for a hypothetical 'other' (Taffe, 2015).

While the potential negative outcomes or risks associated with these collaborative design approaches remain under-researched (Vink et al., 2016), early work suggests that the integration of lived experience in co-creation on its own is not a panacea. While lived experience has immense value in deepening the understanding of needs and context, it is also critical to integrate different knowledge sources (Trischler et al., 2017) and work with multiple 'truth regimes' (Sellen, 2017) to enable the full benefits of co-creation. As such, both empathy and lived experience are required to bring together the relevant skills and knowledge within a service design process. Furthermore, research suggests the importance of designers leveraging their own lived experience in local contexts to connect with other actors in a more reciprocal exchange (Cipolla & Bartholo, 2014). In this way, lived experience is not necessarily only held by end users, but designers and other participating actors may also have direct and first-hand perceptions that are relevant within a design process. However, little is said within service design literature to date about how diverse actors can tap into their own lived, not just simulated, experience. Based on this notion, it is important to discuss empathy and lived experience among diverse constellations of actors, not simply the designer-user dyad that has been the dominant focus of existing literature in this area.

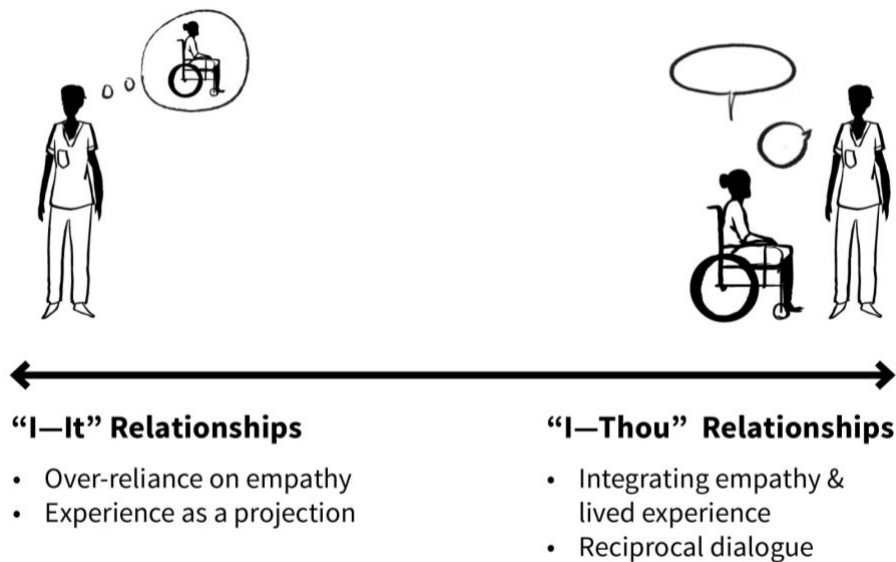
To contextualize this discussion, an example of the involvement of actors with lived experience in the service design process is shown in Figure 2. The image captures a co-creation workshop with youth in the development of a digital mental health service for young people supported by Experio Lab. During this project, one youth was hired as an advisor for this two-year project. While the designers and staff members supporting the project were once youth themselves, they acknowledged the value of having youth who are living and breathing this experience every day to contribute to moving the project forward. Throughout the entire service design process, the voices and experiences of youth themselves drove design decisions and influenced the perspectives of the healthcare staff and designers supporting the project. Driven by youth's own experiences, a new digital service was developed to support youth with monitoring their own mental health and to connect them with support more easily. Within this interactive service design process, staff built empathy for the youth by hearing their stories and visions for the future, which sparked them to make shifts in their own clinical roles in a way that recognized youth as the experts of their own experiences. This example from Experio Lab moves closer to what Cipolla and Bartholo (2014) call "I—Thou" relationships where an actor relates to another actor by recognizing that they do not know them entirely and can only know more by engaging with them in reciprocal dialogue.



Figure 2: A co-creation workshop during the design of a digital mental health service supported by Experio Lab

## Integrating Empathy and Lived Experience

As highlighted in the literature review above, there are different manifestations of the relationship between empathy and lived experience in co-creation. We draw on existing literature, particularly the work of Cipolla and Bartholo (2014), to highlight two critical manifestations as show in Figure 3. The first manifestation is co-creation based on “I—It” relationships, where there is an over-reliance on actors’ empathy. Here actors use methods to project their own assumptions, negating the value of others’ lived experiences and undermining their self-determination. The “I—It” relationship reflects a situation where actors objectify the ‘other’, assuming they know and understand them. The second manifestation is co-creation based on “I—Thou” relationships, where actors’ empathy is not recognized as sufficient on its own, but must draw on and be seen in service to others’ lived experience to enable reciprocal benefit. Co-creation based on “I—Thou” relationships acknowledges that all actors can tap into their own lived experience while recognizing others’ unique experiences within a dialogic process, rather than constructing a false ‘us vs. them’ divide within service design.



**Figure 3: The spectrum of different manifestations of empathy and lived experience in co-creation**

From the literature review on empathy and lived experience in co-creation, it may seem that empathy and lived experience in design are somewhat opposing forces: empathic design approaches are about designing for others, while the use of lived experience in design is more about designing for one’s self. However, when viewed systemically, it becomes clear that empathy relies heavily on lived experience and that lived experience can benefit significantly from empathy within reciprocal co-creation. In this way, we can see the mutual benefits of integrating both empathy and lived experience in service design. While designers, for example, are able to develop valuable offerings through their technical expertise and empathizing with other actors, they often cannot experience certain situations first-hand and thus, lack contextual and situated knowledge. On the other hand, actors with lived experience embody this situated knowledge, yet in some cases they may miss the particular technical knowledge to fully develop valuable innovations for themselves and others. In this way, co-creation based on “I—Thou” relationships through integrating empathy and lived experience can offer reciprocal benefits.

Figure 4 highlights the complementary nature of some of the risks and benefits of empathy and lived experience. For example, while one risk of empathy is that designers or other actors only gain a superficial understanding of a person’s needs and experiences, the benefit of leveraging lived experience is that actors offer specific, situated understanding informed by their inherent contexts. Similarly, while the integration of lived experience in co-creation has sparked the need for role renegotiation between actors, it is through empathy that others experience disruption and conflict, which can facilitate role shifts. The application of either empathy or lived experience within co-creation relies on the existence of the other. One cannot truly have empathy unless it is informed by lived experience, and the use of lived experience in co-creation requires the integration of particular skills and knowledge from an empathic other to realize valuable innovations that are of mutual benefit.

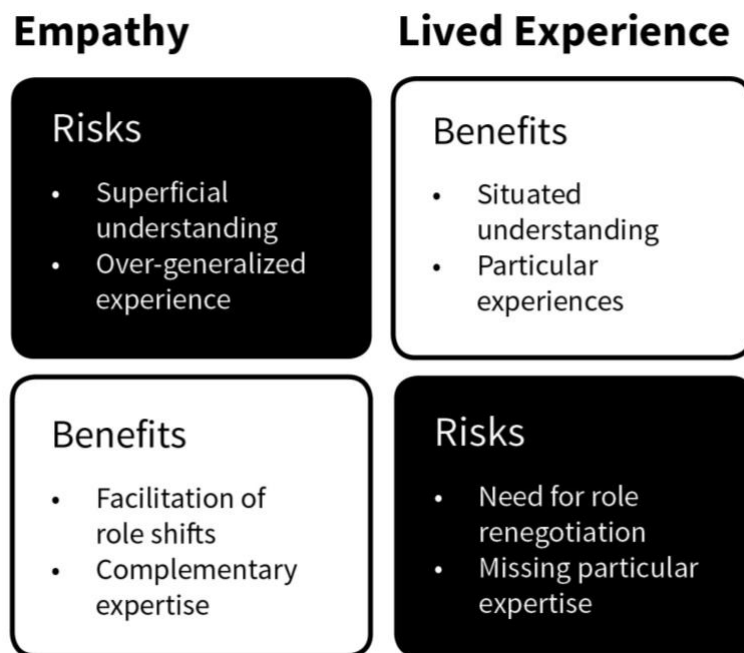


Figure 4: Illustrations of the complementary nature of empathy and lived experience in co-creation

## Moving Toward Reciprocal Co-Creation

Through an examination of the literature, supported by empirical examples from Experio Lab, we have highlighted the pressing issues related to the over-emphasis on empathy in service design. We argue that while empathy is a key building block for an actor's ability to design valuable offerings for others, lived experience is just as important and functions as a necessary complement to empathy in co-creation. Yet, while there is increasing recognition of the value of integrating actors with lived experience into service design processes, there is little discussion within this discourse about how actors can and do leverage their own lived experience while co-creating with other actors. Existing research details a one-sided process of empathy in co-creation that, we argue, has the possibility to manifest itself as an "I—It" relationship. To move beyond "I—It" relationships, we, aligned with the work of Cipolla and Bartholo (2014), suggest the need for reciprocal co-creation. The foundational work of Bohm (1996) on the principles of dialogue may offer further insights for reciprocal co-creation, including working with no pre-set agenda, nurturing sensitivity, and suspending assumptions.

While the principles of dialogue offer a starting place, in-depth empirical research on the practices of lived experience and the inter-related processes of empathy and lived experience amid reciprocal co-creation is necessary. To continue the journey towards "I—Thou" relationships in service design, there is a need to deepen the understanding of the potential risks associated with empathy that have been touched upon in popular discourse (Abbott, 2017; Meill, 2015; Staffer, 2015; Wendt, 2017) and to better understand the important and intertwined role of lived experience in service design. More work needs to be done to apprehend how actors can leverage their lived experience to support reciprocal co-creation; for instance, how do actors become aware of and interpret their own experiences and contribute to envisioning desirable alternatives to their own situation? Furthermore, more research is needed to understand if and how the open-ended process of dialogue and leveraging lived experience may support the process of decolonizing service design practices. How can we move from "I—It" to "I—Thou" relationships in co-creation? What are the

practices of lived experience and how do these practices relate to the practices of empathy in “I—Thou” relationships? What are the enablers and barriers of integrating the lived experiences of actors in service design?

While this research highlights connections between empathy and lived experience, it is important to reinforce that these two processes are not mutually exclusive. More work is needed to better understand how we can move from seeing these as separate processes by distinct people, to eliciting empathy and leveraging lived experience from all actors. For example, at this intersection we see the role of caregivers in healthcare service design processes that have a particular lived experience and often deep empathy for those they are caring for. We also believe it is important to better understand how designers themselves can be encouraged to tap into, rather than ignore, their own lived experience in service design. In this vein, there is a need for examining the representation among actors in service design processes, including designers, end-users, and other actors. Are the actors involved reflective of the spectrum of lived experiences of the populations they are designing with and for?

Healthcare is an interesting context in which to investigate this phenomenon because of the difficulty in fully understanding the experiences of actors who have conditions that can never be experienced by others. In addition to the investigation of co-creation activities with actors with lived experience in healthcare, user-led design activities, such as activities of the “Patient Innovation” platform in Portugal, could also be fruitful settings for advancing the understanding of the role of lived experience in the design process. Here patients with rare diseases who are often underserved by pharmaceutical firms and other medical suppliers, due to the small market size, innovate themselves and with some support from others to develop valuable and novel offerings (Oliveira et al., 2015). By examining the processes of these patients, insights may be gathered on how actors perceive their own situations and leverage their insider knowledge to develop solutions that are beneficial for themselves and others.

## Conclusion

This research highlights several issues following an over-emphasis on empathy in service design, including that it can result in actors projecting their assumptions onto the experiences of others. We argue that while empathy is a key building block for actors’ ability to design valuable offerings for others, lived experience is just as important and functions as a necessary complement in co-creation. By building on the work of Cipolla and Bartholo (2014), we have highlighted two different manifestations of the relationship between empathy and lived experience: “I—It” and “I—Thou”. Furthermore, we have shown the interdependent nature of empathy and lived experience within co-creation, and the importance of working toward “I—Thou” relationships by integrating both in reciprocal co-creation. In calling for more research on lived experience and reciprocal co-creation, we have highlighted a number of lingering questions that will be important for service design research and practice to address moving forward.

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# Collaborative services in the Italian city of Reggio Emilia. The case study of “Il Quartiere Bene Comune - The Neighbourhood as Commons”

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## Abstract

“The Neighbourhood as Commons” is a public policy that involves every Reggio Emilia's neighbourhood in a massive co-design process with citizens, associations and various stakeholders to develop innovative services aiming at improving the quality of community life and urban environment. The main objective of the municipality is to guide a transition from a public participation - in the traditional sense - to a responsible civic protagonism, both in associative and individual form. Through the “Citizenship laboratories”, participants are called to co-design a concrete activity that is formalised into a “Citizenship Agreement” and becomes an actual public-interest service. The key role is played by the Neighbourhood Architect: a representative of the municipality who is entitled to guide the whole process. Currently, 25 Citizenship Agreements have been signed by 695 actors (profit/no profit association and citizens) involved in 152 projects related to a variety of areas, such as urban agriculture, sustainable mobility, community welfare and digital innovation.

## Introduction

*Quartiere Bene Comune* - “Neighbourhood as Commons” - is an experimental public policy developed by Reggio Emilia City Council to find new ways of delivering services and interfacing with local community after neighbourhood councils suppression in 2011 by the Central government<sup>1</sup>. For small to medium-sized Italian cities such as Reggio Emilia which has 171.400 inhabitants, the suppression of these local councils became an opportunity to keep alive the process of decentralization by re-thinking the relationship centre - suburbs and to improve the collaboration between local authority and citizen on co-design social innovation projects (EC, 2011; Ave, 2005). With its strong sense of identity, every neighbourhood becomes the community hub by which to rebuild the relationship between

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<sup>1</sup> The National Law 42/2010 spelled the end of the ‘circonsrizioni’ - neighborhood *council* for all municipalities with a population under 250,000.

citizen, community and Administration in order to improve the quality of city life (Arena, 2006; Arena and Iaione, 2011).

In this framework, Reggio Emilia had been reconsidered its own role within their neighbourhoods following the suppression of the *'circoscrizioni'* and to identify new approach for interfacing with the local community differently from the traditional dynamics of civil participation and deliberative democracy (Manzini, 2018). To achieve this goal, the Municipality has built a public policy calls *'Quartiere Bene Comune'* based on these three pillars:

- a governance model based on civic engagement which include every stakeholder to developed efficient solutions with the public authority;
- a strategic planning approach where citizens are a part of every project's steps such as co-design, implementation, evaluation and monitoring phase;
- a professional public servant with specific skills calls 'Neighbourhood architect' to support the community engagement process, empower the relationship inside and outside of the community, foster social innovation and come up with creative solutions developed with a place based approach.

## Methodology, process and results

The Municipality identifies 18 neighbourhoods connoted by a sense of identity strongly perceived by the community where takes place a specific work process which has been outlined in a specific document approved by the City Council in December 2015. It comprises several different phases:

### *a. Territorial interpretation and community listening*

The interpretation of the urban context in collaboration with all of the Administration's internal services, in order to identify the main policy programs. The listening phase, instead, takes place through direct community participation tools such as on-site surveying, round tables, debates, interviews and targeted focus groups.

### *b. Co-design*

The co-design process takes place through a public workshop calls "Citizenship laboratories" where citizen and stakeholders in collaboration with the Neighbourhood architect could develop collaborative projects. Based on the examination of technical and financial sustainability by the Administration's internal services, the neighbourhood architect will then prepare a Citizenship Agreement proposal which are re-submitted to the citizens and stakeholders through participative and deliberative discussion processes, in order to reach the broadest possible consensus. This phase concludes with the stipulation of the Citizenship Agreement, the document outlining all the projects to be carried out in the neighbourhood with their respective goals and actions, the financial and material resources, and the "division of labour" between the Municipality and all the private entities involved.

### *c. Agreement*

The Citizen Agreement becomes formally effective once it is approved by the City Council, while it becomes factually effective once its projects are included in the service plans and schedules of the respective municipal offices.

### *d. Implementation, management and monitoring of the Agreement*

The implementation, management and monitoring of the projects outlined in the Agreement, are under the supervision of the Neighbourhood architect, who works to keep everyone active and involved.

### *e. Assessment and reporting of the results achieved and the impacts produced*

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The assessment phase is based on a system of numerical indicators for each project established with every participant in the Citizen Agreement. Also, the policy 'Quartiere Bene Comune' has set up a dashboard of indicators to measure its own overall performance in terms of participation levels, efficiency, effectiveness and social impact. According to this point, the following results for 2017 are recorded with regard to the effectiveness of the policy:

- Project carried out successfully 77,65%
- Positive collaboration with Neighbourhood Architect 98,21%
- Positive collaboration with Municipality of Reggio Emilia 59,64%
- Positive impact of economic resources available 52,86%

In 17 neighbourhoods, 896 participants were involved in the preliminary phases leading to the stipulations of Agreements, including associations, stakeholders and private citizens. The 25 Citizenship Agreements were signed by 695 stakeholders, and specifically 375 no-profit Associations, 300 individual volunteers and 20 private companies. Under the 25 Agreements, a total of 154 projects have been initiated, of which almost are related to strengthening services for the individual and the community.

## Case studies of collaborative design services

Following are described four projects as a case studies of collaborative design services.

### Foreigners: empowerment and social integration - Topic: Welfare

The project is focused on teaching the Italian language to foreigners living in Reggio Emilia as a first step for an incremental process of social integration and local empowerment specifically dedicated to women. The project is linked to the resolution of two main critical issues:

- reduction of the mobility problems of the participants through the opening of Italian courses re-located in the suburbs;
- activation of a babysitting service for the participants that could leave their children and following the activities planned in the course. After the first step, the participants have been asked to extend the Italian course with other collateral activities based on their skills and interests.

All this led the Municipality to re-launch the project in 2018 with more activities based on the knowledge of the foreigners as a process of improving their Italian language and professional skills. In addition, the project has involved many actors of the local community such as volunteers for the babysitting service or spaces giver for carrying out the activities. The experience is a model of innovation that will be extended to the whole Emilian road, which has similar social characteristics.

### Coviolo Wireless - Topic: Digital divide

The project helped to overcome the digital divide in the neighbourhood of Coviolo through a broadband wireless infrastructure. It allows people in a suburban area, that was lacking offers from the market, access to Internet guaranteeing an affordable service cost to the whole community. The funding of the infrastructure is from public sources (Local and Regional authority) while management costs are borne by the local community members. This bottom-up project has been implemented by a group of citizens affiliated to the Neighbourhood Social Centre of Coviolo, in collaboration with the Municipality of Reggio Emilia and Lepida Spa. Users have now access to high speed internet at an affordable

cost. “Coviolo Wireless” is one of the five winners of the European Broadband Awards 2017<sup>2</sup> and the experience will be extended to other five neighbourhoods of Reggio Emilia.

### Rural Greenway of Bagno, Corticella and Marmiolo - Topic: Sustainable mobility

The project is focused on creating a new greenway as a complementary path linked to the existing urban cycle network and local services (school, parish, local square) of three suburban neighbourhoods of the city: Bagno, Corticella and Marmiolo. The project is based on the needs of citizens who highlighted critical issues related to the lack of safety for pedestrians and cyclists which represent a physical obstacle but also a social barrier for the creation of a solid and active local network. The Greenway has been co-designed with the citizens and many part of the project has been implemented from availability and concession of their private land. The found solution is different from the traditional design method by reusing sections of disused paths or river embankments. The experience is a model of innovation which has been extended to other neighbourhoods of Reggio Emilia such as Rivalta, Pratofontana, Roncocesi, San Bartolomeo and Gavasseto.

### Social Agriculture in Nilde Iotti Park - Topic: Urban agriculture

Reggio Emilia has implemented a strategic plan to give value and promote urban and suburban agriculture. This tool affects both public and private green areas and it is intended to qualify areas and to promote new forms of social integration and cohesion by taking care of the urban green and encouraging farming activities. The experience of urban agriculture in Reggio Emilia is focused on the enhancement of vacant land through two main different approach:

- Agriculture as a strengthening of the sense of community and belonging with the experiences of the Edible park of Canali and the Fruit Tree Park of Castellazzo in which the orchard becomes a common good of the whole community who is recognized with it;
- Agriculture as a place for socialization and cultural integration. This is the case of the Orologio's garden which will be enhance through a new pilot experience placed in Parco Nilde Iotti where to rethink a model of social agriculture as a tool for welfare and the fight against poverty. In fact, this project insists in neighbourhoods with high immigration rates and welfare problems. The innovative side of the Nilde Iotti project lays in a model that focuses on the social dimension and is closely related to the issues concerning the Park and its surroundings. By May 2018 two scholarships have been offered to young researchers to support the experimentation by finding a sustainable management model which might keep together social and business

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### *Track 3: Measuring and evaluating*

Although service design is considered to be a consolidated discipline both in theory and practice, evidence that proves its beneficial impact can seldom be retrieved: theoretical frameworks for service evaluation are scarce and mainly refer to other disciplinary fields (service quality measurement, program evaluation, social impact assessment, and more), while service design practices rarely include any element of evaluation. In this context, measuring the value of service design and its impact on organizations, as well as evaluating services, becomes a crucial issue to push the boundaries of the discipline and reinforce its legitimacy as a driver of innovation.

The track seeks to explore the role of evaluation in service design theory and practice as a vehicle to explore and sustain the validity and efficacy of SD interventions in socio-economical transformations. In particular, the track welcomes contributions that investigate:

- how evaluation is embedded, or can be embedded, in service design and innovation processes, and for which purposes;
- theoretical frameworks and approaches (also from other disciplines) that can support the measurement of service design projects and existing services (both in public and private sectors);
- how current service design approaches can be adapted/adopted to support the evaluation practice.

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# About evaluation in service design: As it is and how it could evolve

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## Abstract

This paper reports on the role of evaluation in the service design field, reflecting in particular on contributions presented at the ServDes Conference 2018 in Milan, where the topic is explicitly introduced for the first time as a promising research and practical argument, to push the boundaries of the discipline and reinforce its legitimacy as a driver of innovation. It starts with a brief overview of literature on the topic, which highlights an increasing attention on measuring the value of service design and its impact on organizations, and goes on to examine some preliminary contributions on the evaluation of services as service design outcomes. After this, some reflections are made on how the papers admitted to the conference currently address these issues. Although we are still not fully aware of the evaluation potential and a shared vision still needs to be built, some trends on how the topic is approached by scholars can already be detected, and future challenges are envisioned for bringing the discussion to the next level.

**KEYWORDS:** service design evaluation, service evaluation, design value, service value, service design impact

## 1. The role of evaluation in service design

Although service design is a maturing field both in theory and practice, evidence that proves its beneficial impact can seldom be retrieved. Theoretical frameworks for service evaluation are scarce and mainly refer to other disciplinary fields (service quality measurement, program evaluation, social impact assessment, etc.), while service design practices rarely include any element of assessment.

Contributions on the role of evaluation in service design practice and on how to determine the value of service design are still rare and fragmented. Nonetheless, some service design scholars and practitioners (see e.g. Blomkvist, 2011; Foglieni and Villari, 2015; Løvlie et al., 2008; Manschot and Sleeswijk Visser, 2011; Polaine et al., 2013) have contributed to the

disciplinary debate on the topic. The discussion highlights two main areas of reflection: on the one hand, contributions reflect on the value of service design in the innovation process; on the other hand, discussions are about measuring the service value itself. These two levels often overlap and do not help really help us distinguish between service design evaluation and service evaluation (Foglieni et al., 2018).

Private and public organizations are becoming more and more interested in service design to reinforce their brands, improve customer satisfaction, accelerate new ideas, and/or create new markets. This entails both a growing demand for service design competencies and the necessity to reshape professional practice, and explore new disciplinary territories on the (McNabola et al., 2013).

In this evolving situation, new challenges related to contemporary societal transformations and economic changes appear for service design. Service design needs to better monitor the use of resources, and rethink the role of users and providers in the service processes and in efficient innovation processes. How to evaluate a consistent contribution of service design in a service success or how to measure the multifaceted contribution of service design in service innovation are prominent questions.

In this line, it is suggested that service design can broaden its perspective forward to an evidence-based approach (Carr et al., 2011) that includes a comprehensive measurement of the value of services consistently with the current socio-economic context. This means considering the evaluation of service as a strategic lever to increase the value of service design, also through design interventions that are based on solid, shared and shareable knowledge (Foglieni et al., 2018). In this context, measuring the value of service design and its impact on organizations, as well as evaluating services, becomes a crucial issue to push the boundaries of the discipline and reinforce its legitimacy as a driver of innovation.

The next sections describe the state of the art of evaluating the impact of (service) design on organisations (1.1) and the state of the art on evaluating services (1.2).

## 1.1 The value of design: a brief overview

Value can be assessed in many different ways, and opinions on what exactly is to be measured can vary widely among stakeholders. Manschot and Sleeswijk Visser (2011) argue that experience value (for people who use services) should be combined more with performance value (for organisations) in order to assess value of service innovation.

In design and design management literature there are some studies about the measurement of design value. Although it is a more mature topic in the broader design field, in service design this is still not well developed. The value of design is described through different levels of contributions. For example, design is considered as an economic lever, a strategic asset, a functional aspect, and a way for sense-making for technologies, products, and services.

The European Commission (2013), as well as Moultrie and Livesey (2009), consider the value of design in terms of its contribution to the firms' innovation. The most widely adopted model to measure design value is the 'Design Ladder' (Ramlau and Melander, 2004), which describes four different steps (no design, design as styling, design as a process, and design as a strategy) to measure design maturity in firms. Following this model, enterprises can jump from a level in which design has no importance to the highest stage in which design is fully embedded into company processes and strategies. Another model proposed by the Design Management Institute (DMI) analyses design value in relation to investment and design adoption maturity. DMI's 'Design-Centric Index' (Westcott et al., 2013) is focused on design investments and maps the best metrics for measuring and managing them in companies. Also in this case, design is considered in its aesthetic and functional dimensions or as a strategic resource and competence. Recently, design value in firms has been analysed through the design capability concept (Mortati et al., 2014; Mortati and Villari, 2016), which describes the impact of design in terms of three design capabilities: design leadership, design management, and design execution, which describe how design resources can be managed within organizations.

The model that explicitly mentions service design is the 'Public Sector Design Ladder', which describes three levels (design for discrete problems, design as capability, design for policy)

used by public organisations and decision makers to promote innovation. It outlines how service design processes and tools are adopted by the public sector in order to foster innovation.

Although these models are now widely discussed in the disciplinary debate (including the papers submitted for this track), a dedicated reflection on the measurement of the specific value of service design in innovation processes seems to be lacking. Is it possible to measure the impact of service design in this context? And on which variables, skills, processes or activities can its impact be measured in terms of the value created? What are the specific tools? What are the metrics? Do we need new competencies?

In our opinion, opening a debate on service evaluation and starting to operate it pragmatically, could contribute to making the specific contribution of service design to innovation processes clearer, more visible, and more measurable. Our vision is that in a few years it will be possible to talk about impacts on people and organizations at an economic and social level, both at micro and macro scale, as is already happening for the broader design discipline.

## 1.2 Measuring services

The previous section elaborated on evaluation of the impact of service design on organisations and innovation processes. This section describes developments in measuring the outcomes of service design processes.

Defining service success factors has developed in many different disciplines. In the private and public sectors, more attention is paid to quantifying results or making human experiences more tangible as success factors in services. Service design is gradually moving towards a service evaluation culture and quantifying its outcomes is something that is starting to be addressed in literature and practice.

Service evaluation finds its origins in other disciplines such as service marketing and management, and it is mainly connected to the measurement of service quality and customer satisfaction in relation to organizational performances. Metrics such as customer satisfaction, customer retention, net promoter score, conversion/retention rates, etc. are increasingly applied to evaluate services. Grimes (2017, p. 62) mentions in his article, “Six hacks for service designers working in agile settings” that “...more and more service designers are naming their data scientist and analytics team members as their BFF’s because creatively crunching numbers can reveal relevant data about service experiences”.

Nevertheless, it is still difficult to measure how service design can assess service value or how the existing measures can be applied to the service design field.

Referring to the service design field, Manschot and Sleeswijk Visser (2011) proposed a framework for the assessment of service design based on people's perceptions while using a service. They described two types of value assessment for service design processes: the value of system performance (attributed to the organization) measured through performance indicators, and the value of personal experiences (of service users). Combining success factors from a customer and a provider perspective has the advantage of greater understanding shared by business people and designers, enabling them to make informed innovation decisions from multiple perspectives.

There are, however, two challenges to measuring service success. The first is that measurements obtained through customer data, such as customer satisfaction (the most frequently used) mainly focus on the ‘what’ (i.e. how many people promote the service), and fail to include the ‘why’ (i.e. what do the qualitative and quantitative data mean?). This suggests that more effort must be made to integrate qualitative data into the dashboard of quantitative customer data sources. The second challenge is that many of these measurements evaluate parts of the service, i.e. focusing on one particular service touchpoint. Whereas the service experience evolves over longer time spans and includes an entire sequence of touchpoints, possibly involving other important factors in the overall customer experience, which may not be explicitly described from a business perspective. Løvlie et al. (2008) reflected upon how the value of service design practices could be measured, asking users how much they liked the designed services by using traditional service quality and satisfaction measurements. They realized that data on customer

satisfaction provided insights into acceptance of the service, but did not provide evidence on what works or does not work at organizational level. They thus suggested calculating the ROI of their design initiatives by: (i) small service prototyping activities with users; (ii) the use of a Triple Bottom Line to measure the organizational success; (iii) the use of a Service Usability Index to measure the quality of a service experience through four parameters, namely proposition, experience, usability, and accessibility. Similarly, Lievesley and Yee (2012) considered embedding the Social Return On Investment (SROI) evaluation process in the service design projects, adapting existing service design tools. Other literature refers to service ideas evaluation. This mainly discusses the prototyping activities done during the different stages of the service design process. Prototypes in service design are used to explore, evaluate, or communicate service solutions to various stakeholders (Blomkvist, 2014; Holmlid and Evenson, 2008; Wetter-Edman, 2011). In service design, it is a big challenge to frame clearly what aspect of a service design concept needs to be evaluated, since a service concept involves many different elements (objects, touchpoints, interactions, etc.) that are interconnected and influence each other. It is simply not possible to prototype an entire product-service system in use (Sleeswijk Visser, 2014).

*Services are complex, comprised of multiple interactions with multiple touchpoints, over widely varying time spans. While the re-design of a touchpoint can deliver concrete numbers indicating success, things get much more complex at a service level, when multiple touchpoints come into play. (Grimes, 2017, p3).*

Prototyping activities can be conducted within design teams or through collaborative sessions involving users, providers, and different actors of the service ecosystem. Evaluation is useful for guiding the early stages of the process, such as the research phase, and to define criteria by which to prioritize ideas, identifying those more coherent to the brand in the design and in the development phases (Foglieni et al., 2018). Foglieni, Villari, and Maffei (2018) propose an evaluation framework for re-designing services that embeds a service evaluation strategy into the service design process. The framework is based on the idea of reinforcing, or enabling, a critical process of learning and change for organizations that deliver services, and for the people who use them, focusing on service value. In particular, the authors propose a service design process that integrates four evaluation stages: evaluating the existing service, evaluating and developing concepts, evaluating prototypes resulting from this development, and evaluating the new or renewed service (see Fig.1). The authors then define service evaluation as “...an activity aimed at determining the value of a service before and/or after the service design intervention, as well as the value of concepts and prototypes defined and developed during the service design process” (Foglieni et al., 2018, p. 82).

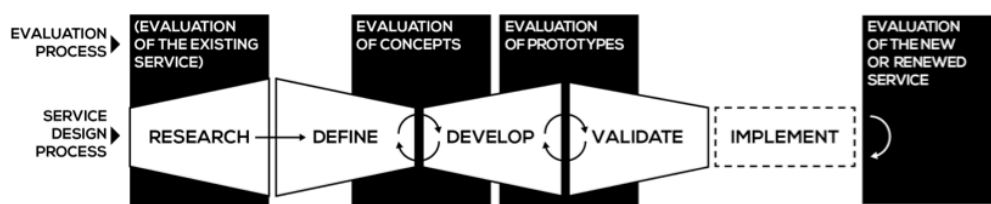


Fig. 1 - The integrated process of service design and evaluation (source: Foglieni et al., 2018, p. 82)

This represents the first attempt to contribute to the international debate by proposing a practical approach, which however still requires testing and further exploration. To conclude, a multidisciplinary perspective on service design and service design evaluation still seems to be missing. Related disciplines (e.g. social design, transformative learning, organizational change, policy making, societal implementation) could bring in more evaluation techniques to make the changes tangible and include them as an integral part of the process. A long-term effect cannot be made immediately tangible and is certainly not quantifiable in immediate success factors. However, is that not precisely what many service design projects

are about? Besides better services, does service delivery not require constant improvement in order to meet user needs whenever possible? Service design ranges from incremental improvements to touchpoints and service experience journeys, to radical innovations when new possibilities appear on the horizons in near or even distant futures.

## 2. Approaching evaluation from multiple perspectives: a fragmented discussion

It is rather notable that while academics and practitioners strongly address the need to develop more ways of measuring and evaluating service design strategies, the number of contributions submitted to this track was rather low. We expected more input on new models to evaluate service design as a process, and more knowledge on how to evaluate services by combining insights on system performance and customer experiences. Moreover, some of the submitted contributions did not fit the track topic, namely 'Measuring and Evaluating service innovation and service design', but discussed, for example, user involvement processes for feedback on service ideas, or focused on other aspects of design process reflections, thus failing to focus particularly on evaluating service design and its outcomes.

The four accepted papers mainly introduce academic perspectives on the evaluation of service design practices. Only one paper addresses service evaluation in particular, by adding Net Promoter Score (NPS) data in journeys as input for designers.

This paper by Følstad and Kvale (2018) shows a method of evaluating touchpoints with feedback from customer reports and NPS. Using data sources such as NPS is quite common in the Customer Experience field and now service designers are increasingly adopting it. The paper describes a case study in which transactional NPS data is used to measure the value of a service from the customers' point of view, and how this data can be informative for service designers. The results indicate that the transactional NPS provides information on customer experience at single touchpoints, but further information can be extracted for their experience of the entire journey experience, i.e. everything that customers consider important to their experience related to the service. Since qualitative feedbacks from customers often not only address a particular touchpoint (e.g. last customer service contact) but also *spillover* data (other aspects of the service provider and its offerings), this type of data might be relevant for use by service designers to identify opportunities for service improvements. Another finding from this study shows that low scores from customers are particularly interesting because they reveal real customer pain points. In addition, middle scores are also valued as interesting data for service designers in this particular case, whereas, in brand NPS, middle scores are usually ignored in data analysis. The middle score reviews in this study provided more nuances (both positive and negative) than the high or low score reviews. This could be of interest for designers because it puts more focus on the overall customer experience.

The three other papers discuss various approaches to evaluating design practices. They cover design capability in organisations and all describe attempts to evaluate using criteria that are meaningful in such processes.

The paper by Björklund et al. (2018) describes how to measure the impact of design and design thinking in organizations at different maturity levels by using the Danish Design Ladder. The author created a table where various currently available metrics are plotted on the levels of the Design Ladder, dividing external and internal metrics. This table provides an interesting overview to evaluate design processes, including a variety of metrics and keeping a clear perspective on the various levels of design (financial performance, customer related metrics, number of design projects and of those dedicated to design budgets, ROI's, team effectiveness and collaboration, employee satisfaction and engagement, etc.).

The paper by Yeo and Lee (2018) discusses the intangible process of transforming public organizations into organizations with design thinking at the core of their innovation processes.

They present a Design Capability Mapping tool (both in digital and physical form) to allow employees in a public organization to evaluate the way design is currently used at different stages of project development, and articulating a vision for how it should be used. The tool is exemplified in one case study based in Singapore. The case highlights how the tool was received and used as a conversation piece to reach a shared understanding of current and desired use of design among the participants. In particular, the collaborative aspect, i.e. discussing individual evaluations in teams, clearly demonstrated how people differ in their understanding of the implications of applying design thinking. In addition, the following issues were identified: conflict between the wish to innovate and resistance to change; the risk of adversity to using the tool on the part of senior management, or their influence on design processes

Furthermore, the paper addresses the importance of shared vocabulary, especially regarding the limited number of facilitation tools available for creating a common language about what design is and how it should be used in (public sector) organizations.

The last paper from Kusano et al. (2018) describes a case study about the effectiveness of the workshop for service creation by non-designers (developers and researchers in ICT). The workshop aims to fuse multiple viewpoints, such as human-centred, technological and business viewpoints, and to synthesize diverse opinions with various stakeholders. They propose a set of questions to evaluate the workshop itself in terms of the knowledge gained by 'non-designers'. The goal of the workshop was to understand and to utilize the diversity of participants for service creation. The other objective was to understand the concept of multiple viewpoints in service creation. The authors describe a detailed programme of a two-day workshop that has three features:

- Selecting a target user from workshop participants and closely considering the target user;
- Dividing work time of individual and group activities to make the most of the diverse opinions of participants;
- Taking the human-centred, technological and business viewpoints in isolation and then synthesizing a multi-viewpoint understanding.

### 3. Reflections on experiments of evaluation in service design

Looking at contributions currently available on the topic, with particular reference to those discussed in the previous section, we can reflect on how evaluation is treated in the field of service design and to what extent it is perceived as important and useful in both the measurement of outcomes and related success factors, and in benefits at organizational and business level.

While the measurement of design value has received some attention in the last decade, leading to the definition of scales and metrics for determining the degree of maturity of organizations in the adoption of this kind of approach and competence (as well as how they relate to innovation), so far efforts to transfer this knowledge to the specific case of service design has not produced structured and acknowledged results.

The service design community has just started to tackle this need to provide evidence of the value of service design in different contexts and organizations. Nonetheless, though we are still in a speculative and explorative phase, based on experiments and situated reflections that can seldom be replicated (and thus being far away from supporting the discipline's proof of concept), some trends on how the topic is approached by scholars can already be detected. They are described as follows.



### *1. Working for legitimization*

When it comes to introducing evaluation into service design, in most cases, the purpose is to open up the way or reinforce its legitimization as a strategic approach for success and innovation. This is also true of contributions in this track. In fact, all the papers report on reflections and experiences aimed at demonstrating and confirming the validity of the approach and tools, on the one hand, and the maturity level of organizations in adopting service design, on the other. Their purpose is to justify investments and demonstrate the role claimed for service design as a driver of innovation. Kusano et al. (2018) reflect on the validity of a workshop format as a tool for design with ICT specialists, which triggers further reflections on the importance of measuring the appropriateness and relevance of common service design tools, given their increasing adoption in non-design fields by non-designers. Følstad and Kvale (2018) propose to broaden the use of NPS to pre- and post-versions of a service, as an indicator of the value of service design projects and to quantify the validity of the intervention.

In terms of maturity measurement, Björklund et al. (2018) attempt to transform the Design Ladder (Ramlau and Melander, 2004) into an operational tool for measuring the impact of (service) design on organizations through the identification of metrics typically adopted at each maturity level. Similarly, Yeo and Lee (2018) propose a tool to be used by public service organizations to capture their propensity and aptitude to embed design at various organizational levels: individual, teams, and systems.

### *2. Clarifying the focus of evaluation*

Although a shared vision on what to evaluate in order to prove the legitimacy of service design is still lacking in these and previous contributions, some recurrent evaluation focuses can be identified. In this sense, a distinction needs to be made between cases in which evaluation addresses services as service design inputs or outputs, and cases in which it addresses the impact of service design adoption on organizations. When evaluation addresses existing services that need to be redesigned, or solutions emerging from service design projects and interventions, the focus is mainly on customer experience and financial performances (see e.g. Grimes, 2017; Løvlie et al., 2008; Manschot and Sleeswijk Visser, 2011). Accordingly, referring to contributions discussed in this track, Følstad and Kvale (2018) suggest focusing on the likelihood of a service being recommended, as a measurable source of user insights in support of service designers. While Björklund et al. (2018) assert that sales, revenues, ROI, customer satisfaction and feedbacks are the easiest available metrics for assessing the difference between services developed with and without a design approach. They also remark on a shift from the use of financial metrics to more qualitative and customer-centred ones as companies mature toward design approaches.

On the other hand, when the purpose of evaluation is to assess the impact of service design on the organization, measurements seem to concentrate on the level of learning acquired and changes implemented, beyond, of course, the willingness and tendency to invest in this kind of competence and activity (see e.g. Moultrie and Livesey, 2009; Ramlau and Melander, 2004; Westcott et al., 2013). This is in line with the work of Yeo and Lee (2018), who propose to map design capabilities in organizations by means of a questionnaire. They investigate the understanding of design, work practices and current organisational dynamics of officials in public organizations, in order to build awareness and identify gaps. Yet again, Björklund et al. (2018) report that when design is fully embedded into organizations, its impact on the working culture is measured through employee motivation, engagement, team collaboration, and effectiveness.

### *3. Embedding extra-disciplinary knowledge*

Lastly, looking at existing measurements for evaluation in service design, a weak awareness of the need to rely on extra-disciplinary knowledge on the topic seems to emerge, especially when it comes to quantitative measures. In fact, these often require specific, technical skills (Bailey, 2010; UNEG, 2016) that do not usually belong to service designers (nor are they taught them). Thus, acquiring evaluation models and theories from related disciplines seems to be the way to tackle this need, with the possibility of developing variations that can better serve the design field. Not by chance, metrics identified by Yeo and Lee (2018) clearly

belong to related service design disciplines, namely (service) marketing and management evaluation culture. This applies in particular to the evaluation of existing services and newly-designed service solutions, and it is linked to an awareness, starting to be expressed by some in the field, that we need to start systematically evaluating before and after service design interventions. Doing so would enable, on the one hand, reliable shared standards to be developed for service success and, on the other hand, the impact of service design to be assessed through the resulting measurable differential (Drew, 2017).

Følstad and Kvale (2018) suggest using the NPS to achieve this purpose since, despite not belonging to the design culture it is easy to understand, operate and analyze. Moreover, it looks particularly suitable for matching quantitative measures and qualitative insights, which are daily bread for service designers. The same tool is also proposed by Kusano et al. (2018), who applied it to their evaluation of the workshop format, proving its versatility to different purposes.

To sum up, in relation to evaluation as a support practice for service design, we can affirm that the community still seems more oriented toward its use for legitimization purposes, especially in relation to measuring its impacts on organizations. However, awareness is also starting to grow with respect to further applications that are more focused on the evaluation of service design outcomes rather than its approach, process, and tools. This makes us wonder what will come next, and express some considerations about future challenges that service design may have to overcome, in order to evolve and acquire more importance in the field.

## 4. Final considerations and future challenges

Given the short overview on the state of the art of evaluation practice in service design provided in the first part of this contribution, and with reference to papers submitted and accepted by reviewers for this track, we must admit that work still needs to be done to formulate a common vision of what evaluating service and/or service design means.

The role of evaluation in service design theory and practice remains underexplored, while measuring the effects and impact of service design outcomes continues to grow in importance, but as a rather fragmented activity. So far, for the majority of people, it is a way of legitimizing the use of service design itself. For others, it means adopting particular tools or metrics to validate certain results or measuring consistency between hypotheses and results. For others again, it is starting to become a useful guide for running an effective design process and assessing its outcome for various audiences.

With particular reference to contents discussed in this track, as mentioned above, we are undeniably dealing with practical experiments in evaluation. What seems to be missing however is a more structured and, why not, theoretical reflection on possible frameworks that could address and expand the discussion on how and why to measure the value of services and service design in companies and organizations.

After all, we must also admit that this fragmented and undefined nature implies a huge opportunity for both scholars and practitioners to further explore the topic, and to build and reinforce an evaluation culture in the service design community.

From our perspective, this is a promising area for both service design research and practice. As researchers, we need to further reflect and investigate on these issues in order to establish a common knowledge framework on which to base our experiments. As practitioners, we need to build and/or reframe tools and approaches to be able to evaluate our work and give it the solidity required for service design practice to be better framed and further acknowledged.

The first challenge is for sure to understand what the difficulties are in approaching the topic and start developing a clear and shared vision: what do practitioners expect from evaluation? What is their current knowledge and understanding? Are they aware of the need for such activity to be embedded into their daily practices? And of the value of making it so?

Secondly, we need to understand how to relate to extra-disciplinary knowledge and competence to fill the gap currently occurring between the peripheral role of evaluation in service design, and the potential it could achieve in supporting the design of better services and establishing a continuous process of innovation.

Finally, we need to provide proof of service design legitimacy. Questions to be answered in this case are: what kind of extra-disciplinary knowledge should we address? And what in this knowledge are we effectively able to handle? What skills do we lack to properly face this challenge?

We hope the track and the emerging reflections can contribute to stimulate further research and professional projects that reinforce and enlarge the current debate on evaluation in the service design field.

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# Measuring the impact of design, service design and design thinking in organizations on different maturity levels

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## Abstract

While there is increasing interest in design, isolating its effects in compound results is challenging. Indeed, several studies point to practitioners struggling in finding appropriate metrics for their needs. We review extant design, service design and design thinking literature, mapping metrics to the different levels of design utilization in organizations suggested by the Danish Design Ladder. Our mapping reveals a particularly pronounced lack in appropriate measures at the final level of design as strategy. Furthermore, we identified extant metrics to reflect two groups of external evaluations – market and customer reactions – and four groups of internal evaluations of outcomes and operations. Moving on to more extensive or mature levels in design utilization, the emphasis on and variety of internal metrics were found to increase. Our illustrative case study of measuring design outcomes at OP Financial Group suggests this may be due to a shift in the aim of measurement from overall legitimization to more nuanced development.

**KEYWORDS:** design, design thinking, service design, metrics, design utilization, organizational maturity, legitimization, development, The Design Ladder

## Introduction

During the past decade, much has been written about the strategic value that design, service design and design thinking can add to organizations. Various reports have established a positive effect of design on project and company outcomes, such as product success and company brand (e.g., Candi et al 2010) and company profitability (e.g., SVID, 2008; The Design Council, 2008). The Design Management Institute's Design Value Index has shown the portfolio of "design-centric" companies to outperform the S&P 500 now for several years in a row (Rae, 2016). However, the time lag and intervening variables in achieving effects, and the very breadth of the potential impact of design make these measurements

difficult. The comparisons remain on a relatively high level of analysis, making them “nice to know” but not necessarily metrics that can be used for managing and developing operations in a company.

Despite the wide-spread interest on design thinking among practitioners, there remains an internal need to demonstrate its usefulness in large organizations. “Selling” design in business organizations and educating managers to think like designers can be seen as problematic (Carr et al., 2010). This can be legitimized by first offering proof of concept through the involvement of external experts, then developing internal success stories, and finally developing project-based metrics to measure the effect of design (Rauth et al., 2014). Indeed, the work conducted by Rauth and colleagues suggests that organizations will have different needs according to their level of adoption of design thinking – necessitating “more explicit ways to prove [design thinking’s] value once the initial honeymoon was over”. Frameworks for assessing the maturity of design usage in organizations typically consider both applications areas and extent of design efforts. The Design Ladder (The Danish Design Centre, 2001, see also Figure 1, below) describes four different maturity levels of using design in organizations – non-design with a lack of systematic use of design, design as finishing touch of form giving, design as an integrated development process, and design as a key strategy in business models. Similarly, the Design Value Scorecard (Westcott et al., 2013) tracks the maturity of design (ranging from ad hoc utilization to optimized, proactive processes) against three areas of utilization in the organization:

1. development and delivery (aesthetics and functionality),
2. organization (connecting and integrating)
3. strategy and business models

The Design Maturity Matrix (Artefact, 2015), in turn, has five maturity levels (initial, adopted, managed, integrated and driven) that are assessed relative to five different areas in organizations:

1. empathy (the organization’s understanding of its customers),
2. mastery (the organization’s quality of execution in design thinking and crafting)
3. character (the maturity of the organization’s support for design, design thinking and of professional designers)
4. performance (the market response to the design output of the organization)
5. impact (the maturity of the organization’s actions around its cultural, social and environmental legacy through design)

All of these three frameworks (the Design Ladder, the Design Value Scorecard and Design Maturity Matrix) suggest a progression from the outskirts of the organization to its very core. Attempts to create metrics for the impact of design, however, have rarely taken into account these different levels of organizational maturity and areas of application of design, making it difficult to create or choose metrics that are fitting to the organization at hand. As a result, most companies do not measure the effects of design in their organization (DROI, 2012; Schmiedgen et al., 2016).

The current study reviews existing metrics, combining them with the four-step Design Ladder (The Danish Design Centre, 2001). As research on measuring the impact of design is still rare, and the entirety of service design is still an emergent field (Fayard, et al., 2017), we were unable to conduct a formal literature review within measuring the impact of service design, rather we searched for metrics and relevant results in the context of design in general, service design, and design thinking alike (with search words such as impact, metrics and measurement). This necessitates examining the broader impact of design. As Foglieni, Villari and Maffei (2018) point out, there are two streams related to service design that can be evaluated, one being the service itself and the second being “the evaluation of service design as an approach that can bring value to organizations” (p.71). The current paper focuses on measuring the impact of the latter, as while demonstrating the quality and impact of the

products, services and programs created can certainly be helpful, design and designers have likely represented only a portion of contributors towards the end result and isolating their effect may be challenging. Thus demonstrating the quality of the end results is insufficient for demonstrating the usefulness of design, service design or design thinking in organizations.

The Design Ladder was chosen as the framework for mapping the found metrics as it has been utilized in one of the largest design maturity rankings to date, with the Innobarometer collecting self-ratings from 13 112 European companies on which level of the ladder they were (BEDA, 2017). In this single question self-assessment, design as form-giving was reported by 14% of the respondent companies, and the last two ladders of design as an integrated process and design as strategy were reported 18 and 12% of the companies, respectively. However, a full 37% of respondent companies did not use design at all and 17% of companies were on the first level of the ladder, using design only occasionally. Only 2% of respondents had marked not knowing the answer. This not only illustrates the variety in design utilization – and hence subsequent measurement needs – at European organizations, but also suggests that the Design Ladder possesses sufficient ease for organizations to map their operations against.

In addition to mapping the found metrics to different levels of the Design Ladder, we grouped the found metrics according to thematic similarity (criteria in the categorization processes are explained in more detail below). We then present an illustrative a case study of advancing design and measuring its impact in OP Financial Group to work though how these measurements may be used in practice, identifying potential benefits and challenges. Finally, we provide recommendations and ideas for future research.

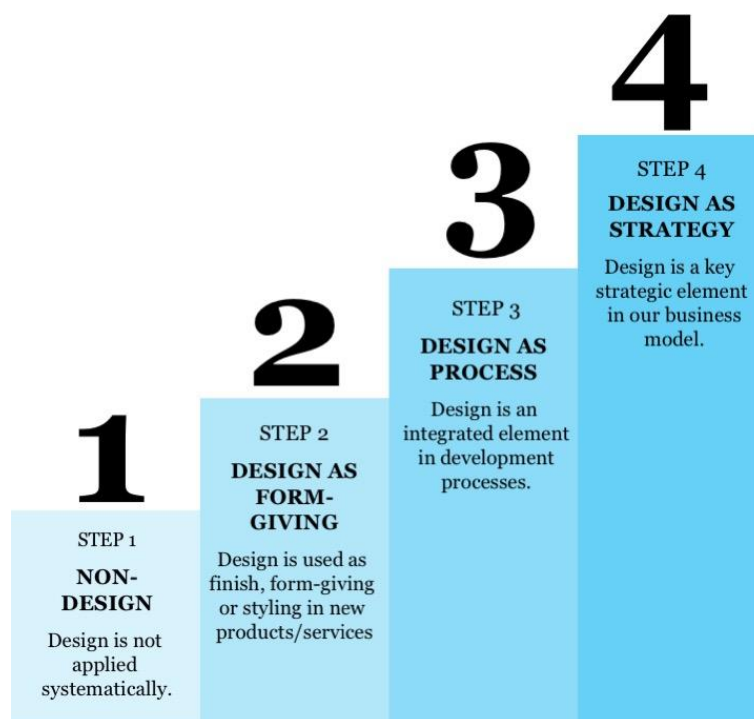


Figure 1. The Design Ladder (based on the Danish Design Centre, 2001)



## Mapping suggested metrics to the Design Ladder

Reviewing extant literature on measuring the impact of design in organizations, we grouped the suggested metrics of each literary source according to which level of the Design Ladder the metric would be suitable. This was based on three criteria: thematic similarity of what was being measured to the scope and role of design described on each level, addressing needs of legitimization and justification of the material and immaterial investments made in design at each level of the ladder, and finally, demonstrating growing the scope of design utilization in the organization. We note that there are several potential reasons and audiences for impact measurement, and have focused primarily on evaluative or summative measurements used as proof of something working, rather than formative measurement of the design output as such, aimed at improving the design (Drew, 2017).

### Non-design (level 1) – external benchmarks

On the first maturity level, design is used only sporadically, and as a result, measuring its impact is unlikely. This first stage could be compared to the first-step legitimization tactic of offering a proof of concept through the involvement of external experts (Rauth et al., 2016), pointing to the positive impact of design in other organizations: Anecdotes of the impact of design in other companies, found in numerous presentations, trainings, books and for instance [www.thisisdesignthinking.net](http://www.thisisdesignthinking.net). Practitioners also refer to the large number of design agencies acquired by large organizations and increasing design-oriented venture capital in recent years as a sign of the increasing commodity of design in organizations (Maeda et al., 2017, 2018).

Organizations on this level might also find studies on the effect on design on organizational performance. For example, the Design Management Institute's 2015 Design Value Index, based on a portfolio of 16 "design-centric" companies, shows a 211 % return over the S&P 500, making it the third year in a row for results in excess of 200 % over the S&P (Rae, 2016). To qualify as "design-centric", the companies of the index needed to meet a set of six criteria:

1. Design operates at scale across the enterprise.
2. Design holds a prominent place on the company organizational chart, and either sits on the leadership team or directly reports to a leadership team member.
3. Experienced executives manage the Design function.
4. Design sees a growing level of investment to support its growing influence.
5. Design enjoys senior leadership support from the top tier of the organization.
6. The company has been publicly-traded on a U.S. exchange for the last ten years and thereby adheres to GAAP accounting rules.

A similar comparison from a decade earlier shows how share prices of UK companies that use design effectively have outperformed the rest of the market (Rich, 2004).

The Design Council's (2008) report (based on a survey of 1500 business, out of which 250 were identified as "design alert", and interviews with 503 businesses) highlights that businesses that increased their investment in design over the past three years also increased their chances of turnover growth. They also found that businesses that see design as integral are more than twice as likely as others to see rapid growth. Examining the Innobarometer data, in turn, revealed that only 44% of companies that did not utilize design had introduced a new innovation, whereas 94% of those self-reporting as at the highest ladder had introduced at least one innovation (BEDA, 2017).

### Design as form-giving (level 2) – external and internal metrics

On the second maturity level, design is used as a finish, form-giving, or styling in products or services. In addition to the very high-level comparisons between a company's "design-

centricity” and its financial success, more detailed explanations are sought. For example, companies’ efforts in product design have been shown to attract investments. According to Aspara (2009), investor’s positive product design evaluations tend to generate optimism about the financial returns of a company’s stock – and even elicit “extra willingness” to invest in the company, over and beyond its expected financial returns.

In addition, comparisons between specific design endeavors and certain financial key performance indicator become relevant on the second level. A redesign of a package may lead to sales increase in a given product, for example, or new product design may lead to cost savings, reductions in time to market or external recognition in the form of awards (Westcott et al., 2013). Companies may start to compare those KPIs already at use in the organization between those products and services where design has been involved and those that have not utilized design, looking increases in sales, revenue and return-of-investment, as well as customer satisfaction (Schmiedgen et al., 2016). Of the minority of organizations that do measure the impact of design thinking, a survey of 403 companies suggested external measures of customer satisfaction and received feedback were the most common metrics (Schmiedgen et al., 2016).

Towards transitioning from level two to level three, practitioners in technology organizations may also track or benchmark the ratio of designers to developers. Venture firm Kleiner Perkins (2017) and Techcrunch (Field, 2017) draw attention to a number of leading companies increasing the proportion of designers on their payroll, such as IBM jumping from a ratio of one designer to 72 developers in 2012, to one designer to eight developers in 2017. Growth in the design budget can also illustrate extending the reach of design (Westcott et al., 2013).

### **Design as process (level 3) – internal and external metrics**

On the third level, design has become an integrated element in product or service development processes. Here design is not an add-on, something that is performed on a product or a service, but an integral part of the way products and services are developed. Designers have a role in the beginning of the development process, where they seek to understand customer needs, and products and services are then designed to meet these needs. Design becomes design thinking.

As the advocacy of customers has now moved into the company in a form of designers, measurements from the customer’s point of view increase in relevance whereas traditional means of performance measurements are often found ill-suited for evaluating the impact of design thinking. This means analyzing customer feedback and measuring satisfaction, net promoter scores, or brand loyalty, for example. Also conversion, lifetime customer value, and market share may be measured. (Schmiedgen et al., 2016, Westcott et al., 2013) In addition to such external measures, internal and offering metrics linked to customer satisfaction may be tracked, such as customer centricity and offering related usability metrics (Schmiedgen et al., 2017). Roth and Royalty (2016) also suggest adding an internally judged measure of outcome value and novelty, based on an average of anonymous ratings provided by the team members.

Even though traditional KPIs such as sales numbers, ROI per project, and other financial measures are still valid, it becomes more relevant to measure the value of design thinking internally. This means measuring design thinking activities, such as the number of projects, concepts finished, or people trained in design. Also internal feedback at different stages of the design thinking process can be collected. (Schmiedgen et al., 2016)

Roth and Royalty (2016) suggest a number of measures on the internal process rather than project outcomes or the involvement of designers. Based on data from interviewing design thinking trainers in four organizations, they suggest measuring three running totals in projects: the number of days gone without contact with end users, number of users spoken

to, and the number of categories of users interacted with (such as elderly users or millennials). They also suggest listing prototype iterations, to measure both the overall amount and concurrent, parallel prototypes, as these have been linked to stronger outcomes in previous research.

Finally, Foglieni and Holmlid (2017) propose a 3-by-3 framework for service evaluation. with before, during and after use of the service. From the provider sphere, they note that profitability, feasibility, effectiveness, assurance, empathy, responsiveness, efficiency and productivity can be evaluated. From the customer sphere, desirability, credibility, brand equity, customer satisfaction, customer effort, social significance, loyalty and recommendation can be tracked, and from the joint sphere, visibility, accessibility, utility, interactivity, engagement and reliability can be evaluated. Although perhaps more geared toward improving the services, changes in these measures can be used to demonstrate the effects of design efforts.

#### **Design as strategy (level 4) – internal metrics**

As design moves to a strategic level, it becomes the way of doing things, rather than a part of the offering development process. On this level, design thinking is used for identifying new business opportunities or business models, or even for transforming the organizational structure to support customer-centricity. The subject or target of design is thus no longer limited to the products and services of the company. Organizations may continue to measure brand perception, market valuation and profitable growth (Westcott et al., 2013), however, the traceability of changes in these to design specifically – rather than other factors – is weak. For example, Cisero and colleagues (2017) have suggested measuring strategic KPIs, design principle metrics and overall business goals to help design for business impact to see whether better designs are effective in pursued strategies and whether the strategies in turn are effective for business performance. Entering new markets might be connected to strategic design, and the seniority of design positions within the organization can illustrate a change in the relative prestige of design in the organization (Westcott et al., 2013).

While these and the metrics on the previous three levels remain relevant, they do not offer much information for improving operations further. Indeed, many organizations reported that while they used these measures, they did not find them particularly valuable (Schmiedgen et al., 2016). Only the suggested metrics of Roth and Royalty (2016) are specific enough to suggest specific behaviors. They may in turn be rather laborious to track on a continued basis and require some training for accurate measures – the number of prototype iterations, for example, may not be that straightforward when design thinking or service design is applied in for example HR policy rather than the user interface of a mobile application.

We struggled to find metrics for isolating the effects design on a strategic level. However, another aspect that characterized the fourth level is design assimilating to the core of the company and its operations, suggesting a relative gain in the importance of internal measures. Rauth and colleagues (2014) describe a company measuring employee satisfaction scores to illustrate how the spread design thinking had affected employees, and Schmiedgen and colleagues (2016) found a few organizations that measured the impact of design thinking on working culture through employee motivation, engagement, team collaboration and effectiveness. In the context of educational outcomes, Roth and Royalty (2016) suggest measuring creative agency scores to demonstrate gains on a 11-item self-report survey. They also suggest sampling team collaboration through Interaction Dynamics Notation (Sonalkar et al., 2013). While perhaps unrealistic for corporate use, this would allow academics to measure potential changes within organizations under study.

## Thematic categorization of the found measures

After mapping extant literature to each of the four levels of the Design Ladder, we proceeded to classify the found metrics according to what they measured. First, the metrics were divided into *external* and *internal* metrics based on whether they examined internal or external evaluations or operations. Market and customer reactions were classified as external evaluations, whereas employee assessments were classified internal, as were metrics on the internal operations of the company (such as the composition of staff). Second, internal and external metrics were grouped according to the thematic similarity of the target of measurement. Here, we found two repeated groups within external metrics – *financial performance* and *customer evaluations* – and four internal groups – indicators of the *extent of design usage* within the organization, internal evaluations of the *project outcomes*, *development process* metrics and *employee outcomes*. The resulting matrix of organizational maturity and metrics classifications is presented in Table 1 (below).

Table 1. Metrics for the impact of design on each level of the Design Ladder  
(with metrics from previous levels remaining relevant on subsequent levels, but with decreasing emphasis).

	Performance and operations	LEVEL 1 Non-design	LEVEL 2 Design as form-giving	LEVEL 3 Design as process	LEVEL 4 Design as strategy
External	Financial performance and valuation of the company	Benchmarking other, more design-centric, companies: Share prices Turnover growth Performance Acquisitions of design agencies Amount of innovations	Sales Revenue Return-of-investment (ROI)	Market valuation and market share Growth profitability	
	Customer related metrics		Customer satisfaction and feedback	Lifetime customer value Net promoter scores (NPS) Brand loyalty Brand perception Brand equity Conversion	
	Other		Product/service awards		Entering new markets
Internal	Design extent and emphasis indicators		Ratio of designers to developers Growth in the design budget	No. of projects No. of concepts finished No. of people trained in design	Seniority/rank of design positions within the organization
	Project outcomes		Cost savings Reductions in time to market	ROI per project Value and novelty of resulting service or product (averaging anonymous internal ratings) Usability metrics of resulting service or product	
	Development process			Internal feedback Amount and frequency of contact with users (running total of days without interaction with user, amount of users interacted with, amount of user categories interacted with) Amount and concurrency of prototype iterations (list with open/closed status)	Team collaboration (e.g. Interaction Dynamics Notation) Team effectiveness
	Employee outcomes			Customer centricity Responsiveness Empathy	Employee satisfaction Employee motivation Employee engagement

## Case OP Financial Group

### – design metrics on different maturity levels over time

To illustrate measuring the impact of design at different organizational maturity levels in design utilization, we investigated a case of an organization from an industry that traditionally has had very little contact with design – the financial sector. The selected case company, OP Financial Group, is the largest financial company in Finland, offering services in banking, non-life insurance, and wealth management for business-to-customer and business-to-business markets. The case description was formed iteratively and collaboratively based on both the experiences of two of the authors working in the design and customer research functions of the company, and based on discussions with design management staff in the company and going over company documentation.

In 2011, OP hired its first in-house designers in Oulu (a city in Northern Finland, 600 km away from Helsinki, the capital), where a new development unit was established. Using user-centered design methods, the first outcomes were two mobile applications that were, and still are, successful. At this low maturity-level, however, the impact and reach of design within the organization was still clearly limited in scope: the designers were working only within offering channels (mobile and web) and not on any business areas. The design practice itself covered both service and UX design right in the beginning of the development unit. The use of user analytics per application could be seen as early attempts to measure the impact of design in the very beginning. Later on in 2012, Net Promoter Score (NPS) measurements were launched in order to track whether customers would promote the applications to others. Despite the positive effects of using design methods, design practice did not at this time spread from the Oulu development unit to the headquarters in Helsinki and was carried out only in separate channels.

In 2014, steps were taken to extend the scope of design at OP. The Helsinki office formed a design subcontractor network to support business units. This allowed for inserting design to all business areas, but still kept design practice on a very operational level. Designers entered the development process usually very late in the project, only to contribute in user interface design.

Late 2015, OP started hiring more strategic designers, such as service and business designers. Nine new designers were hired to support the early stages of the development process, as well as to support business units in decision making by bringing in customer insights and by creating early stage prototypes. At this point, OP started referencing to the Design Ladder (The Danish Design Centre, 2001) in order to understand the level of design maturity in the organization. The goal was set on the fourth, highest ladder in the model. While reflecting on where the organization currently was on the ladder, OP started measuring “Design percentage” to capture how systematically design was considered in development projects. This represented the percentage of the development projects utilizing designers, design methodology, or design thinking at some point during the project from idea to launch. In January 2015 only 10 % of the projects utilized design, whereas in December 2015 the design percentage had gone up to 38 %. By the end of 2015, NPS had become a somewhat standard metric in the organization both on a brand level and on touchpoints.

As the whole financial sector is facing disruption, in 2016 OP announced its new strategy for aiming to become a multidisciplinary service company, expanding its offering to new business areas. The company also announced plans for almost doubling its investments on R&D. Both changes drive demand for design and designers not only in operational but also strategic design. During 2016, the OP designers already worked in ca. 150 projects, the

design percentage reaching 78 % by the end of the year. During that time, the role of designers had evolved to become members of the project team from the beginning to the end. This placed OP firmly on the third level on the Design Ladder, where design is an integrated process in the organization. While the design percentage allowed for a concise illustration of the growing extent of design in development projects – the percentage approaching 100 % – it no longer captured the extension in the role of design in the organization. New measures were needed to track and improve the impact of design.

In 2018 (as we write this article), OP is aiming at reaching the fourth ladder: design as strategy. Currently OP has 84 designers working daily (48 internal, 36 external designers) in an in-house design agency. This, in fact, makes OP Design one of the biggest design agencies in the entire country of Finland. When a company invests this much in a function, the need for measuring its value becomes pronounced. In a self-assessment conducted through the Design Maturity Survey (Artefact, 2015) in 2018, the five pillars of design capabilities ranged from managed to integrated, with cultural, social and environmental impact ranking as the most mature design capability in the organization. This highlights that while still informative, NPS and the design percentage no longer capture all of the intended targets of design. While one can separate the internal and external impact of design on lower maturity levels in the Design Ladder model, on the fourth level where design starts to become a strategy, it affects the organizational culture so widely that isolating the impact of design within a holistic service experience starts to become impossible and secondary. This led OP to decide focusing on measuring the internal impact of design in three different ways. As it had become acknowledged in the organization that design drives better business, external metrics no longer served their purpose.

Currently, in 2018, OP measures design impact in three different ways:

- 1) *Feature turnaround time.* When services and features are better designed, the development is faster. The focus is on developing only things which are meaningful for customers and drive business results. There is less waste in OP's development.
- 2) *Internal satisfaction for design projects.* After a project is finished, project participants are surveyed. They are asked questions such as "Did you learn something new?", "Did the design methodology bring new innovations?", "Would you recommend design tools to your colleagues?". This measures organizational learning and satisfaction in design thinking, and provides qualitative input for further developing the role of design in the organization.
- 3) *Innovation maturity in the whole organization.* Rather than track the impact of design on the end-result or sales numbers, for example, OP now strives to show the connection between design thinking and innovation maturity on an organizational level. A large sample of OP personnel is surveyed two times a year in order to understand the innovation maturity and the cultural change in the organization. Employees answer on a scale from 1 to 7 to claims such as "I find design relevant to my own work", "I have a possibility to learn how to apply design in my own work", "At OP, design is a key ingredient in developing new products and services", "Design is a key element in business development", "Design gives OP a competitive advantage". The survey provides an executive view on cultural change and design thinking maturity and gives actionable results for leading this change in the organization.

At this stage, aiming to reach the fourth ladder, the company has found these three internal metrics a sufficient base for further development efforts towards the final level of integrating design to strategy. When moving to the fourth level of the Design Ladder, the next step would be measuring the strategy in action – what are the concrete actions in practicing design as strategy and what are their impact to the business.

## Discussion and conclusions

While design, service design and design thinking are growing in popularity, measuring their impact is challenging due to difficulties in separating the influence of design specifically from other internal approaches affecting organizational outcomes. This is particularly evident on the higher maturity levels in design utilization, when the role of design transitions from form-giving to an overall process and strategy. Our review of the literature revealed scant metrics, with companies either not attempting to measure the impact of design at all or then looking for increases in financial performance or customer satisfaction (e.g. Schmiedgen et al., 2016) which might coincide with increased investments in design, but would not allow teasing apart the impact of design from other operations. While impact measurement literature were searched for in design, service design and design thinking alike, nearly all of the identified academic studies had been framed in terms of the impact of design or design thinking rather than service design. In general, practitioner literature was more abundant than scientific studies on the issue. Clearly there is more work to be done.

Comparing existing metrics and different levels of design utilization maturity, we suggest that as companies progress within the Design Ladder, the focus shifts from external to internal metrics. In the first two levels of the ladder, the main need for metrics is the legitimatization of design investments, first by referring to external benchmarks, and then by illustrating the gains made within the company through initial investments. Moving from the second to the third level of the ladder, tracking growth in the utilization rate of design provides feedback on the efficacy of efforts and highlights the transformation in the organization. However, as design becomes integrated to development efforts on the third level of the ladder, more nuanced measures are needed to inform of the state of design and design thinking within the organizations and track progress.

As design permeates strategy on the fourth, final level of the ladder, external benchmarks become even less useful. While companies may start to connect design to employee engagement and satisfaction at this level, most studies do not deal with metrics that would be particularly useful at this comprehensive level. Schmiedgen and colleagues (2016) suggest that project-specific traditional measurements and a story-based approach of showcasing each effort might be most useful. However, this makes comparison across projects, functions and divisions challenging, and might not be particularly helpful for informing subsequent development efforts in design and in the organization. As progress is crucial for development motivation (Amabile & Kramer, 2011), we would argue that organizations in the fourth level would continue to benefit from being able to systematically track the impact of design. This seems to be echoed in our case study of measuring design at OP Financial Group during the past six years.

Indeed, metrics that would allow isolating the effects of design are missing from all levels of maturity in design utilization. However, demonstrating improvement in traditional key performance indicators accompanied with increases with the utilization of design might serve organizations well enough in their legitimization and development efforts on the lower levels of the ladder. Once design becomes integrated to the operations of a company, more nuanced measures are required to support continuous development efforts. We would thus suggest that new measures for the impact of design are most needed on the most advanced levels of design utilization, where design is built-in in the organization. This could mean developing metrics to measure organizational development in design rather than measuring the effects of design per se, moving from evaluative to formative impact measurement (Drew, 2017). Proceeding on the design utilization ladder, design may have already gained legitimacy and a certain face value at the organization, lessening the need to demonstrate its usefulness. Organizational actors may become more concerned in gaining information that can be used in further developing *how* to use design, rather than *whether* or *when* to use it. Measuring such organizational development in design at OP, for example, could mean following how design thinking is applied on organizational level – tracking the evolution of

the organizational structure from company-centric to customer-centric – or how it is used in business model creation more specifically.

In sum, while measuring the impact of design remains elusive, current metrics may suffice in legitimizing increased organizational investments in design. The discrepancy between existing measures and organizational needs becomes more pronounced transitioning to design as strategic – here both academia and practitioners stand to benefit from a better understanding of the dynamics. The need for these strategic level measurements might be particularly pronounced in service design, the rise of which has been ascribed to designers seeing the necessity to “move upstream” in the innovation process with a more holistic approach (Fayard, et al., 2017). Longitudinal research, in particular, on strategic design efforts in organizations is acutely needed to illuminate the key mechanisms, effects, and successful practices in design to enable continued development as the organizational maturity level of design utilization grows.

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# Using the Net Promoter Score to support service design: Digging for gold in customer free-text reports

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## Abstract

Customer research is key to service design. However, current methods to obtain in-depth customer insight are resource demanding and rarely utilise available customer reports. In this study, we explore the widely used transactional Net Promoter Score (NPS) as a potential source of customer insight for service designers. Specifically, we explore the qualitative customer reports from transactional NPS. The study included the qualitative analysis of 1100 customer reports from a telecommunications service provider. We find that a proportion of customer reports clearly have potential as a source of customer insight, but that filtering is key. In particular, the detailed reports of low-scoring customers may provide the most valuable insight, as these can give a new perspective on the service process and a strengthened understanding of painpoints and potential improvements. We also discuss how the transactional NPS may be used more generally to assess the value and impact of service design.

**KEYWORDS:** customer research, Net Promoter Score, free-text reports

## Introduction

Customer research is critical in service design. The design of services requires insight into customers' needs and desires, typically drawn from extensive research of target customer groups. In particular, rich qualitative data based on observation or interaction with customers are needed to explore and discover insights that are actionable for service designers (Meroni & Sangiorgi, 2011; Polaine, Løvlie, & Reason, 2013).

To obtain such qualitative data, service designers apply a wide range of methods such as observations, in-depth interviews, diaries, customer journey mapping, focus groups and workshops. While highly valuable, these methods are limited in three important regards: First, they are highly resource demanding because of the substantial work required for research protocol development, participant recruitment, data collection and analysis. Second, data and findings may be challenging to structure and communicate because of their

contextual dependency and the interwoven character of the themes being explored. Third, identifying and recruiting the most relevant participants may be challenging, as knowing upfront who will make the most valuable contributions in terms of actionable insight is difficult.

Motivated by these shortcomings, we in this study explore a complementary source of customer insight for service design purposes: high-volume qualitative data gathered as part of the Net Promoter Score (NPS) (Reichheld, 2003), an approach to customer experience measurement widely used across service industries (Temkin, 2014). The broad coverage of the NPS in terms of participants and service areas makes it a promising candidate to strengthen service designers' toolbox for customer research.

Our study contributes case-based experiences on the NPS as a source of customer insight. We also use the findings to discuss how the NPS can be utilised to assess the impact and value of service design.

The rest of the paper is structured as follows. First, we provide a background of related work before detailing our research question and method. Second, we present the findings from a case in which qualitative data from the NPS were analysed as a part of a customer research initiative in a major telecommunications service provider. Finally, we discuss the lessons learnt and the implications of the results for service design.

## Background

In this background section, we provide a brief overview of customer research in service design and why the NPS may potentially complement such customer research. We also consider how customer research can be used to assess the impact and value of service design.

### Customer research in service design

Customer research, whilst relevant throughout the iterative service design process, is of particular importance early on in the discovery or exploration phase. A range of methods is applied in customer research, from general-purpose ethnographic methods, such as observation and interviews, to more targeted methods, such as service safaris, customer journey mapping and cultural probes (Meroni & Sangiorgi, 2011; Stickdorn & Schneider, 2011). A common characteristic of these methods is that they provide designers with rich qualitative data.

Customer research methods serve at least two partly overlapping purposes. First, they serve an explorational purpose, in which designers gain insights into the characteristics and opportunities within the context of the future service. In brief, it means they should enable designers to 'look at the world in a fresh way' (Design Council, 2015). Second, they help designers empathise with customers and identify uncovered customer needs, problems, desires, preferences or painpoints (Brown, 2008).

This dual purpose of customer research reflects the need for service designers to investigate and understand problems that need to be fixed and covered. Likewise, it indicates the necessity for service designers to broaden the design space exploring novel approaches and opportunities. This broadening may not necessarily result from identified customer needs or painpoints alone, but rather emerge as a consequence of seeing the customer needs in the context of changing service contexts or new technological opportunities.

### The NPS as a potential data source in customer research

Like the methods of the current service design toolbox, the NPS is an approach to gather data from customers. However, whereas the main purpose of service design methods for customer research is to provide rich qualitative data, the main purpose of the NPS is to be an actionable metric for service managers. The NPS can be implemented at the brand level (*brand NPS*) and at the level of individual service processes or touchpoints (*transactional NPS*).

(Reichheld, 2003). For our purposes, the transactional NPS is most relevant, and in the following, we only address this NPS type.

The transactional NPS is typically implemented as a brief questionnaire survey following a service process or episode. Customers are asked a single quantitative question on their likelihood to recommend (LTR) the service provider on a scale from 0 to 10, referred to as *the LTR question*.

On the basis of customers' responses to this one question, a NPS score is calculated. The NPS has been demonstrated to be a valid predictor of customer satisfaction and customer loyalty (de Haan, Verhoef, & Wiesel, 2015). However, to make the NPS score actionable, insight is needed on the drivers of customer experience which motivate the customers to give their scores. For this purpose, the quantitative LTR question is complemented with a qualitative *reason-for-score* question. Here, customers are asked to report, in their own words, their main reason for their score. These reports, as we will see in the presented study, are potentially a rich source of customer insight. This source may potentially be more efficient to access than other qualitative data sources currently applied for customer research.

Furthermore, the efficient access implies that qualitative data may be gathered from a larger number of customers, potentially broadening the range of the findings as compared to other qualitative methods.

Service companies worldwide are using the NPS to monitor customers' experiences of service processes. According to Temkin (2014), the NPS is among the most commonly used metrics for customer experience. Transactional NPS data is thus potentially available to service designers in a broad range of service companies. However, to the best of our knowledge, this resource is underexploited. For example, whilst Polaine, Løvlie and Reason (2013) in their book on service design mention NPS as a service quality metric, they fail to detail the potential the qualitative data of NPS may hold as a source of customer insight.

## Customer research for insight into the impact and value of service design

Sometimes, services are designed from scratch. However, service design typically takes a legacy of current offerings and processes as its starting point. As noted by Kimbell (2011), service design typically implies the re-design of existing service processes.

For the service design community, such re-design of services represents an opportunity to assess the impact and value of service design, as current service quality may be used as a benchmark.

On this background, customer research in the discovery phase of a service design project may serve the purpose of not only exploring opportunities and painpoints to drive the design process, but also establishing a benchmark against which the new service design may be assessed. Hence, customer research may be utilised to document the impact and value of service (re-)design.

For this purpose, NPS data is particularly interesting, as the quantitative NPS score clearly lends itself to benchmarking and comparison. Furthermore, the qualitative NPS data resulting from the main reason-for-score question can provide insight into issues that have been mitigated or changed as a result of the re-design.

## Research question

Whilst the transactional NPS arguably has potential as a source of data for customer research in service design, little is known about its characteristics for this purpose and how it may actually support service designers. On this background, we formulate the following research question:

*How can the transactional Net Promoter Score serve as a source of customer research data to support service designers?*

This question implies that we explore how data obtained through the transactional NPS can be understood and characterised. Furthermore, we should analyse how these data may cover different needs for customer insight in service design. Finally, we can use the findings to discuss how service design could benefit from applying the transactional NPS as a measurement of the value or impact of the service (re-)design process.

## Method

To investigate the characteristics of the transactional NPS as a source of customer research data, we conducted a case study analysing the content of a relatively large set of such data. Doing so enabled us to examine in depth the characteristics, benefits and limitations of the transactional NPS for this purpose.

### The case

The case involved a large international telecommunications service provider. This case context is a highly interesting one, as telecommunications typically involves a broad range of product and service offerings, such as phone subscriptions, broadband, media content, and bundled products and services.

One year prior to the case study, the provider implemented the transactional NPS to gather customer feedback for a range of touchpoints and service processes, including in-store visits, delivery processes and Customer Service call centre. In our case, we considered the data gathered for Customer Service.

The company had implemented the transactional NPS by the book. After calling Customer Service, customers received an invitation to provide feedback on the help they had received. In particular, they provided quantitative feedback on the LTR question, ‘On the basis of your experience concerning your recent call to Customer Service, how likely are you to recommend [the company] to your family, friends and colleagues?’, in terms of a score ranging from 0 (not at all likely) to 10 (extremely likely). Almost one third of the customers (30%) answered this question and received a free-text follow-up, the reason-for-score question, which was ‘What was the primary reason for your score?’. This follow-up question was administered through mobile phone text messages (70%) or brief web questionnaires (30%).

For the one-year period preceding this study, the company received more than 200.000 NPS responses.

### Sampling and analysis

To gain insight into the characteristics of transactional NPS feedback, we wanted to analyse in depth a representative sample of the large set of available customer reports. For this purpose, we conducted stratified sampling across the entire set of NPS feedback.

In the NPS, 11 LTR scores from 0 to 10 are possible. To thoroughly investigate the breadth of the responses, we sampled 100 qualitative reports for each LTR score, that is, 100 reports for LTR score 0, 100 for LTR score 1, and so forth; in total, we sampled 1100 reports.

After the sampling, we established a descriptive overview of the reports, specifically their length, as this indicates their level of detail. The reports were then investigated in a thematic analysis (Ezzy, 2013) to gain insight into emerging topics. Furthermore, a content analysis (Ezzy, 2013) was conducted to assess whether the reports addressed (a) the *target* of the NPS data collection (the customers’ latest Customer Service interaction) or (b) other aspects of the service and service provider, such as perceptions of the provider’s other products or services, or general perceptions of the brand and company. We refer to such other aspects as *spillover*.

Finally, the reports were classified as reflecting a positive or negative sentiment, or both.

# Results

The analysis gave a number of interesting insights into the transactional NPS as a source of customer research data. Here, we first present a descriptive overview of the reason-for-score reports, followed by an overview of the topics covered and the sentiment analysis. We then explore the details of some of the topics to obtain a better understanding of the feedback provided.

## Overview of the customer reports

In our descriptive overview, we found the level of detail in customer reports to depend on the customers' service experience. The reports differed markedly in length. Whilst the longest report in the sample consisted of 906 characters (slightly longer than the research question section of this paper), the average report was 86 characters long ( $SD = 105$ ); less than the length of a Twitter tweet. Interestingly, the customers with the lowest LTR scores tended to write longer reports. In fact, those customers with the lowest scores (LTR 0), on average, wrote more than twice as much as the customers with the highest scores (LTR 10). Clearly, customers with a poor experience have more on their hearts and minds than those with a good experience.

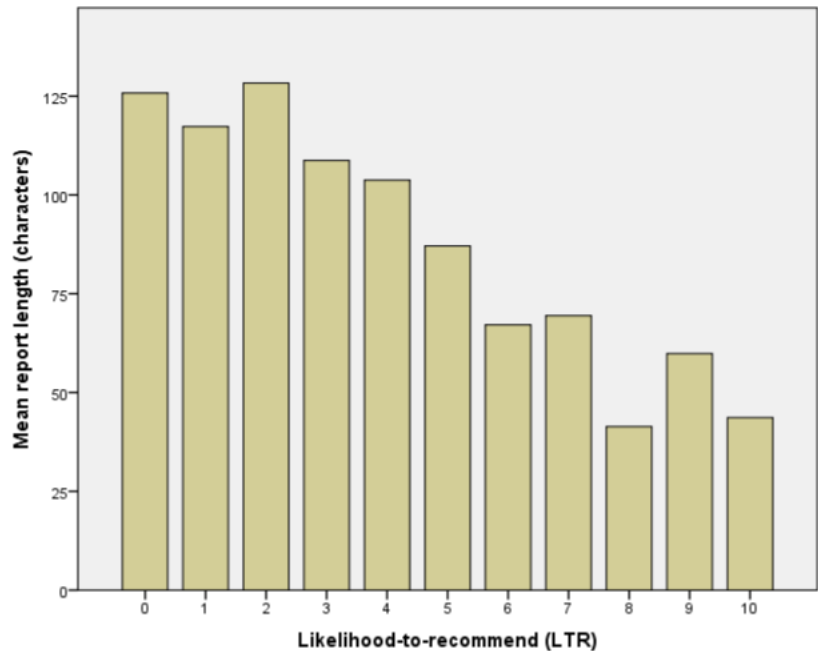


Figure 1 – Mean length of the reason-for-score-reports as a function of LTR scores

The reports addressed a broad range of topics. Whilst the LTR question only asked about the customers' latest contact with customer service (*target*), a substantial proportion of the customer reports concerned other issues (*spillover*). In Table 1, we provide an overview of the most frequently mentioned topics, as well as the aspects of the service or service provider which the topics are linked to.

Interestingly, we find that a larger variety of topics addresses the spillover aspects of the service provider and its customer offerings than those which actually concern the customers' latest contact with Customer Service. This result indicates that the transactional NPS may provide a window into not only customer experiences for the touchpoint for which the NPS is gathered, but for any part of the company or service offer which the customers consider important to their experience.

Concern	Area	Topic
Target	Customer Service—the customer's last contact	<i>Service minded (378)</i> : The customer reports that customer service is pleasant/forthcoming (positive) or unpleasant/not helpful (negative).
		<i>Help provided (282)</i> . The customer reports to be given the necessary help or fix (positive), or not (negative).
		<i>Access and response time (191)</i> . The customer commends (positive) or criticises (negative) the access or response time.
		<i>Knowledge and information (41)</i> . The customer commends (positive) or criticises (negative) the knowledge and informational quality of Customer Service.
Spillover	Other aspects of Customer Service	<i>Repair (69)</i> . A previous problem report has been fixed at an acceptable time (positive) or not (negative).
		<i>Repeated calls (46)</i> . The customer reports on having to make multiple calls to Customer Service (negative).
		<i>Invoicing (44)</i> . The customer commends (positive) or criticises (negative) the invoice or invoicing process.
		<i>Delivery (41)</i> . The customer commends (positive) or criticises (negative) delivery effectiveness or efficiency.
	Products and services	<i>Information (35)</i> . The customer commends (positive) or criticises (negative) information provided on products, services or process status.
		<i>Cost (83)</i> . The customer commends (positive) or criticises (negative) the price level for products or services.
		<i>Coverage (33)</i> . The customer commends (positive) or criticises (negative) mobile or broadband network coverage.
		<i>Broadband (27)</i> . The customer commends (positive) or criticises (negative) other aspects of the broadband service.
	Brand	<i>General brand perception (60)</i> . The customer commends (positive) or criticises (negative), in general terms, the brand.

Table 1 – Most frequent topics in the analysed reason-for-score reports

To better understand which customer reports concern the *target* (the object actually mentioned in the LTR question) and which concern *spillover*, we summarised this for each LTR score, as shown in Figure 2. We can see that for the lowest LTR scores, more than half of the reports concern spillover topics. Conversely, for the highest LTR scores, hardly any reports concern spillover.

Customers who report on good experiences mainly consider what they are actually asked about in the LTR question, whereas customers reporting on poor experiences often report also on other aspects of the provider and service offerings that they consider important for their experience. As will be apparent in the following, this practice has important implications for service designers who want to apply the transactional NPS as a source of customer research data.

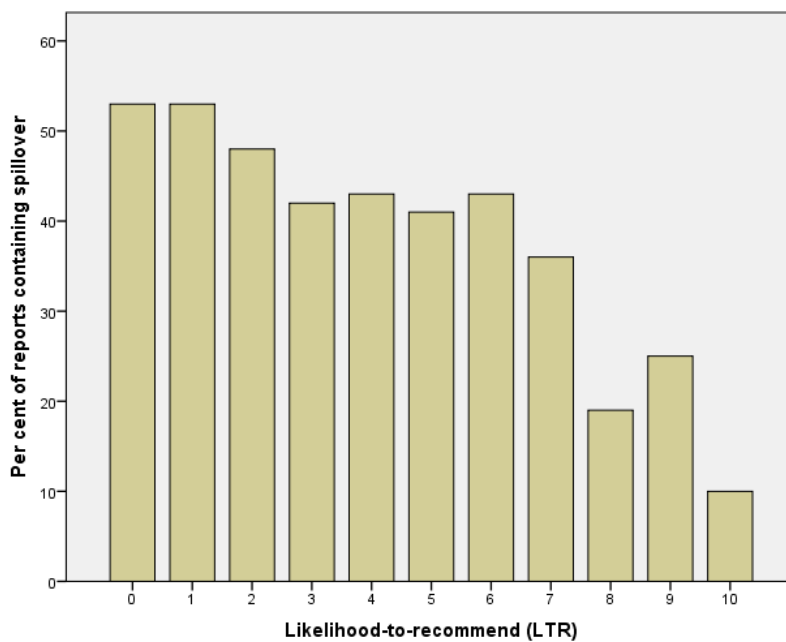


Figure 2 – The proportion of reason-for-score-reports describing spillover as a function of LTR scores

To verify that the lowest LTR scores indeed represented negative customer experiences, we summarised the sentiment scores for all the analysed reports. For the very lowest LTR scores (0–4), about 90% of the reports reflected negative sentiment only. For the highest LTR scores (9–10), about 90% of the reports reflect positive sentiment. The reports were highly polarised; customers typically report on either the things they like (28%) or dislike (48%). Only a small proportion of the reports (11%) reflect both positive and negative sentiments (13% of the reports do not reflect a particular sentiment).

### A deep-dive in the qualitative customer reports

After gaining a descriptive overview of the customer reports in the transactional NPS, we investigated how this content could support service designers. In particular, we examined whether the reports could help service designers (a) better understand the characteristics of the service as it is provided to customers, and (b) strengthen the empathy with customers and uncover unmet needs, desires, or problems and painpoints.

In the NPS framework, customers are grouped into three categories based on their LTR scores: Promoters (LTR 9–10), Neutrals (LTR 7–8) and Detractors (LTR 0–6). For each of these three groups, we examined reports that concerned the most frequently reported topics for each area, as presented in Table 1. The examination was guided by the descriptive overview.

**High-scoring customers (LTR 9–10).** As seen in Figure 1, these customers typically provide only brief reports on a relatively abstract level. The vast majority of the reports address the actual Customer Service interaction and describe this as helpful, pleasant, efficient or adequate. The following are examples:

*Knowledgeable, nice and interested service person (LTR 9)*

*Very pleasant the man I met on the phone. Explained well what I needed to know (LTR 10)*

Such customer reports may be valuable to verify what motivates customers' LTR scores. And also as feedback to individual customer service persons or as part of company internal



feedback loops, such customer reports may be beneficial. However, as in-depth qualitative data for customer research in service design, such customer reports have relatively little value. The feedback typically concerns a small number of topics, mainly ease of access, efficiency and effectiveness in service, and general praise for the customer service provided. Arguably, such reports, to some degree, provide insight into how the service is, as seen from the vantage point of the customer, as well as give a high level of understanding of how the customer feels. For example, the reports of high-scoring customers provide insight into the importance of having an effective and efficient service process, on the one hand, and a pleasant and courteous customer experience, on the other. However, this is already well established in the service design literature and hardly serves as a ground-breaking insight for an experienced service designer.

With this said, some of the high-scoring customers were found to leave reports that do provide more nuanced reports on their experiences. In particular, the longer reports are found to have this characteristic. For example, some of the longer reports show how loyal customers perceive the service they received in the most recent call as a characteristic of the service provider, thereby providing insight into how touchpoint experiences and brand experience interact to form customers' overall impression of a service provider.

*I got the answer I needed without any fuzz. Usually, I get the answers I need when calling customer service. (LTR 10)*

*Always get fast responses when contacting you with any problem. Good service when I ask about things. (LTR 10)*

**Middle-scoring customers (LTR 7–8).** The reports of middle-scoring customers are characterised as having about the same level of detail as those of high-scoring customers. However, their reports more often reflect both positive and negative sentiments and, as such, have more nuance.

*Very nice and pleasant person on the phone, but was not able to fix the issue immediately. Don't know if this could have been possible, but would have liked to resolve the issue immediately (LTR 7).*

*Good response from customer service, but the cause of the problem was a poor system/error at your side. (LTR 8)*

As reflected in the above examples, middle-scoring customers sometimes contrast different aspects of the service. In these reports, customers typically comment favourably on the customer service (the *target* of customer feedback) and then criticise a different (spillover) aspect of the service.

Therefore, the reports of middle-scoring customers may exemplify how the experience of a good service encounter may be affected by the other touchpoints of the customer journey. In some cases, they show how an unfortunate customer journey may be saved by a pleasant and courteous service encounter. The following is an example:

*Got to talk to a competent and not least pleasant customer service representative today, who also resolved my problem. If it was not for this young gentleman, I would have switched provider today. Too often, the people who answer are grumpy and do not know how to answer in a customer-friendly manner. (LTR 7)*

As middle-scoring customer reports reflect some more nuances, and, in particular, they serve to exemplify how the experience of a good service encounter may affect and be affected by other touchpoints, these may arguably be of a somewhat greater interest to service designers than high-scoring customer reports are.

**Low-scoring customers (LTR 0–6).** Low-scoring customers are not common in the case company. For the period in the case examined, about a quarter of the customers gave the company low scores, whereas the majority gave high scores (LTR 9–10). Hence, low-scoring customers comprise an unhappy few in a large pool of satisfied customers. Quite possibly, however, it is from these unhappy customers that there is the most to learn.

The low-scoring customers are characterised by having an overwhelming proportion of negative sentiment reflected in their free-text reports. In particular, customers with the lowest LTR scores in this group (LTR 0–4) hardly have positive sentiment reflected at all in their reports. No wonder these are referred to as Detractors in NPS jargon.

The low-scoring customers also have the highest proportion of spillover in their reports. They report not only on the target of the NPS study but just as often also on other aspects of the service or products of the provider, or on the provider, in general. They likewise write longer reports.

The relative comprehensiveness and complexity of these free-text reports arguably make them relevant and interesting to service designers. In particular, those reports with the greatest length and detail are the most helpful.

Put together, customer reports from low-scoring customers clearly provide a novel perspective on the service process from customers' point of view. These unlucky customers provide a view of the service, in clear words and often in detail, which is markedly different from the mainstream perspective of the satisfied majority. The following are examples:

*Because we have called and complained since March. It is not good that I have to scream before you do a thorough check. (LTR 0)*

*Because you keep contacting me to give me offers on my work phone, which I do not have to pay for myself, but do not contact me when you change the subscription for the phone of my 12-year-old daughter without informing me via email or letter. (LTR 0)*

A wide variety of service aspects and topics is covered in the reports of the lowest-scoring customers. Often, they mention more than one aspect at the same time, but in contrast to the reports of middle-scoring customers, low-scoring customers' reports typically reflect failed customer experiences both on the target of the NPS data collection, as well as the spillover aspects. A substantial proportion of the customer reports also concern only the spillover aspects of the service, making low-scoring customers a source of customer research on a truly wide range of services.

*We pay a substantial amount to you each month, and then you want additional payment when the modem/router fails. This is the point where I look for other service providers. (LTR 0)*

*1) The service you offer costs too much. And it takes too long to get answers for something that I know the answer to beforehand. 2) It is impossible to change password to the email yourself so that the account becomes more user friendly. 3) It takes about an hour to delete 5,000 e-mails when it is possible to delete only 20 at a time. Poor solutions you offer. The service is not efficient enough. (LTR 0)*

The above examples are intended to illustrate the variety found in the customer reports. At the same time, it should be noted that the topics are typically repeated; seeing reports on a similar topic together makes it possible to gain a broader understanding of a fail point or problem.

The examples also serve to illustrate how failed customer experience affects customer reports, arguably making it easier to empathise with customers than would be the case with having access to quantitative scores only.

## Discussion

Service design is holistic, co-creative, and customer-centred. Hence, customer insight is critical. One way to gain insight into how customers experience a service is to monitor what they are saying. In this study, we have explored whether and how high-volume customer feedback from the transactional NPS may be a valuable source of customer insight.

### Lessons learnt

To provide an easy overview of our reflections on the basis of the presented case, we summarise these as the following four lessons learnt:

1. **Potential for customer insight.** Customers' qualitative reports in the transactional NPS clearly have potential as a source of customer insight for service designers. Some of the reports provide new insight into the service process as seen from customers' perspective. Some reports also support empathising with customers and understanding painpoints and opportunities in the service process.
2. **Need to filter.** A relatively high proportion of customer reports are neither new or interesting for the service designer. In this light, filtering customer responses is critical for service designers so that they can easily access those that have the greatest potential for valuable customer insight.
3. **Valuable feedback from low-scoring customers.** The customer reports with the greatest value to service designers are relatively detailed (long length) and provide insight into painpoints and opportunities for improvement (low LTR score). Of course, service designers also want to familiarise themselves with the reports of high- and middle-scoring customers and understand how the service is experienced by these. However, the gold for customer research purposes can clearly be found in the detailed reports of unhappy customers.
4. **Wide range of topics.** Customers' reasons for scores concern both the target (e.g. the last Customer Service contact) and spillover (other aspects of the service provider and its offerings). This makes the transactional NPS an interesting source of data, as customers report on what is truly important for their customer experience, not just what they are asked. Hence, for service designers, new opportunities for service improvement emerge. At the same time, this wide range of topics implies a potential need for analysis support in order to fully benefit from the transactional NPS as source of customer insight.

There is clearly potential value in customers' qualitative reports from transactional NPS as support for service design. In particular, as these reports are routinely gathered by service companies and, hence, are potentially easily available to service designers. Granted, as transactional NPS is provided by customers in response to their experiences with the current service offering, such data may to some extent motivate incremental improvement rather than radical change. At the same time, as we see from the examples, the raw customer stories provided in some of these qualitative reports may also foster empathy with the customer to the point where radical change is motivated. Although the qualitative data from transactional NPS cannot substitute the in-depth user research potentially provided through traditional methods, we argue on the basis of our findings that such qualitative data represents an easily accessible, low-cost, and useful tool in the service designer's toolbox.

### Transactional NPS to measure the value and impact of service design

The service design community, as representatives for an emerging field of research and practice, needs approaches to measure the impact and value of service design. From the presented explorations of customer feedback from the transactional NPS, this approach clearly has potential for such a measurement task. We see, in particular, two reasons for this. First, the quantitative character of the transactional NPS clearly lends itself to the purpose of benchmarking and comparison across different versions of a service. As an indicator of the

value and impact of a service design project, the pre and post values of the NPS will be valuable. This has also been recommended by Polaine et al. (2013).

Second, transactional NPS data provide an opportunity to understand *how* customer experience is affected by the service design project. By comparing qualitative customer reports from the pre and post versions of the service, the differences in topics addressed in the customer reports may indicate new benefits to the customer, but more importantly the removal of previous painpoints.

How to take up transactional NPS as a means of better understanding the value and impact of service design is a promising topic that warrants further research in the service design community. Specifically, we foresee initiatives where service design projects are assessed against predefined targets for change transactional NPS reports. Such targets could concern improvements in quantitative NPS scores, but more importantly, could be formulated as expectations in terms of how customer experience as communicated through qualitative reports are to change in consequence of the outcomes of the service (re-)design project. Furthermore, it would be interesting to see changes in service design practice, for example in service design teams working within a service provider, where routine gathering of customer reports through instruments such as transactional NPS is used to assess and improve this practice over time.

## Conclusion

Our explorations of the transactional NPS as a source of customer insight indicate that there is gold to be found for service designers that dig into this wealth of customer reports. And the greatest value may be found in the reports of dissatisfied customers. Microsoft's Bill Gates is attributed the quote: "Your unhappiest customers are your greatest source of learning." We could not agree more. However, whilst we have addressed the potential value of the transactional NPS for customer insight, future research is needed to better understand how service designers should utilize and benefit from this source.

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# ServDeWS: The service design workshop on utilizing multi-viewpoint and diversity of participants based-on human centered approach for R&D Specialists

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## Abstract

In the highly volatile and uncertain world, integrating multi-viewpoints such as human-centered, technological and business viewpoints is necessary to design attractive and competitive service concepts. Generating synergy by combining diverse opinions from various stakeholders is also important. However, it is difficult, especially for technology researchers and developers who are design novices, to understand the importance of this approach in a short period of time. Our solution, ServDeWS, is a novel two-day workshop that tackles these problems. It has three main features as follows. 1. Selecting a target user from workshop participants and closely assessing the user's situation, 2. Dividing work time into individual and group activities for better utilizing the diverse opinions of participants, 3. Taking the human-centered, technological and business viewpoints in isolation, and then integrating them for a multi-viewpoint understanding. We conduct a case study of ServDeWS and assess the effectiveness of this approach.

**KEYWORDS:** service design, human centered design, workshop design

## Introduction

As the market is dramatically changing due to the high volatility and uncertainty of the world (Kail, 2010; Lawrence, 2013), it is increasingly important to rapidly discern user needs and design services to suit. Human centered iterative design and development approaches are widely utilized (Brown, 2006; Hussain et al., 2009) achieve the services needed. In addition, a standard for human centered design (ISO9241-210, 2010) exists that supports designers by providing a common ground for various stakeholders to better utilize the human-centered approach. It is also necessary to consider the values of the services as perceived by various stakeholders when designing and perfecting the services (Stickdorn et al., 2012). This implies that the multi-viewpoint approach based on human centered is extremely important in

service design. In this study, multi-viewpoints include user-centered viewpoint, technological viewpoint and business viewpoint. For instance, a design team should consider which technologies provide the best competitive advantage from the technology viewpoint, as well as the sustainability of the service from the business viewpoint. In this process, various stakeholders such as target users, and technology and business specialists should participate to maximize the diversity of ideas in service creation. The participatory design approach is one of the most famous approaches as it fosters the collaboration of various stakeholders (Muller et al., 2012).

Unfortunately, non-designers find it hard to understand and utilize the multi-viewpoint approach and the diversity of participants. Although learning the design approach by hands-on experience is the best solution, non-designers such as research and development specialists, have little chance to repeatedly experience this approach, because they have to focus on their main work. However, even non-designers are increasingly required to have a basic understanding of the service creation approach to collaborate with service designers and other stakeholders to collaboratively design new services.

To advance this field, we are proposing ServDeWS, a novel two-day workshop program that allows participants to experience and understand service creation through the utilization of the multi-viewpoint and diversity of participants. Figure 1 shows an overview of our proposal. The main target of ServDeWS is the non-designer; nominally a specialist active in research and development. This workshop sets itself two objectives to help participants understand the service creation approach. The main objective is to understand and utilize the diversity of participants for service creation based on the human-centered approach. The other objective is to understand the concept of multi-viewpoints in service creation; this covers user-centered, technological, and business viewpoints.

To achieve the above objectives, ServDeWS has three features. First, it selects a theme that casts the participants as the target user. Second, it clearly divides group work time into individual work time periods and utilizes the two axes plot technique for efficient collaboration. Third, it clearly apportions work time to assess user-centered viewpoint, technological viewpoint and business viewpoint, and then conducts a synthesis session to support participants in fusing these viewpoints for service creation. In addition, a case study yielded by the proposed workshop is introduced as an example of ServDeWS in action.

The second section discusses related works, while the third section details the workshop. In fourth section, we introduce the case study, and discuss the effectiveness of ServDeWS features in achieving the two objectives based on the result of a case study in the fifth section. Finally, Section 6 summarizes the proposal and discusses future work.

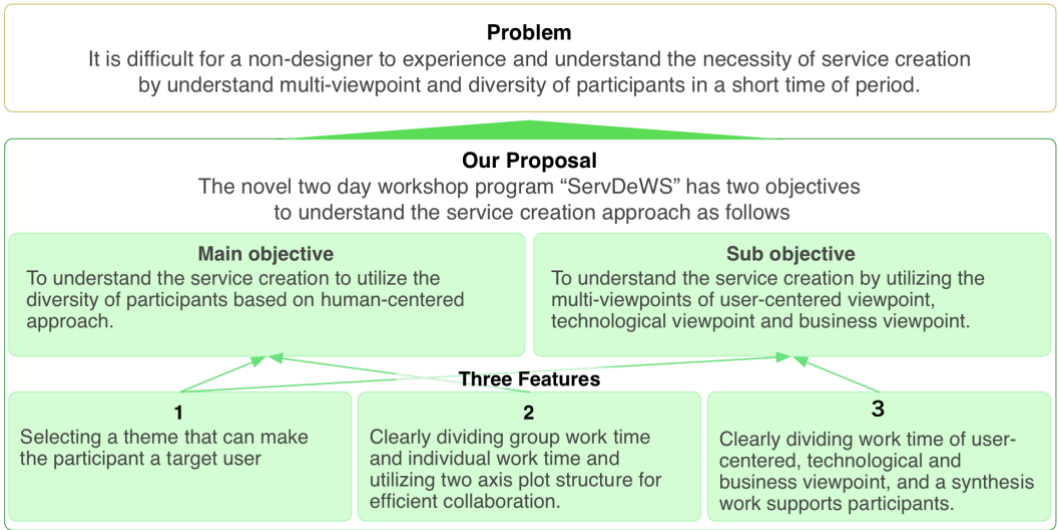


Figure 1 – Overview of ServDeWS

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## Related Work

Design Thinking is one of most famous human-centered approaches for designing solutions (Brown, 2008; Kelly et al., 2001). This approach is iterative, creative and human-centered, and is attractive to users. Some design education institutes have used it to establish one to two year education programs (e.g. d.school at Stanford (d.school, 2010) and i.school at Tokyo University (i.school, 2015)). In addition to the human-centered viewpoint, a designer should be supported by raising the issues of technical feasibility and business stakeholders value chain. T. Brown mentioned that designing solutions should consider the desirability (human-centered), feasibility (technology), and viability (business) of products or services (Brown, 2008). Furthermore, other research detailed the eight viewpoints of service design: Usefulness, Instrumentality, Technical excellence, Social significance, Mutual advantage Collective welfare, Aesthetic values and Moral implications (Arvola et al., 2016). They represent a finer-grain analysis than the three-viewpoints which are desirability, feasibility and viability. Research has shown the importance of having multi-viewpoints for service design.

Service Design has been utilized in various fields, and successful case studies have been reported (Stickdorn et al., 2012). In the software development field, several support approaches have been developed under the heading of user-centered agile development (Hussain et al., 2009; Beck et al., 2000). Lean start-up, which is an iterative business design approach, has been utilized in the entrepreneur field. These examples show the wide penetration of the human-centered approach in the design and development fields.

In service creation, multi-viewpoints and the diversity of stakeholders are essential. In addition, the designer must try to properly fuse the disparate viewpoints in creating truly innovative and attractive service ideas. Diversity includes the value judgements of a variety including designers, engineers and target users. Hence, it is important to encourage people to express and discuss their opinions if diversity is to help in the creation of service ideas.

Although the human-centered approach to service creation is effective, a lot of training is needed to gain adequate fluency. Since this approach is difficult to understand as knowledge, practical experience is necessary. This raises difficulties in designing rapid training programs. Of particular importance, technology researchers and developers of technology have their hands full with their regular work; they lack the time and opportunities to experience long term practical training programs. Hence, short-term experience programs are needed that suit researchers and developers who are not specialist in service design, and reducing the facilitation cost is important for permit regular scheduling of training workshops in a company. One example is the ninety-minute training program that provides experience in the design thinking process released by d.school (d.school, 2017). In addition, d.school also provides the four-day workshop program called Design Thinking Bootcamp. These programs focus on the design thinking process and mind-set based on experiencing human-centered approach. Bootcamp is a well supported but high cost training program, since its student-teacher ratio is five to one. The Graduate School of System Design and Management at Keio University has held various System x Design thinking workshops and also released a support tool to design workshops themselves (MEXT, 2014). Above workshops mainly target participants who know the effectiveness of such methods and are motivated to learn. These workshops clearly define the objective, and select a limited number of methods to satisfy the time constraints. ServDeWS adopts the same strategy in providing training in service creation for technology researchers and developers. In addition, to design the most attractive training workshop we carefully considered the characteristics of technology researchers and developers who have no knowledge of service design effectiveness.

## Proposed Workshop: ServDeWS

The main target user of ServDeWS is the beginner in service creation based on human-centered viewpoint; in particular, young technology researchers and developers of a company. The proposed method supposes that participants do not know the effectiveness of service design based on the human centered approach. ServDeWS is a two-day workshop program designed as a first step in learning the effectiveness of service design. Figure 2 shows a program example of the workshop. This workshop is designed to be adopted as a training program of a company. This workshop can be conducted in eight hours per day, with one-hour lunch breaks.

This workshop has two objectives allow a participant to understand the service creation approach. The main-objective is to understand service creation by utilizing the diversity of participants based on the human-centered approach. A sub-objective is to understand how to utilize multi-viewpoints for the service creation; it addresses the user-centered, technological, and business viewpoints. We note that this workshop does not attempt to provide rigorous training in service design methods or specific processes; it cannot guarantee the quality of the service ideas generated in the program.

Day1 (8 hours)		Day2 (7 hours)	
	Introduction	Introduction	
Group	Ice break	Q&A of Day1	Group
Group	Team building ( Introduce each other & Create team name)	Update persona & story prototype	Group
	Preparing Design Note (WS tool)	User Interview 3 with story prototype	Group
	Theme introduction		
Individual	Thinking their daily work	Considering business plan (pitch format)	Individual & Group
Group	Sharing their daily work (group)		
Group	Select a target user from team	Pitch presentation	
	Short break	Introduction of free discussion	
Group	Select a target user from other team	Lunch break (1h)	
Group	User Interview 1		
Group	Create pragmatic persona		
Individual & Group	Problem definition		
	Lunch break (1h)	Free discussion with Human-centered, Technological, Business viewpoint	Individual & Group
Group	Modify persona		
Individual	Selecting three technologies		
Individual	Analyzing technologies by enabler framework		
Individual	Force association method by the problem definition x three technologies	Pitch presentation in each class	
Individual	Pick-up an idea and create structure	Voting in each class	
Group	Sharing the idea with structure & voting	Select a representative team in each class	
Group	Force association method based on selected idea by the problem definition x three technologies	Final presentation	
Individual	Selecting an idea and create structure	Voting	
Group	Sharing the idea with structure & voting	Closing	
	Short break		
Group	Creating story prototype based on the selected idea		
Group	User Interview 2 with story prototype		
Group	Updating persona and story prototype based on interview results		
	Pitch presentation & Closing		

Figure 2 –Program Example of ServDeWS

### Three Features of ServDeWS

ServDeWS has three key features that allow rapid understanding of the multi-viewpoints and diversity of participants for service creation based on the human-centered approach. First feature is selecting a theme that allows participants to become a target user. For example, if the facilitator selects “a novel service for workplace” as a theme, every participant who is an employee of company is a target user. Based on the theme, participants discuss their own



problems and needs in the team, and decide which of the target users has the strongest needs or problems. The target users introduce themselves and their problem and needs to all participants. Finally, each team selects a target user who is not team member. This process intended to cross-fertilize the teams with the needs/problems of other teams. Every team invites a target user from another team, conducts interviews, and proposes a solution. Furthermore, every team creates and updates a pragmatic persona to represent a group of target users through interviews and prototyping. This feature lowers the threshold to understanding the target user because a target user is in an adjoining group, and allows a facilitator to reduce the cost to invite and guide target users in the workshop.

Second feature is clearly dividing group work time and individual work time and utilizing the two axes plot structure for efficient collaboration. An example of the two axis plot structure is shown Figure 3. The structure encourages participants to understand the diversity of their opinions. This feature solves the communication problem that makes it difficult to express and compare individual opinions in group work. Concretely, the ideation phase and the story prototyping phase of ServDeWS clearly divide individual and group work. After individual work, each team members introduce their opinion based on the structure and silently vote on which opinion is best for the target user. This feature is important to researchers and developers who are unaccustomed to collaboratively working with others in completely different fields.

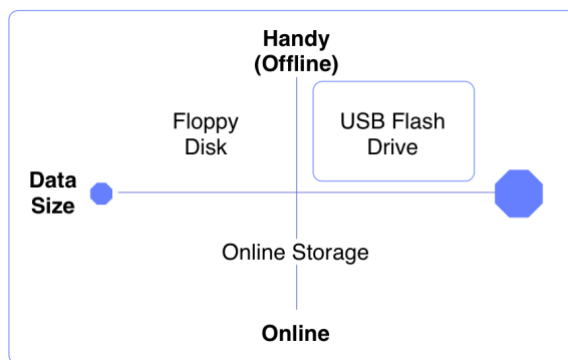


Figure 3 – An Example Two axis Plot Structure

Third feature is clearly apportioning work time among user-centered viewpoint, technological viewpoint and business viewpoint, and the subsequent fusion of these viewpoints. The separation encourages participants to individually refine important findings from the user-centered viewpoint and technological viewpoint. Furthermore, participants conduct the force association method to create service ideas from user-needs and the features of potential technologies. After creating the service idea, participants consider the competitiveness and sustainability of the service from the business viewpoint. This process is iterated in the workshop program. It allows participants to experience the service creation process, which encourages individuals to consider each viewpoint and synthesize a multi-viewpoint understanding.

### Expected Efficacies

ServDeWS offers three efficacies as follows. A. Allow participants to experience iterative service creation based on user evaluation through story prototyping. B. Allow participants to experience maximization of their abilities and the full diversity of opinions in teamwork. C. Allow participants to experience working with each viewpoint and synthesizing multi-viewpoint understanding. We elucidate the validity of these benefits through a case study.

## Case Study

This section introduces a case study of ServDeWS. Figure 2 shows the ServDeWS program that was used in the case study. Sixty participants joined the workshop. All were developers or researchers in an ICT company. The researchers were specialists in fundamental technology, applied research and the development of services and products. The employer expects them to have basic knowledge of service creation. All participants were required to participate in the workshop as a training program of the company. Hence, target users of the proposed workshop were joined by non-target users (e.g. fundamental technology researchers little interested in service creation, infrastructure development and who have had chance to consider the needs of end users).

In this case study, based on the first feature of ServDeWS, the theme chosen was “a new service (product) to support efficient work in the post 2020 era”. All participants of the workshop were thus possible target users, since they are full-time workers at a company. Second feature was not modified in this case study. The third feature was modified; because of the time constraint, less time was spent on the business-viewpoint. This was possible because all participants participated in another training program that focused on the business viewpoint. It was conducted by staff not associated with this study.

An author of this paper designed and assisted the workshop as the main facilitator. The participants were split into three groups, and each group was supported by its own sub facilitator. Sub facilitators had no experience in facilitating service creation workshop. Their role was to answer participant’s questions related to the workshop, and to provide feedback on service ideas. Before commencing the workshop, the main facilitator introduced details of the workshop and the role of the sub-facilitators in ninety minutes.

## Data Acquisition

We conducted a questionnaire to confirm the validity of the three features of ServDeWS. After the workshop, we asked the participants for their agreement that this questionnaire would be used for research purposes, and only participants who agreed submitted their questionnaire responses. As a result, we got 59/60 (valid answer ratio is 98%) answers.

The items of the questionnaire are shown in Figure 4. Each item was to be answered using the five point Likert scale method (1 is strongly disagree, 5 is strongly agree). In addition, we gathered NPS (Net Promoter Score). NPS is a method to measure customer satisfaction. NPS is calculated based on the responses to a single question, "How likely is it that you would recommend our company/product/service to a friend or colleague?". The scoring for this answer is based on a 0 to 10 scale (Reichheld, 2003; Grisaffe, 2007). We discuss the effectiveness of the three features of the proposed workshop based on the above data.

No.	Questions (1: Strongly disagree - 5: Strongly agree)
1	I understood iterative service creation based on human-centered approach through the WS.
2	I understood iterative service creation by Human-centered, Technological, Business viewpoint through the WS.
3	Individual work time allowed team members to utilize individual ability.
4	Group work time allowed team members to achieve higher outcome to achieve by individuals.
5	Structure helped me to share differences of member opinions
6	The created service is valuable for the target user.
7	The created service is highly evaluated by the target user with concrete reasons.
8	I well understood iterative service creation by Human-centered, Technological, Business viewpoint before participating WS.

\*All items are translated from Japanese

Figure 4 – Questionnaire items for the case study

### Results of Questionnaire

Figure 5 shows the results of the case study questionnaire. Q8 (I well understood iterative service creation by Human-centered, Technological, Business viewpoint before participating WS) found that 80% of participants had scant experience in the multi-viewpoint approach to service creation. That is, most participants were potential target users of ServDeWS. Q1 to Q5 showed the satisfaction of participants. All four questions received positive responses. Especially Q1 (I understood iterative service creation based on human-centered approach through the WS), Q3 (Individual work time allowed team members to utilize individual ability) and Q4 (Group work time allowed team members to higher outcome which was not created by individuals) received higher scores than the other questions.

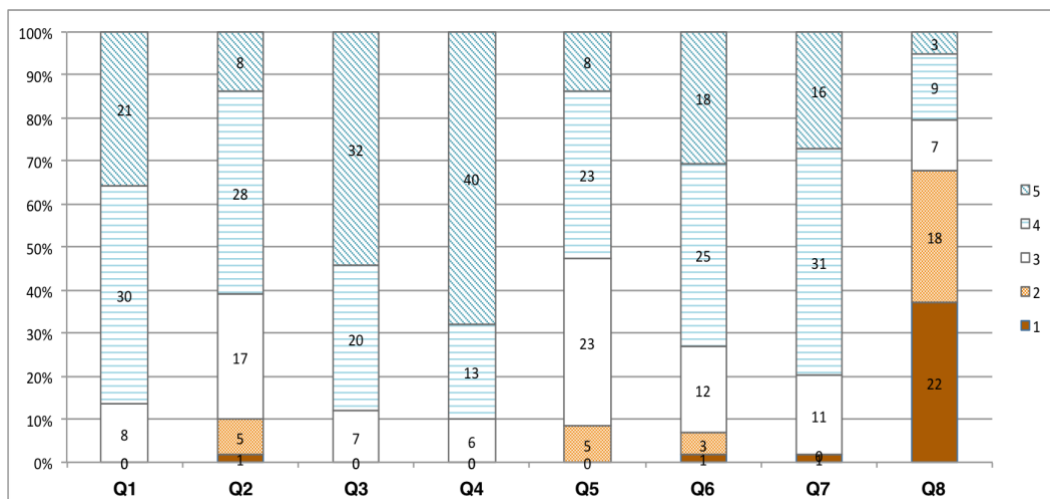
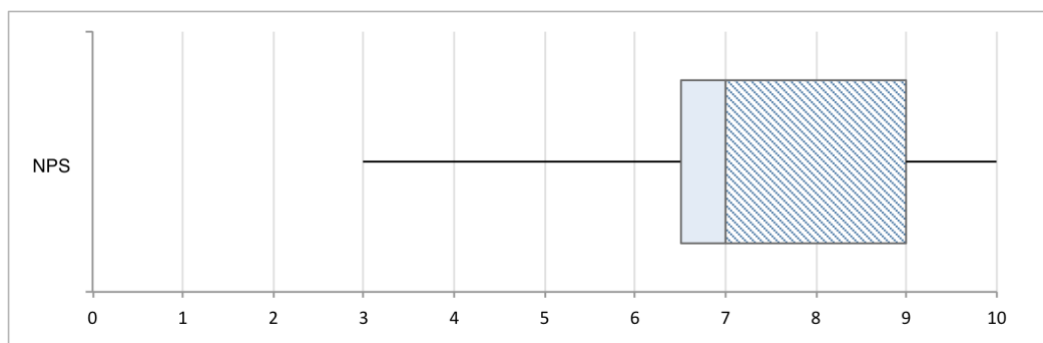


Figure 5 – Questionnaire responses in the case study

As shown in Figure 5, Q6 (The created service is valuable for the target user) indicated that more than 70% of participants were confident that service ideas suitable for target users could be identified. In addition, Q7 (The created service is highly evaluated by the target user with concrete reasons) indicated that more than 80% of participants got positive feedback with concrete reasons from target users.



**Figure 6 – NPS results in the case study**

Finally, the NPS is +3.4%, see the box plot in Figure 8. The median is 7, the first quartile is 6.5, and the third quartile is 9. Three participants gave scores of 3.

## Discussion

In this section, we discuss the effectiveness of the three features of ServDeWS based on the results gathered.

### Effectiveness of First Feature

The result of Q1 shows that participants could understand the human-centered viewpoint. In addition, the high scores of Q6 and Q7 show that participants felt confidence in their service idea based on user feedback through prototyping. Some participants voluntarily interviewed target users in the free discussion time. Furthermore, in the final presentation, their target users mentioned specific positive points of their service idea. This means that the first feature helped participants to experience to service creation based on the user-centered viewpoint. This result means the first feature (Selecting a theme to make the participants target users) enables efficacy A (Experience iterative service creation based on user evaluation through story prototyping).

### Effectiveness of Second Feature

The results of Q3 and Q4 show that participants highly evaluated the effectiveness of clearly dividing group work time and individual work time. Some participants commented that the balance of individual work and group work was very good for service creation. This shows that they experienced the utilization of individual ability, discussed the theme based on various opinions, and reached high quality outcomes that could not be achieved by individual ability. Thus the second feature (Clearly dividing group work time and individual work time and utilizing the two axis plot structure for efficient collaboration) enables the efficacy B (allowing participant to experience maximization of individual ability and diversity of opinions in a team work). In addition, the effectiveness of the structure for opinion sharing was highly rated by more than half of the participants as shown by the results of Q5 (Structure helped me to share differences of member opinions).

### Effectiveness of Third feature

The results of Q3 and Q5 were relatively positive, but lower in score than Q1, Q3 and Q4. In addition, some participants commented about the difficulty of creating structures by two axis plots. In particular, it seems that participants who felt the effectiveness of the force association method with the user-centered viewpoint and technological viewpoint gave high scores to Q3, and contra versa. This result suggests that, unlike the first feature, participants

could not fully utilize the multi-viewpoint approach for service creation. However, since 36 participants choose 4 or 5 on Q2 (I understood iterative service creation by Human-centered, Technological, Business viewpoint through the WS), and 31 participants choose 4 or 5 on Q3, more than half participants felt that fusing the multi-viewpoints was effective. This suggests that the third feature (Clearly apportioning the work time among the viewpoints, and the synthesis work supported participants in fusing these viewpoints) and so allowed more than half the participants to experience efficacy C (Working with each viewpoint and fusion of user-centered viewpoint, technological viewpoint and business viewpoint).

## Value of ServDeWS through NPS

In Japan, most NPS results are minus values, because Japanese tend to choose around five (average score) (NTTComOMS, 2017). Furthermore, the participants of this case study were forced to participate the workshop as the training program of their company, and they had various backgrounds. This suggests that +3.4% is a relatively positive score. This suggests that the workshop was valuable to the participants target users. However, it is difficult to compare to the NPS score of brand image and workshop. We should gather more NPS data as regards the service creation workshop by conducting other case studies.

## Overall Evaluation

Above the discussion of the case study shows the effectiveness of the ServDeWS workshop. First, we summarize the effectiveness of this workshop. The participants well experienced service creation based on the user-centered viewpoint, and the diversity of opinions. It means the workshop achieved the main objective (To understand service creation by utilizing the diversity of participants based on the human-centered approach). The other objective (To understand service creation through the utilization of the multi-viewpoint approach, a fusion of the user-centered viewpoint, technological viewpoint and business viewpoint) was achieved by more than half the participants. These results suggest that the propose workshop program was well accepted by technology researchers and developers. Of particular note, the second feature proposed was highly appreciated by the participants, though this feature is well suited to technology researchers and developers. Of particular note, the second feature proposed was highly appreciated by the participants. It shows that this feature is well suited to technology researchers and developers.

Second, we discuss suggestions raised for workshop improvement. The questionnaire scores related to the other objective were lower. This indicates the need to improve the experience of fusing multi-viewpoints, and opinion sharing by using the two axis plot structure. For instance, providing more examples of structuring technologies, much detailed instruction and work steps should better demonstrate the second feature. In addition, the force association method by human-centered viewpoint and technological viewpoint is hard for participants who are not used to the method to understand. This explains why the participants had difficulty in experiencing the efficacy of fusing multi-viewpoints. Improvements might include more detailed instructions and work steps. Furthermore, increasing the number of iterations (two iterations were used in this case study) will be good for training in the method and achieving both objectives. In addition, we should consider more practical applications for researchers and developers after experiencing the proposed workshop program. Touch-point based methods will offer good hints to support users in utilizing detailed multi-viewpoints. Touch-points are the points of contact between a service provider and customers. For instance, the card-based toolkit for touch-point based service innovation was proposed and its effectiveness has been confirmed (Clatworthy, 2010).

Third, in this case study, we conducted ServDeWS in two days for sixty young researchers and developers by a main skilled facilitator and three sub facilitators who are not used to service design. This suggests that the workshop program is more cost effective than other workshops. Fourth, as already mentioned above, most participants are potential target users

as shown by Q8. However, some participants of this case study were not likely target users. Hence, we need to carefully screen the participants, when we conduct more detailed evaluations of case studies.

## Conclusion

In this study, we proposed “ServDeWS”, a novel service design workshop that allows technology researchers and developers to experience service creation by utilizing the multi-viewpoint approach and the diversity of participants. We introduced two objectives of the proposal. The main objective is to understand service creation through the utilization of the diversity of participants based on the human-centered approach. The other objective is to understand service creation through the use of the multi-viewpoint approach, which fuses the user-centered viewpoint, technological viewpoint and business viewpoint. ServDeWS is equipped with the following three features to tackle the above objectives. First feature is selecting themes that are likely to cast the participants as target users. Second feature is clearly dividing group work time and individual work time and utilizing the two axis plot structure for efficient collaboration. Third feature is clearly apportioning work time of user-centered viewpoint, technological viewpoint and business viewpoint, and fusion work to help participants to use these viewpoints for service creation.

We introduced a practical case study of ServDeWS, and confirmed the effectiveness of the three features in achieving the two objectives. Finally, based on the result of the case study, we discussed the limitations of the current workshop and ideas to improve ServDeWS.

In this paper, we focused on the workshop design for service creation by utilizing multi-viewpoints and diversity. However, utilizing design for problem solving is becoming more important day by day. It is essential that design utilization tools should be easier to use with greater coverage. Thus, we will continue to expand and optimize design tools that allow various people to easily understand the possibility of creating, optimizing, and utilizing designs in various fields.

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# Mapping design capability of public service organisations: A tool for collaborative reflection

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## Abstract

While public service organisations nowadays strive to shift their mind-sets to be human-centred, collaborative and build in-house design capabilities, design as a growing strategic tool is not clearly understood among public officers. What exactly is design, what are its contributions and how to relate design practices to their everyday work are barriers to successfully embed design within their organisations. There are also limited facilitation tools to achieve a mutual understanding between designers and public officers during collaborative projects. This research introduces the development of a design capability mapping tool, with the aim of capturing and amplifying clarity around a public service organisation's propensity and aptitude to embed design at various levels throughout the organisation. The tool has been tested with several government agencies in Singapore to help them identify their perceptions of design, resources and mind-sets to utilise design as a strategic tool, as well as misalignments in their understandings.

**KEYWORDS:** design capability, public sector, transformation, mapping

## Growing design capability in the public sector

Many successful service implementations are in the understanding of the adaptability of public officers (Keller, 2013). The sources of innovation are not solely from designers and users but also employees and stakeholders of the organisations. New ideas are being regularly generated through user interactions and employees' tacit knowledge, not just from explicit research and developmental activities (Miles, 2001). When discussing an organisation's propensity to absorb design methods and human-centred approaches, Miles (2001) describes it as *design capability*, an organisation's ability and aptitude to absorb these learnings. Design capability reflects the level in which design is operating within an organisation, as formal creative methods for identifying problems, developing concepts and implementing new or enhanced services and products (Floss, 2015). According to Branson (2015), a well-defined design capability in organisation is structurally an optimised work system, from ad-hoc



projects and practices, to formally defined guidelines, to measurable metrics, to ensure sustainability and success.

Yee and White (2016) stated that changes to organisational practice cannot occur without building capability and flexibility across any organisation. To sustain transformative changes, Halvorsen et al. (2004) drew attention to the importance of creating both reflective and learning opportunities for design methods to be effectively disseminated and exploited throughout any organisation. As Bason (2010) argues, for design-led innovation to be integral of the corporate hierarchy, there needs to be constant inquiries into the status of in-house design capability and constant conversations with other corporate functions like Information Technology, Engineering, Marketing and so on to create alignments. Organisation transformation by design can be a product of collective and individual learning through reflections (Goh and Richards, 1997). Reflective learnings thus focus the organisation on required interventions. Reflection tools play an important role as shared platforms and as contextual representations for understanding organisational challenges and social problems (DiSalvo, 2010; Bjogvinsson, Ehn and Hillgren, 2012).

It is insufficient to introduce design methods and tools without equipping people with a common vocabulary to communicate processes and outcomes. A common design vocabulary is required if officers are going to be able to share collectively what, why and how they are applying design (Bailey, 2012). In this paper, we introduce the development of a practical tool that helps the public service organisations map their design capabilities. The tool maps the organisation's current perceptions of design, its design practices, current skill-sets and organisational support through collective participations of public officers. By doing so, it aims to facilitate their shared understanding about design and visions of their organisation. Taking cues from Junginger's study of organisational transformation, the tool aims to serve as a conversational piece, a designed platform to engage organisations into conversations about their own design legacies and their future design visions (Junginger, 2015). This paper presents a conceptual framework of the tool and preliminary findings from on-going tests with several public service organisations in Singapore.

## Towards a design capability mapping tool

### Review of related works

There have been several attempts to diagnose organisations' design perceptions and the level of their design capabilities, from both industry and academia. Prahalad and Hamel (1990) explained that all organisations gain knowledge as they solve problems and establish new cultures. Over time these collective learning became core competencies and set as shared knowledge foundation. A legacy within organisations is seen as routines and processes of problem solving that are conveyed from person to person (Junginger, 2013). One way to understand design legacies is to inquire into organisational design practices. We reviewed a few tools to identify opportunities and limitations. These tools were developed to measure impacts of design in organisations and to measure design capability in organisations. Considerations are the tools' approach to actionable evaluation and its support of evidence-based analysis by creating links between respondents, organisations and data.

### Artefact Group's Design Maturity Survey

Design Maturity Survey was developed by the Artefact group to evaluate organisation's level of design maturity (Artefact group, 2015). It is an online system that provides respondents with individual insights to help them prioritise their organisation's investments plus contexts to evaluate business performances. There are five categories in which respondents rate their

organisation based upon best practice example statements. The categories are Empathy, Mastery, Character, Performance and Impact (Figure 1). It provides an overall maturity score given based on the average of the five category scores, as well as scores across each of the categories.

Design Maturity Survey is relevant and a good foundation for organisation to start thinking about how design approach is being applied. Although it provides general insights, it does not provide in-depth analysis or any industry benchmark to help management understand how to improve design initiatives. The survey has a fixed survey template where respondents will not be able to customise according to the current conditions of their organisations.

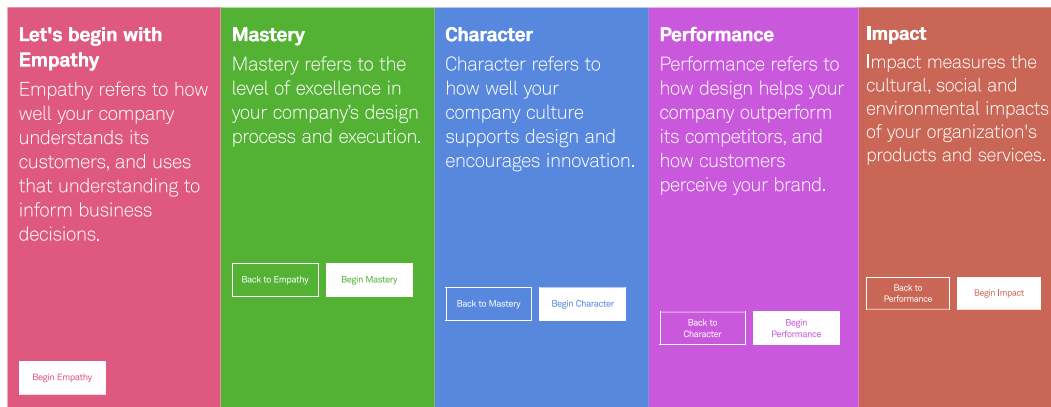


Figure 1. Design Maturity Survey's five categories for measuring design maturity (Artefact group, 2015).

## The Moment's Innovation Checkup

The Moment's Innovation Checkup is an online diagnostic tool designed in 2014 to understand an organisation's readiness to innovate. The Innovation Checkup consists of 15 questions on Culture, Infrastructure and Activity (Figure 2). It evaluates the organisation's current innovation status while highlighting strengths for leverage and opportunities for improvement. Upon completing the tool, an email with a visual representation of the results, a description of contexts and some possible next steps, provide a baseline indication of innovation efforts (The Moment, 2014).

Utilising high marks to suggest innovation success or low marks to imply gaps, the Innovation Checkup does not highlight the respondent's understanding and involvements in the organisation's services, strategies or visions. While it provides generative insights, it does not share any mode of design interventions or deeper insights to how the organisation functions relative to cultivating, implementing and improving innovation. The survey also has a fixed survey template where respondents will not be able to customise according to the current conditions of their organisations.

Figure 2. The Innovation Checkup structure is based on three areas that are deemed necessary for organisational innovation readiness (The Moment, 2014).

### A conversational tool of inquiry of Service Dominant Logic

Although its focus is on manufacturing business than the public sector, the tool of inquiry of Service Dominant Logic was developed to help organisations realise their status in the transition journey from Good Dominant Logic to Service Dominant Logic (Sangiorgi et al. 2016). The underlying principle of this tool is that design can help organisations adopt Service Dominant Logic, with its quality of customer-centeredness and collaboration that can lead to value co-creation (Lusch, Vargo and O'Brien, 2007). There are four themes, namely Service, Design, Users and Vision, that formed the tool's framework to inquire about organisation's perception of current practices and future visions (Figure 3). Each category has specific questions to help respondents realise their understanding of how the four key themes are being manifested and operationalised in their organisations.

One of the benefits of this tool is that it can reveal misalignment in different employees' understandings related to the four themes (Sangiorgi et al. 2016). In terms of the inquiry on design capabilities, this tool focuses on Service Design Logic where design is part of the whole, so it has limitation for in-depth, detailed inquiry for understanding design. As the tool is only designed as a probe, action planning based on the tool's results must be done through workshop-type of activities with employees of different departments.

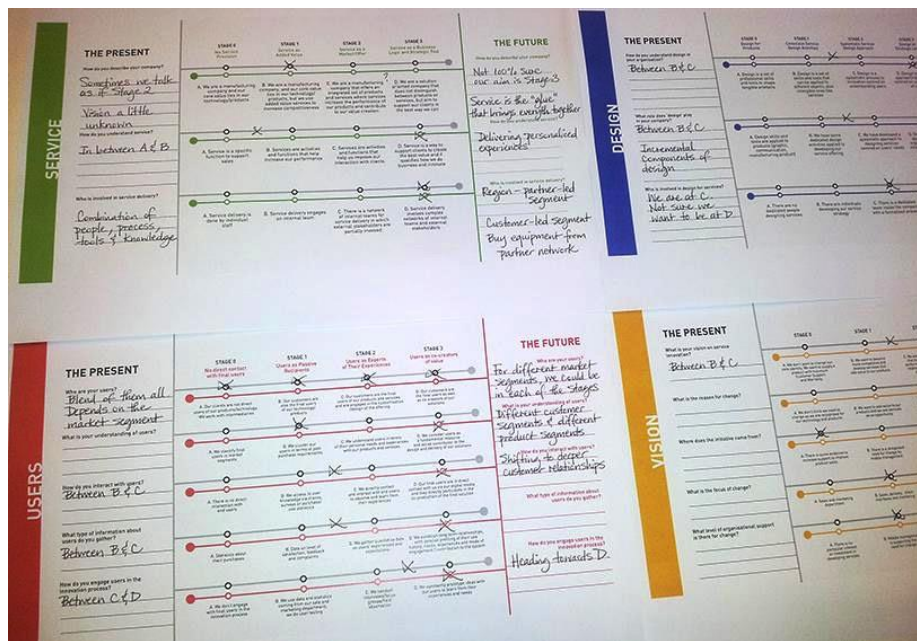


Figure 3. The conversational inquiry tool of Service Dominant Logic (Sangiorgi et al. 2016).

## Developing a mapping framework

The mapping tool can be both a diagnostic and communication technique, with a set of basic scalable criteria for after-examination from individual self-assessment to collaborative team discussions. According to Goh and Richards (1997), learning and reflection in an organisation can occur at three interrelated levels of individuals, teams and systems. Evaluation of design capability then needs to be actionable, relational and accountable. Three requirements for the development of the mapping tool were generated: firstly, it should be diagnostic of the current status yet suggests what can be available as future directions; secondly, it should enable individual diagnosis and reflection, internal and cross-team sharing and mapping against the organisational vision; lastly, it should allow for both quantitative measurement and qualitative discussion as a conversational tool.

The result is a tool design of a series of 20 questions framed within two axes of approaches to understand design-related initiatives, awareness of design methods, practice of design tools and resource support in the organisation. One axis reflects the types of activities within the design process and the second axis reveals depth of capability levels (see Figure 4). For the types of activities within the design process, the questions aim to inquire about five themes of activities, namely Discover, Define, Develop and Deliver, based on the Double Diamond Design process model (Design Council, 2006). The fifth theme is Organisation Vision and Culture to understand how an organisation harnesses innovation and supports design infrastructure. The Double Diamond Design process model is one of the popularly used service design process models where The Lab of the Singapore's Prime Minister Public Service Division, DesignSingapore Council and its partners had shared with public officers through design thinking workshops and seminars (Challenge Online, 2011).

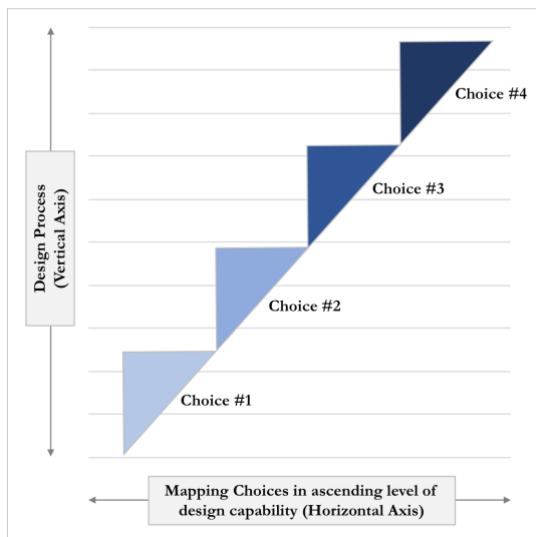


Figure 4. The mapping tool's two axes of approaches: design process (vertical axis) and mapping choices (horizontal axis).

The second axis reflects mapping choices arranged in ascending level of design capability referenced against the Danish Design Centre's Design Ladder and the UK Design Council's Public-Sector Design Ladder (Figure 5). The Danish Design Centre's Design Ladder developed in 2003 as a framework for two surveys conducted in 2003 and 2007 to assess the economic benefits of design, to show how design enhanced creativity, innovation and competitiveness of Danish companies. The higher a company ranked, the greater strategic importance they attributed to design (Sharing Experience Europe, 2009). The UK Design Council's Public-Sector Design Ladder is a roadmap developed to highlight progress towards design-led policy, to highlight public service organisations' status in applying design and directions in which to grow design capability. The higher ranked in the ladder, the more value design created but also highlighted barriers to use design (Design Council, 2013).

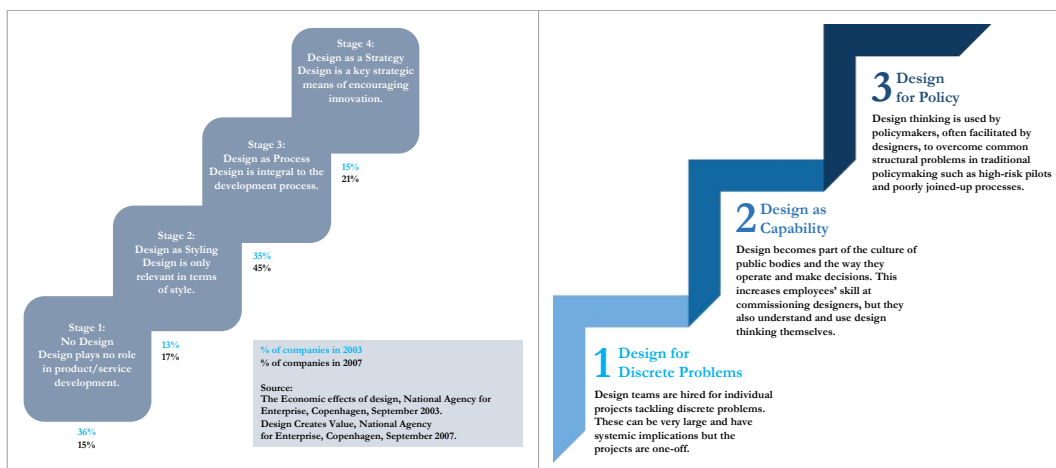


Figure 5. Left figure shows the Danish Design Centre's Design Ladder and right figure shows the UK Design Council's Public-Sector Design Ladder (Sharing Experience Europe, 2009 and Design Council, 2013).

As an example, Table 1 presents the formulated Discover phase set of questions representing activities within the design process (vertical axis) and mapping choices (horizontal axis) representing characteristics and degrees of design capability.

#### Discover Phase

The process of understanding users, challenges, environmental and social situations.	
Who are your users?	<ul style="list-style-type: none"> <li>• They are internal cross-functional teams and senior management.</li> </ul>
	<ul style="list-style-type: none"> <li>• We work with intermediaries (external service providers and other public agencies).</li> </ul>
	<ul style="list-style-type: none"> <li>• They are indirect users of our services and products.</li> </ul>
	<ul style="list-style-type: none"> <li>• They are end users whom we administer our services and co-creators of our solutions.</li> </ul>
What role do users play in projects?	<ul style="list-style-type: none"> <li>• They are data representations of different demographic segments.</li> </ul>
	<ul style="list-style-type: none"> <li>• They provide feedbacks on service satisfaction level and complaints.</li> </ul>
	<ul style="list-style-type: none"> <li>• They provide critical voices for testing services and products.</li> </ul>
	<ul style="list-style-type: none"> <li>• They are informants of their life experiences and active contributors to the design and delivery of our solutions.</li> </ul>
What is you or your team's approach when gathering information about users?	<ul style="list-style-type: none"> <li>• We rely on desktop research and historical data.</li> </ul>
	<ul style="list-style-type: none"> <li>• We rely on external consultants to gather data through surveys.</li> </ul>
	<ul style="list-style-type: none"> <li>• We rely on frontline department to provide past service usage statistics.</li> </ul>
	<ul style="list-style-type: none"> <li>• We interact with end users through field observations, focus group interviews, co-creation workshops and prototyping tests.</li> </ul>
What are the challenges that you or your team face during service delivery?	<ul style="list-style-type: none"> <li>• We have difficulties in kick-starting ethnographic research.</li> </ul>
	<ul style="list-style-type: none"> <li>• We have difficulties in identifying challenges and synthesising data that was collected.</li> </ul>
	<ul style="list-style-type: none"> <li>• We have difficulties in the management of users, internal and external stakeholders.</li> </ul>
	<ul style="list-style-type: none"> <li>• We have insufficient resources (time, funds, manpower support et. al.).</li> </ul>

Table 1. An extract of a set of questions and mapping choices for the Discover phase.

## Development of the mapping tool and tests

### Tool design

The mapping tool was designed to be used in various settings. The physical format as shown in Figure 6 is ideal for workshop environment where smaller participating teams complete the questionnaire at the workshop itself and discuss about their responses upon completion. The digital format as shown in Figure 7 can be deployed for medium to large scale sharing, where the questionnaire is to be completed by respondents prior, follow with a sharing session at a separate workshop.



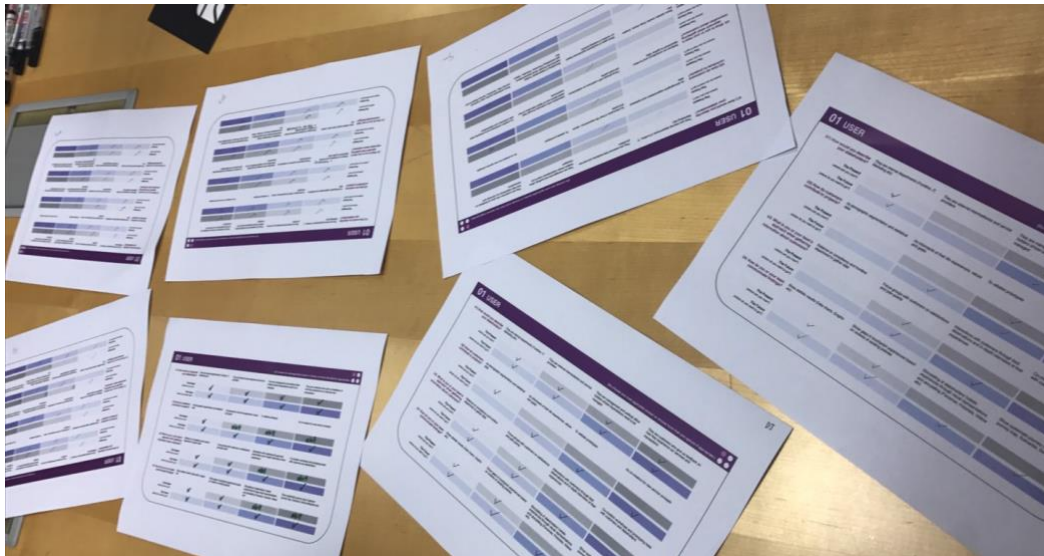


Figure 6. Physical format of the mapping tool.

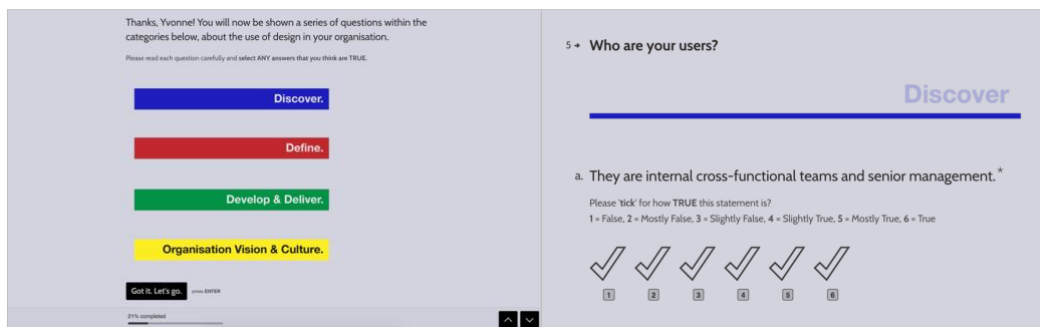


Figure 7. Screenshots of the digital mapping tool.

For each question, respondents are to choose what best represents their understanding of design, their work practices, their current organisational dynamics and rate in the form of a Likert scale (see Figure 7). The mapping tool also prompts respondents to envision future goals. To contextualise the application of the tool, the researchers worked with the organising committees to incorporate organisational typographies and terminologies. Relevant projects were crafted as scenarios for respondents to delve into daily work challenges. This is to ensure that the mapping tool is relational while treating the experience as self-discovery. The process is exploratory and aims to uncover value relations among diverse audiences and projects (Kimbrell, 2010).

The mapping tool generates both quantitative and qualitative data. The questionnaire results provide an overview of the respondents' perceived design capability and their organisations' propensity to embed design. Group discussions turn these quantitative data into meaningful diagnostic insights through evidential dialogues. The collated data were analysed to source for patterns, differences and interesting themes to highlight current conditions and possible future steps.

## Visualisations of mapping results

Upon questionnaire completion, respondents receive a series of maps that visualise their capability level in each category. Figure 8 is a representation of an individual mapping results and Figure 9 is a representation of a team's combined mapping results. A team's work

typology is generated to describe areas of strength and gaps for improvements with data from both questionnaires and group discussions (Figure 10 and Figure 11).

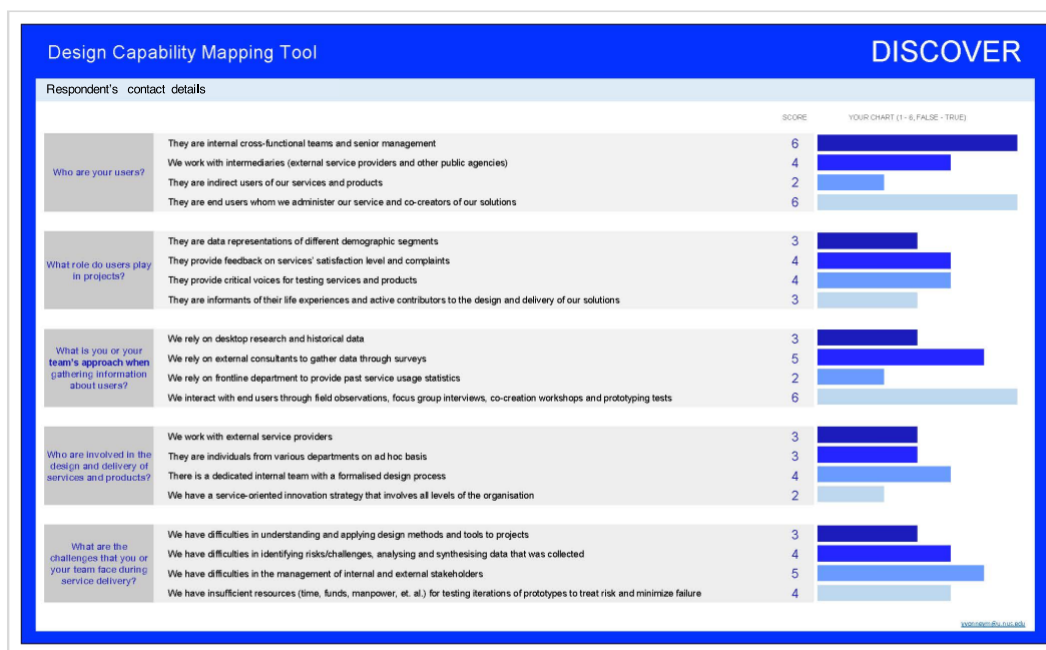


Figure 8. An extract of an individual map of the Discover phase: The left column contains questions; the middle column shows the responding choices and the bars on the right highlight grading of choices from the most applicable (Grade 6) to the least applicable (Grade 1).

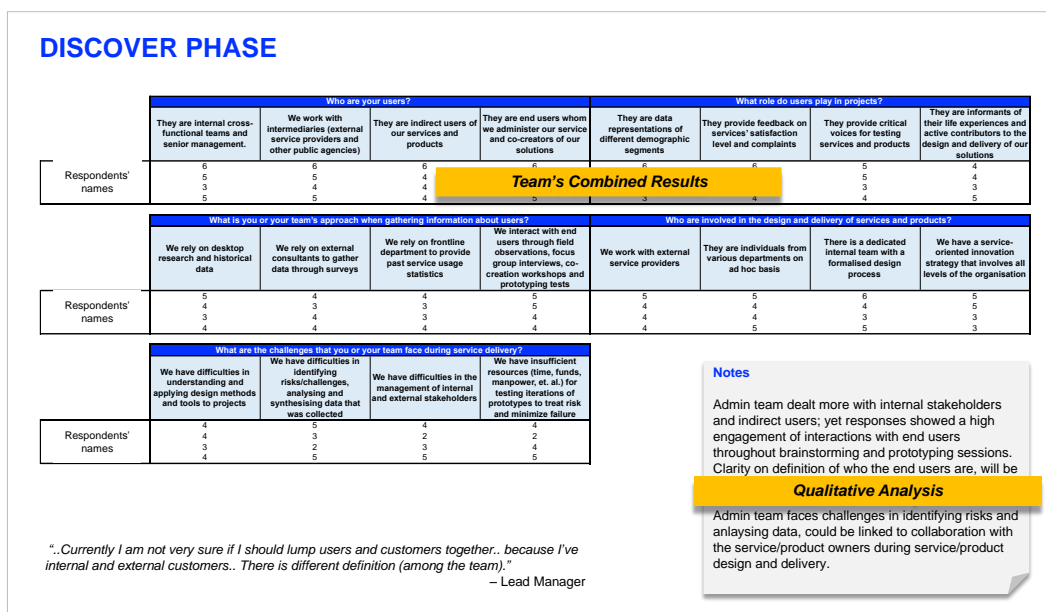


Figure 9. An extract of a team map of the Discover phase: The team map shows a combination of selected choices along with their respective questions. A related quotation from an officer was highlighted to explain the analysis of the team's perception and aptitude within the Discover phase.



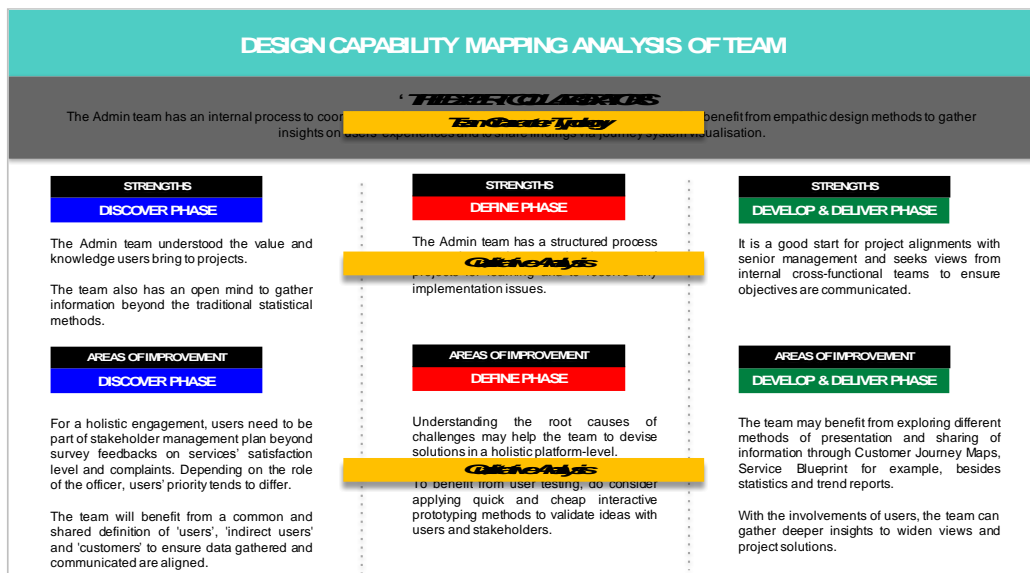


Figure 10. An extract of a team's combined analysis (quantitative and qualitative) of Discover, Define, Develop and Deliver phases.



Figure 11. A highlight of related quotations and possible future steps to embed design in organisation.

## Case: The Taxation Agency

### Mapping procedure

We tested the mapping tool with several Singapore public agencies of diverse policies, industries and community engagements. In this paper, we focus on one case where the

mapping tool was introduced to the taxation agency in Singapore in 2017. The taxation agency aims to develop a nimble organisation that transforms tax experiences of the community and work experiences of its employees by leveraging on analytics, design and digitalisation. They want to help employees strengthen their capability in design thinking, deepen their operational skills and develop their adaptability to better respond to challenging work situations.

A pre-mapping meeting was held with the organising team to understand about their current design adoption status and design strategy. Upon prepping, a workshop was conducted with five members from the Policy Planning Department (PPD) and two members from the Organisation Development Division (ODD). The participants ranged from managerial to senior management level. They are design champions in the agency and well versed in design thinking process. In this experiment, participants used the physical format of the mapping tool in a workshop setting, including a discussion session using their answers. The objectives of the workshop were to achieve a shared understanding amongst team members about design roles in the agency to ascertain current status and future directions to achieve a design-driven agency.

The participants were informed that there is no right, or wrong answer and to answer exactly how they perceived and experienced design in their everyday work. Participants had immediate opportunities to clear up any challenges while using the mapping tool, this created an open environment for candid sharing of concerns and issues. A follow-up interview was conducted three weeks after the workshop, where analysed results were dissected with the organising team.



Figure 12. A design capability mapping workshop at the taxation agency.

## Analysis

Questionnaire results, discussion transcriptions and interview transcriptions were collected from this case study. Based on these data, open coding was done to identify generative themes and categories. Followed by selective coding to explore associations of patterns and relationships for interpretations of findings. Four key areas were prominent after analysis:

- Individual and group's perceived values of design.
- Practical challenges in adopting design.
- Individual and group's realisations of misalignments.

- Individual and group's shared understanding for future planning.

In the following section, we introduce our early findings of design capability mapping with the taxation agency.

## Findings

### Overall reactions on the mapping tool

All respondents gave positive comments on the usefulness of the mapping tool as it provides a chance to clarify individual and team's perception of the role of design.

*"What I feel very meaningful and some of the learnings that I have today, firstly is coming up with the roles, so now we can explain to people what design to the agency is...Secondly is to validate, we sort of come together to validate what we think of design and also see what the gaps are."* (Manager, PPD).

It was observed that the mapping choices were able to highlight design methods and philosophy beyond the popularised design thinking process.

*"I am more excited with all the new materials. At first I know that design is those few steps but got principles...It's just so interesting to know that it has so much more to design rather than the simpler version."* (Manager, ODD).

Unfamiliarity of design principles and terminologies were daunting for some participants while answering the mapping tool. They suggested that adding a glossary list of design terms would be useful. We found that setting the context of mapping upfront and having an open environment to share mapping results immediately, helped with managing expectations of participants, especially on the take-aways from the workshop.

### Realisations and discussions

The taxation agency had embarked on a few design-led projects with external design consultants and sent many of their officers to design thinking workshops. The mapping tool highlighted some recurring issues they were facing. These originated from personal biases to group dynamics to politics internally and externally.

#### *The perceived values of design*

When probed on the team's approach in gathering information about users, some participants saw design as an enabler for empathetic discovery beyond current quantitative practices at work.

*"Design is a tool where it allows us to find out what we don't know, as opposed to other tools."* (Director, ODD).

*"I think design brings out the emotions a lot, the empathy part. We do like hard data and analysis, we don't really look at their feelings...They're digits after all."* (Manager, ODD).

It revealed that not all design tools were convincing with apparent reservations employing user research, when questioned about how the team applied design tools at work.

*"Ethnographic research validated what we already know, supported what we want to push for anyway."* (Manager, PPD).

A status quo of managing data and inability to challenge assumptions played a part in deciding solutions as well.

*"We choose those verbatims that support what we want to push anyway and so then there are no earth breaking insights. I have not seen that big value from design that would worth that investments so far."*

She further elaborated how high emphasis placed on results caused apprehensions in adopting design.

*"At the end of the day, we are also quite evidence based and I've seen the impact of analytics and digitalisation. I think we are like for analytics and digitalisation we are at level 2 moving to level 3. But for design we're moving from 0, 1 to 2."* (Director, PDD).

Though design had been highlighted as a transformation objective repeatedly during discussions, what design meant to the agency and how to achieve success had yet to be clarified.

### ***Practical challenges in adopting design***

Mandate from senior management was to embrace design but diverse work functions conflicted with mind-set and practicality in applying design. Being the domain knowledge experts, working with design expertise and internal stakeholders proved challenging.

*"I think the challenge we face is they are the experts...My consultant tells me one thing and I feel a different thing and then I don't know what to do so sometimes it's harder for me... there's where my common-sense is what the expert wants to teach me there's a conflict then I struggle."* (Director, PDD).

When queried on how the team generate and validate ideas, they shared that they were unable to relate design to everyday work.

*"Based on conversations with some of my colleagues, it seems like the major challenge is not about understanding the principles or what design is, is how to relate it back to our work. It's a question I don't have an answer to as well."* (Manager, PPD).

In addition, work system constraints created an agency of silo-minded officers who were trained to follow the system for prompt delivery of results.

*"I see the current challenge to be they are unable to look across silo because the structure doesn't help them to do so, maybe their mind-set is such that they are pretty inward...They are more brought up or trained to focus on efficiency and process, productivity in that sense."*

She also shared that the value placed on good results, dialled-up discomfort in being judged for low performance.

*"The mind-set from young to adulthood in the working world, fail is not even a word you should bring along in your vocabulary, so that makes mind-set even more challenging if we would to change them... people just not warm up to that."* (Director, ODD).

The legacies of entrenched work processes constrained the officers in applying new tools, their concerns of ambiguity in alternative solutions tend to lead them to favour predictable options instead.

## Misalignment in terminologies

Two main misalignments kept resurfacing, firstly the alignment of terminologies. The participants struggled to find a common description of their users, they were unsure to address them as users or customers even at the director level. *“Taxpayers and staffs. The other party basically.”* (Director, ODD).

Participants in the same department showed similar confliction in terminology usage. *“Customers are generic, we rarely use that term, we just say users.”* (Manager, PDD). *“Bosses also don’t like users... We discussed over the use of words when we do our strategy. Sometimes we say customer centric, sometimes we say taxpayer centric, sometimes we say user centric. So, the bosses asked exactly what you want to use, we haven’t decided what is the word to use.”* (Director, PDD).

## Misalignment in end-goals

The second misalignment is the direction of end-goals, and how to get to that desired state for a sustainable transformation.

*“From the capability mapping, we can tell that all of us have different ideas of where we think we want the agency to be in the next five or ten years, how design plays a role. I think that is something we will need to figure out, so that’s quite interesting.”* (Director, PPD).

*“I agree that we kind of need to align, we need to come together to discuss to align our expectations where we want to be in the end. I do feel that we have a very different idea where our current state is and what the future state is.”* (Manager, PPD).

As Sangiorgi et al. (2016) pointed out, misalignment may not necessary be an issue, as officers with different job functions will naturally have different perceptions of design and experiences. What can be problematic is not knowing the existence of these misalignments when building an innovation strategy as everybody will be on different page.

Currently the agency is setting their design strategy and possibly an internal innovation unit with designers as part of this new effort. It is clear from the varied discussions that sustainability in embedding design and evidential communications on the value of design are much needed.

*“I think in terms of organisational support; the sustainability part is not fully really there yet. I think a lot of us are still questioning the value and we haven’t seen the impact on the business yet.”* (Director, PPD).

## Discussion

The mapping tool as a conversational piece should facilitate a reflective process that enables learning, for participants to provoke engagements, to start thinking and practicing differently. The results from mapping are not necessarily scores of the agency’s capability but objects to further discussions and alignments. While the quantitative data generated from the questionnaire can be used as evidence for future planning, it is of great importance to encourage the participants to value group discussions, to capture new learnings and misalignments from their sharing.

We found that the mapping tool presented a platform and opportunity for front-line staffs and lower-level employees to share candidly with the middle and senior management, about what they think of the current practice of innovation and design adoption. Another observation was that it enabled the officers to identify the existence of a gap between “what they believe they should be doing” and “what they actually are doing”.

The officers are familiar with the design process and have an open-mind towards changes. However, based on the collective overview of different responses, barriers of adopting design in everyday work were revealed. The lack of ability and opportunities to apply design tools at work hindered motivation to practice design. With efficiency and effectiveness as key performance measurements, these stifled the officers' initiative to work against ingrained processes and highlighted their discomfort in being assessed differently. Doubts in the value of design to improve business were apparent. To showcase benefits of design approaches versus legacy work systems, there is a need for a measurement framework to validate success or failure of applying design.

Realisations of misalignments dialled-up difficulties and differences in expectations to embed design at various levels in the agency. The direction of transformation needs to be clearly communicated, especially when these design champions are supposedly leading the design strategy. Finding a common ground and a common language between design and business functions will be necessary to proliferate design into the agency and to implement a sustainable strategy.

The experiment and findings presented in this paper are preliminary results from on-going refinements of the mapping tool. We will continue iterative tests of the tool with diverse public organisations in Singapore to refine its language, visualisations and analysis formula. We will also touch-base with past agencies on their design adoption progress to analyse contributions of the mapping tool. The design of a set of structured activities to support the participants to amplify and codify new learnings derived from mapping could be of further work as well.

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# A service evaluation in the shared mobility sector: Bitride Bike Sharing project

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## Abstract

Zexus Spa is an Italian company that represents a European excellence in the field of human-electric transport vehicles, selling to over 120 bikes manufacturers all over the world. In 2017 the company started the Bitride Bike Sharing project, with the purpose to develop a new hybrid free-floating bike sharing program based on the award-winning “BIKE+ All In One”, the first powertrain for full hybrid bikes that does not need to be recharged from the grid.

The Bitride solution introduces several new characteristics that differentiate the model from the competitors, such as the concept of fee gamification, a multi-polar service area composed by several geo-fenced “virtual parking areas”, and sophisticated sensors embedded within the bikes.

Zexus has planned to introduce and test the service model starting from the city of Milan, thanks to a pilot project divided in two different phases: the first one with a limited number of bikes, a selected number of users and within a delimited area of the city, in order to specifically validate the technology and the service model; the second phase that will involve the entire city center and all the citizens to validate the business model.

**KEYWORDS:** service evaluation, service monitoring, shared mobility, bike sharing

## Introduction: the context of sustainable and shared mobility

The transport sector is the fastest growing source of greenhouse gas emissions worldwide. Particularly in emerging countries, the increased use of cars is contributing to low air quality, traffic congestion, urban mobility issues, and pollution (Li and Voegelé, 2017). For these reasons, in the recent years sustainable urban mobility has become one of the most important challenges for big cities. Various innovative initiatives and best practices are emerging all around the world, tailoring and scaling services according to emerging user needs and preferences. Among these, the shared mobility phenomenon is receiving increasing attention (Osservatorio nazionale per la sharing mobility, 2016).



In this scenario, bike sharing has been growing over the past decades and it is predicted to grow at a very fast pace, providing all citizens a new means of urban transportation (Cohen and Kietzmann, 2014; DeMaio, 2009).

## Zehus Spa and the “BIKE+ All In One” technology

Zehus Spa is a leader company in the world of technological innovation associated with the field of light electric mobility and hybrid power systems production for the electric bikes manufacturers. Zehus business model initially focused exclusively on developing and selling the patented hybrid technology, but the dynamic nature of the company allowed the shift from a product-based model to a service-based one. The intuition was to exploit the potential of the award-winning “BIKE+ All In One” technology to introduce a new bike sharing model into the urban context.

“BIKE+ All In One” consists in an innovative cycling solution that, using a sophisticated and ‘smart’ power pack, reduces the cyclist’s fatigue by managing energy efficiently, supporting the ride during the most strenuous actions (starts, accelerations, uphill), recovers the energy when it would be otherwise lost (decelerations, higher constant speed, downhill) and never needs to be recharged from the grid.

### The Bitride Bike Sharing Service

In 2017, Zehus participated to the Horizon 2020 program of the European Commission, including service design competencies into the project and involving the Department of Design of Politecnico di Milano. Other project partners are Labor, a research and engineering laboratory, and AMAT, the Milanese Agency for Mobility, Environment and Territory, in charge of providing strategic planning and technical studies for urban mobility. The project officially started in February 2017 and it will end in November 2018.

Bitride was structured as an action-research using the traditional phases of a service design process, including:

- The definition of the research framework, the analysis and exploration of the shared mobility context, with a particular focus on the Milanese one (research phase);
- The interpretation of the research insights and the generation of ideas useful to define the final bike sharing service concept (concept generation phase);
- Design and implementation of the service solution and the Bitride App (service development phase);
- Design, execution and monitoring of the two phases of the pilot project (validation phase);
- Refinement of the service solution and the Bitride App (implementation phase).

In order to improve the creative process and organization of the project, awareness of customers and internal cooperation on innovation, and better matching offer and needs from a user perspective (Steen, Manschot, and De Koning, 2011), every step of the process has been conducted in a co-design perspective (Holmlid, 2007; Sangiorgi, 2012), involving all the project stakeholders and partners. Co-design activities have been structured in the form of collaborative creative sessions (such as workshops, meetings and user tests) aimed at generating and testing solutions, sharing ideas and taking decisions through collaboration.

The result is the Bitride Bike Sharing service, a premium free-floating bike sharing service that provides hybrid bikes empowered by the “BIKE+ All In One” technology. Coherently with leading free-floating services worldwide, Bitride is an app-based service that allows users to register, locate, and rent the shared bikes through the Bitride App. Accordingly, the service is cashless, since it exclusively implies digital payments, and the fare system is based on a ‘pay-per-ride’ approach: users charge credit into a virtual wallet on their app, which is deducted according to their use of shared bikes.

The main characteristics that differentiate Bitride from its competitors are:

- The fleet is composed by hybrid bikes that allow users to experience three unique riding modes (Hybrid, Boost and Standard);
- The Service Area is composed by Free-Floating Areas and Parking Areas, with peculiar characteristics and rules;
- The service adopts a bottom-up approach for the relocation of shared bikes, engaging end users through a Scoring System aimed at rewarding responsible behaviors and the active contribution to the service;
- A sophisticated sensing systems allows profiling activities based on the users behaviors, allowing to detect misuses and, thanks to the double mechanical plus electronical lock, helping to prevent vandalism phenomenon;
- In addition, the sensors allow to have a real time control of fleet position and to generate heat maps that track the user's movements, to have a real time control of pollution levels (qualitative data on CO<sub>2</sub> levels) and to collect data in real time about the road quality.

Bitride Bike Sharing is a free-floating bike sharing (FFBS), an innovative bike sharing model that saves on start-up cost, in comparison to station-based bike sharing (SBBS), by avoiding construction of expensive docking stations and kiosk machines. However, like SBBS, the success of FFBS depends on the efficiency of its rebalancing operations to serve the maximal demand as possible. To face this, Bitride hybrid free floating bike sharing service introduces new parking system concept. Zehus will create specific virtual parking areas to keep the public order and to create a homogeneous distribution of smart bikes. In the virtual parking areas, it's allowed to park the smart bike and so the user can close the ride. While the whole city will be the free floating area, the user can finish the ride just in these specific zones. This advantageous system of parking tries to solve the problem of a nonhomogeneous distribution and of public disorder found with the traditional free floating bike sharing in several big cities.

This innovative parking system is strictly connected to the Scoring System: users are encouraged to park the shared bike within one of the Parking Areas, earning the corresponding amount of points depending on the need of bikes of the area. Moreover, users can earn more points by renting 'Starred Bikes', bikes that need to be relocated and parked within a Parking Area. The Scoring System also encourages registered users in communicating issues directly or indirectly encountered while using the service. Once achieved a certain amount of points, these are automatically converted into free rides in the Hybrid mode. On the other hand, the Scoring System also attempts to discourage negative behaviors by deducting points from the user profile depending on actions that openly go against the service rules or traffic laws and that are detected by the sensors embedded on the bikes.

### **The evaluation process of the Bitride Bike Sharing service**

To avoid the risk of wasting resources in the implementation of a poor service, and to loose competitive advantage, the service design approach envisions a validation step prior to the launch of the service solution on the market. Referring to the Bitride Bike Sharing project the validation is done through the set-up and monitoring of a pilot version of the service in a selected area of the Milan municipality. The pilot aims at verifying all the designed elements, both individually, as well as the overall system and user experience. The pilot entails two different steps of execution. The first step, called phase 1, implies the implementation of a reduced version of the bike sharing service (for example, excluding the payment process), through the deployment of 50 bikes, addressed to a selected community of users belonging to the community of Politecnico di Milano. These users, students, professors, administrative personnel, are exposed to a list of 'missions' to be accomplished over a period of three months, in order to test key dynamics of the usage process. The pilot project phase 1 is

going to be implemented from April to June 2018 in the area of Città Studi of Milan. The second step, called phase 2, implies the deployment of further 300 bikes into the pilot area, corresponding to the city center, and the implementation of service features previously excluded. The pilot project phase 2 is going to be run from June to September 2018. Moreover, this second version is not addressed to a selected community, but open to market, thus requiring promotional actions aimed at stimulating Milan citizens in subscribing to the service. The service evaluation will be conducted through a direct observation of the users' behaviours (interviews and surveys) and through the analysis of the data collected via the Bitride App. All the data collected will be used to improve the service offering and experience and to validate some business assumptions.

## Future challenges and future developments

The last step of the process entails the preparation to the service implementation and the effective launch of the service on the market. It is a very delicate phase, which requires the provider organization to adapt structures, processes, relations, and competencies to the production of the service and the execution of the related performance, including communication activities necessary to promote the service offering. This also implies planning the roadmap for implementation over time, envisioning short, medium and long-term business objectives. Referring to the Bitride Bike Sharing project this phase consists of refining the service model and the Bitride App based on results of the pilot monitoring activities, so to avoid the misuse of the service. Zehus' goal is, indeed, to test and validate the system within the city of Milan and work on the scalability and replicability of the service in other contexts. After the pilot phase, Zehus will mainly work as a technology and service provider for other bike sharing operators or municipalities. Currently, the company is working on the definition of several commercial agreements with different potential clients.

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# A service to measure overall adequacy across a banking environment

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## Abstract

**Antreem** and **Imola Informatica** supported **Creval** (Credito Valtellinese) to discover, design and deliver a set of digital services that enabled humans to understand how much the company services are compliant to a desired level of adequacy. Discover: it all started with the question: what is adequacy? Adequacy to what? What KPI's are involved? How can they be measured? Design: the different ways to represent these KPI's, in order to support different types of user decisions. Deliver: a digital platform that measures and displays the data.

**KEYWORDS:** service evaluation, meta-service, adequacy, KPI

## Context and aim

Credito Valtellinese, an Italian bank based in north Lombardy, lately aimed to make a change in order to implement updated strains from normative and the market. According to this changing scenario, the bank involved its services division - Creval Sistemi e Servizi (CSS) – to qualify and activate a wide range of initiatives during the last 3 years across different innovation streams: Enterprise Architecture modeling, CMDB / Services catalogue building, operational excellence and IT development services.

The focus was set on creating a system to take control of company operations and support data-informed decisions to be taken in different situations such as board meetings, operations control, efficiency excellence, these situations actually involving different users with different needs. The desired goals were to:

- 1) Foster awareness of company targets
- 2) Better support decision making
- 3) Drive technology-based change
- 4) Expand internal communication and collaboration

## Description of the service

The turning key concept that gives a new message to the management is the Adequacy: a measure of how much a KPI is a close correct interpretation to the expectations of the ecosystem. Instead of measuring an improvement, adequacy measuring gives a match between demand and its satisfaction in a system and not on a single player stream of activities. The Adequacy Partition is a fundamental tool to align the description of pieces of evidence produced in the recent past as well as to organize and envision strategic thinking.

From a user's point of view, the service consists of the bank offering to workers different interfaces right on-time and on-place:

- Data visualized in a standardized static infographic for board members in order to check a given set of KPI
- Dashboard data displayed live on monitors on the office's walls, showing real-time KPI on adequacy parameters matching a given threshold, based on Treemap (Shneiderman, 1992)
- Other data fostering internal self-awareness about the company state of operations to start innovation-aimed conversations (WIP).

The system behind is composed by:

- A conceptual framework of data strategy and its purposes
- An analytical taxonomy framing what measured KPI are involved for
- A sensor network
- An algorithm that transforms data into information to support decision making for specific needs
- An algorithm that normalizes KPI's into the same scale, to build overviews and dashboards
- Interfaces to display data at different times and places

## Actors involved

The service has been promoted by the IT governance office, also in charge for its management and maintenance.

During the design process, many stakeholders have been involved with a co-design approach, participating in workshops and user tests.

### Final users

- ICT governance
- Top management and Board of Directors
- Office visitors

### Design and development team

- ICT governance
- Enterprise Architecture
- Consultants from Antreem (service, UI and information designers) and Imola Informatica (Enterprise Architects, Governance consultants, Management consultants)
- One representative for each KPI / company function

## Benchmark

This system can't be compared to ready-to-use solutions on the market because it is built on an available platform which is made to be deeply configured to user needs. Moreover, the platform has a layer which is made to manage the configuration itself.

The real gap with commercial products is on the service built upon it, to address different and specific needs of information and support decision making.

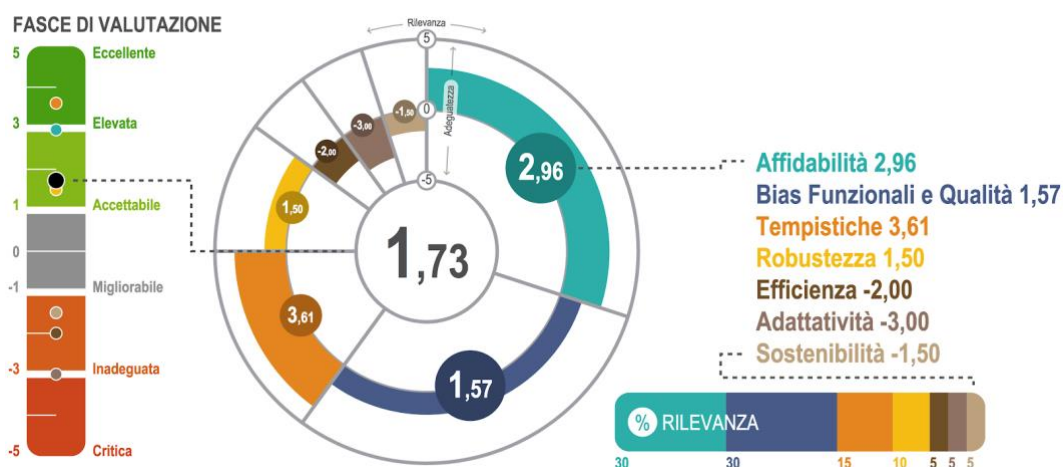
Data availability is not enough: to create information and knowledge useful to support a good decision, before planning a data strategy there is the need to make a model of data meaning, shared with all stakeholders. From here raises the need for Service Design approach, tools and methods, to define these meanings matching user needs.

## Project

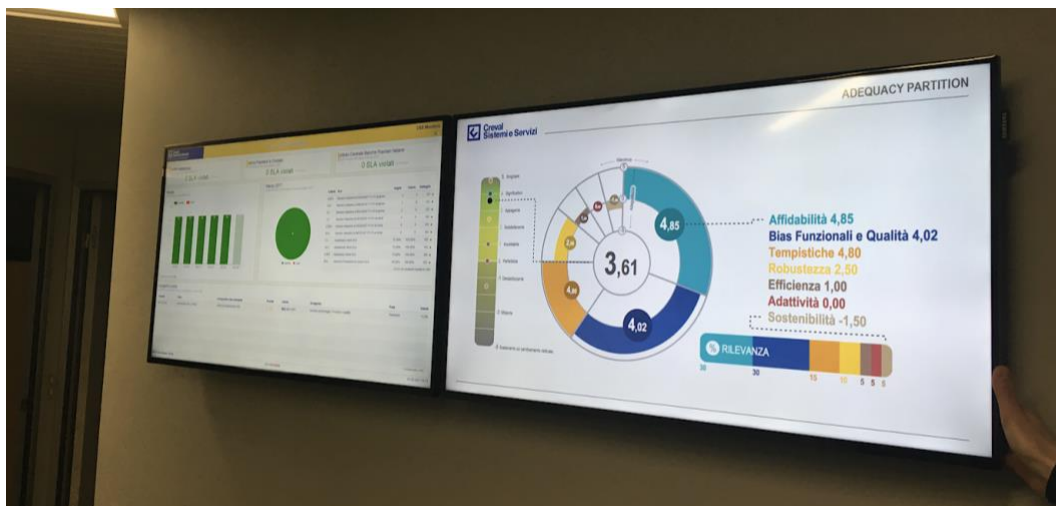
The whole platform has been designed and realized in 8 months, involving a team of 5 people from Antreem and Imola Informatica and 4 people from Creval's IT governance and 2 from the Enterprise Architecture team, plus one representative for each company function.

The process included the following milestones:

- Adequacy definition, according to regulations
- Overall purpose discussion
- Taxonomy
- User journey
- KPI and algorithm definition
- User Interface Design
- Platform implementation and configuration
- User tests
- Refine
- Release



Infographics that visualizes the services KPI.



Wall-mounted monitors displaying the services dashboard in the aisle of the bank offices.

## The importance of service design to define a data strategy and a purpose to measuring

Since the beginning of the industrial age, companies felt the need to measure in order to be more efficient, to produce more and more in the same time frame, reducing costs.

Living in the actual information age, we experience an exponential amount of available data, which often turns out to be considered as a KPI just because it is available. A good example is the number of followers on social networks: first-time marketers used to consider it a KPI, while in a mature age of social media marketing this indicator has become pointless to measure success.

The presented case shows how relevant is to define a purpose to select what data can be transformed into information, to support decision-making and cross-fertilization across the company. But defining this “data strategy” means to first define user’s needs. Using Service Design methodologies and tools has been the success key to shape the whole project purposes and to create a step by step process that next stepped successfully into the design of User Experience and Interfaces while keeping an overall vision of the service system itself.

In addition to this, the presented case could be a good example of designing a service that measures other services. While it is easy to measure an indicator using a range of numbers, the idea to put together into the same scale different indicators needs a step further from a simple measure to the design of a service, with the precise purpose for a user that need to combine these different measures, compare them, take the big picture at a glance, go into detail, and act making decisions.

The produced papers have been shared and integrated into the ABILab consortium. ABILab is the innovation department of the trade association of Italian banks. Inside the ABILab activities, the team involved in the presented project with Creval promoted the development of a framework to better define company performance indicators and measures. As a result, ABILab published the results into the 8th official report on IT architecture named “Photographing IT – From monitoring to Governance”.

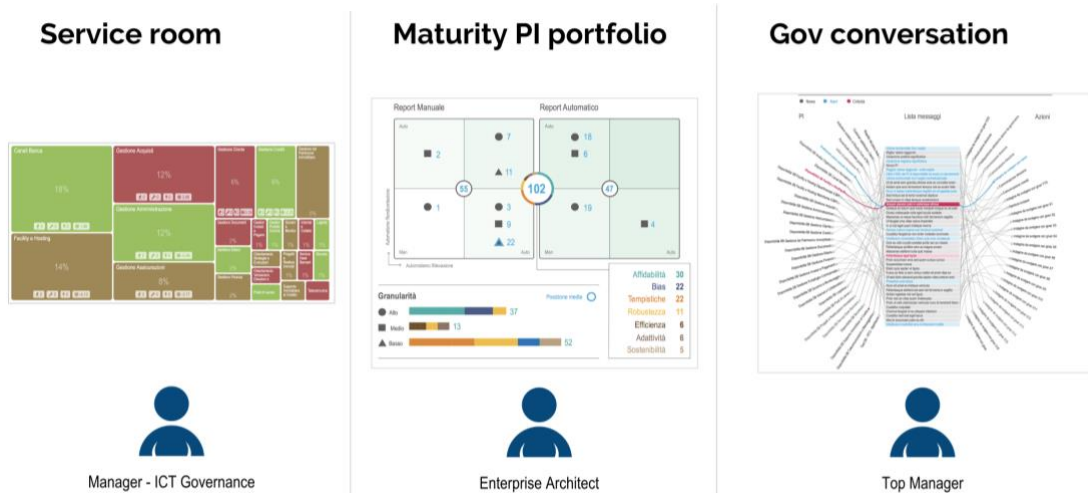
Is it not new for IT Governance to provide measures to company managers. The next level, achieved in the present case and featured in ABILab’s white papers, is the transformation of IT Governance from audit provider, delivering reports, to service provider delivering day by day or even live information via dashboards designed to different information needs.



## Future challenges

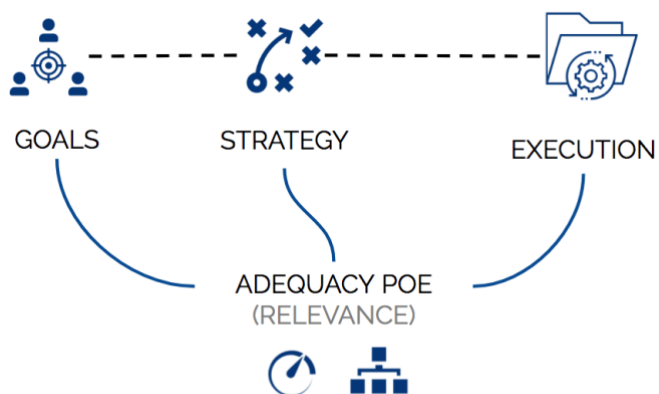
The project will evolve in two directions:

- 1) Growing the number of interfaces and use cases at the same global complexity level and with a similar aim.



An overview of additional interfaces to be designed for similar user needs.

- 2) Going to the next level by connecting the whole service system to a platform in order to add the future dimension, to envision the future and make strategic decisions while, at the same time, keeping monitored all activities involved in the realization of the strategy. Keeping as valid the adequacy paradigm, which means that the company looks for the right system evolution and not a general improvement in quantitative Performance Indicators.



The Framework which in the future could lead to a new way to envision goals and strategy and control execution using the service system.

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### *Track 4: Governing and evidencing*

Current challenges in the ideation, decision-making and implementation of public policy have recently highlighted the gap between the traditional roles and processes adopted by public decision makers and their ability to solve large and undefined issues, pushing policy makers to examine whether/how to incorporate new sets of pragmatic tools and approaches. In particular, service design is becoming increasingly involved in public sector innovation: for example, helping to translate strategic governmental plans into concrete actions for public governance and new systems of public services; establishing a new connection with civil society to allow bottom-up initiatives and service opportunities to emerge; making public services more transparent and accessible to citizens and stakeholders.

Moreover, a service design approach is being tried out in the development of policies. In view of this evolution, the track aims to illustrate how the introduction of service design is helping policy making to become more experimental, project-based and citizen-centric. More in detail, this means investigating:

- Resources and complexity, exploring the way service design is influencing the transformation of the public sector (i.e. the use and origin of resources, exploration of public problems, etc.);
- Evidence and visualization, understanding how data can be used effectively in policy making and what role/skills can be provided by service design;
- Competences and skills, looking at a different role for the public officer that incorporates a service design approach.
- Awareness and participation, understanding the effectiveness and limits of citizens' involvement and contribution in designing services and making decisions.

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## Design craft in Government

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### Abstract

Current challenges in the ideation, decision-making and implementation of public policy have recently highlighted the gap between the traditional roles and processes adopted by public decision makers and their ability to solve large and undefined issues, pushing policy makers to examine whether/how to incorporate new sets of Pragmatic tools and approaches. Service design practice is becoming increasingly involved in public sector innovation; however, the growth of many practical examples worldwide is not always coupled by a consistent and systematic reflection – whether academic or practical – that can support the evolution of Government in practice, and the advancement of research. In this positioning paper, we reflect on how track papers contribute to advance reflection on these topics; we draw a larger picture to illustrate how design practice in Government is contributing to experimentation and advocacy; and we propose a research agenda to advance both practice and research for Service Design in Government.

**KEYWORDS:** service design, design for policy, governing, evidencing

### Introduction

Current challenges in the ideation, decision-making and implementation of public policy have recently highlighted the gap between the traditional roles and processes adopted by public decision makers and their ability to solve large and undefined issues, pushing policy makers to examine whether/how to incorporate new sets of Pragmatic tools and approaches. Service design practice is becoming increasingly involved in public sector innovation: for example, helping to translate strategic governmental plans into concrete actions for public governance and new systems of public services; supporting the establishment of a new

connection with civil society to allow bottom-up initiatives and service opportunities to emerge; helping to make public services more transparent and accessible to citizens and stakeholders. However, the growth of many practical examples worldwide is not currently coupled by a consistent and systematic reflection – whether academic or practical – that can help support both the evolution of Government in practice, and the advancement of research. Proposing this track therefore, we have had as first intent the will to position Service Design research in this area, understanding who and how is working and reflecting on these topics.

The lessons that emerged confirm the need to work on creating a more mature research community to reflect on the many examples coming from the field that are extremely valuable to be shared, replicated, and scaled. These suggest that applying design to rethinking and transforming governmental procedures and structures is not a standard recipe, but rather a way of approaching daily practices over time. It is both an attitude and a mindset, as well as a diverse and dynamic set of techniques, tactics, and mental models. Building on this, we are calling it a craft – something you have to learn and embody over time through practice and renew through heuristic interpretations of the unpredictable and changing environments in which you work.

Reflecting on this landscape, the ‘governing and evidencing’ track of “ServDes.2018 Proof of Concept” Conference has aimed at illustrating how Service Design is helping policy making to become more experimental, project-based and citizen-centric, thus investigating:

- **Resources and complexity**, exploring the way service design is influencing the transformation of the public sector (i.e. the use and origin of resources, ways of dealing with public problems, etc.);
- **Evidence and visualization**, understanding how data can be used effectively in policy making and how it can provide new kinds of accountabilities;
- **Competencies and skills**, looking at a different role for the public officer that incorporates a service design approach;
- **Awareness and participation**, understanding new public legitimacy as well as the effectiveness and limits of citizens' involvement and contribution in designing services and taking public decisions.

In this positioning paper, we reflect on how selected papers have contributed to advance reflection on these topics. We also draw a larger picture to illustrate how design practice in Government is contributing to experimentation and advocacy. Finally, we reflect on a research agenda to advance both practice and research for Service Design in Government.

## Current challenges of design in Government: reflections on theory

Part of the most relevant challenges for the future of our society concern public sector innovation. Tensions in this field are stressing the existing model, because of recent societal transformations requiring public administrations to tackle new complex challenges such as demographic change, employment, productivity (i.e. overload of administrative processes), mobility challenges, etc.

There is general agreement (Mulgan and Albury, 2003; Mulgan, 2007; HM Government, 2012) that this changed nature in public problems is increasingly in contrast with the rigidity of public sector structures inherited from the past: it is no longer possible to answer clear public needs through standard approaches; it is rather necessary to adapt to the complex nature of new and interdependent challenges by experimenting approaches capable of stimulating and activating methods for the creation of resilient systems.

This scenario is the object of many studies, reports and projects, seeking to propose new approaches, among which notable is the concept of mission-oriented innovation policy in

connection with a Networked Entrepreneurial State proposed by Mariana Mazzucato (2014), sustaining that the contemporary State should have a role not only in fixing markets, but also in co-creating and shaping them by taking risks and investing/partnering up across different types of sectors (private, public, third sector, civil society).

To contribute a way forward to this scenario, design research and practice are dedicating significant attention to experimenting on innovation in governmental processes and public administration structures and tools, with a special emphasis on the processes of policy design and implementation. However, although recently there has been an increase in examples of design practice in government notably referred to the global emergence of Innovation Teams and Policy Labs (Puttick et al., 2014; Tiesinga, 2014), the introduction and inclusion of design approaches in the public sector has often remained connected to new forms of citizen engagement and collaborative and bottom-up innovations (Ansell & Torfing, 2014), which have often had the limit of missing out on investigating a larger potential contribution to changing governance structures and policymaking processes. This is instead what we have found to be more interesting and promising in our experience and for the future evolution of design in Government as both academics and practitioners, hence it is also what we have proposed as area of investigation for this conference. In particular, we are interested in contributing more largely to rethinking how the *res publica* is developed, managed, and used by proposing a long-term vision to renovate the organization of the State, thus reflecting collectively on the workings of the public administration to make it more Pragmatic. Using Latour's words (2007), a Pragmatic State is one that learns through experimentation, uses wisely the collective intelligence of citizens, and understands public challenges on the field. It seems to us that such a vision could meaningfully take advantage of the experimental approach proposed by design, thus making the connection between design and public policy almost unavoidable.

To reach this, much work still remains to be done. Considering for example the explicit recognition of design skills, methods, and approaches in government, one can notice how this is the result of quite recent experimentations, where systematic research and academic reflection – as well as careful recording and dissemination of methods and approaches – is often missing. Hoping to help fill this gap, we have articulated the reflection proposed by the track into four main points that we describe in the following by extracting the contribution that authors have made to this collective reflection.

## Resources and complexity

*How is service design influencing the transformation of the public sector (i.e. the use and origin of resources, ways of dealing with public problems, etc.)?*

Inbo Kang and Alison Prendiville (2018) aim at presenting the different journeys towards embedding design in a public organisation and identify the connected challenges and barriers using case studies of three local councils in the UK. Focusing on the provision of better services with lower costs by public sector organisations, they describe and apply four types of design intervention models: (1) Non-designer model - team is made up of internal public servants and deploys design without the help of professional designers; (2) External designer model - consultancy from an independent design practice on a project-by-project basis is used; (3) Internal/external designer model - a temporary design unit is organised with dispatched external designers and selected public servants, and is strategically established in an organisation; (4) Embedded designer model – a service design team is created including full-time service designers hired by the organisation for developing design capacity. The result of the analysis identifies a journey to mainly embedding design as capability in government and identifies the following main barriers to achieving this: propagating design mindset, maintaining momentum for behavioural and cultural change, mobilising resources, shortcoming of skills.

Cristobal Tello, Carola Zurob, Sol Pacheco and Sebastian Negrete (2018) note the rapid growth of the aging population, and the paucity of public policies designed to accommodate an aging but active community. This phenomenon has wide reaching implications for a number of public policy areas and is a valuable context in which to explore the integration of service design with policy making processes. Specifically, authors examine these issues in connection with Redactiva, an initiative based on the principles of service design and intended to foster elders' independence. They discuss the intervention methodology and emphasise the importance of ethnographic and other qualitative methods both for framing policy challenges and engaging citizens through service design, thus reaching a way to challenge the traditional public policy model aimed at the elderly. Finally, they recognise the value of flexible implementation, which allows learning from the pilot process to be integrated into the plan of delivery and improve the resulting service.

Service design approach is discussed in the paper as an advantageous approach for answering public complex questions on the basis of qualitative research, prototype and testing, as well as a useful method for involving policy makers early in the process and influencing decision making to explore new approaches for public policy design and implementation.

Adedapo Adebajo (2018) sets out to conceptually reveal the role of service design consultants in the public sector by drawing inferences from the synthesis of service innovation and the KIBS perspective of service firms. The author claims the significance of the paper lies in its introduction of synthesis between service innovation and KIBS perspectives into the discourse on the role of service design consultancy in the public sector. Using KIBS's innovation-related literature, service design consultants are suggested to play the role of co-producers of innovation due to their co-creative practices and user-centred methods.

## Evidence and visualization

*How can data be used effectively in policymaking and how can it provide new kinds of accountabilities?*

Fanny Giordano, Nicola Morelli, Amalia De Gotzen and Judith Hunziker (2018) present a study that, starting from the current gap between citizens' expectation and public sector service offering, identifies two main ways in which designers are proposing modes to build the relationship between people and public authorities: people-centred approaches, and people-led services. Specifically, they argue that the role for designers is to facilitate a dialogue between very different stakeholders, empower the voices that are usually more silent and enable a process for these voices to be heard. Designers' tools for conversation are particularly relevant in this function; therefore, the authors examine and experiment stakeholder mapping as a relevant tool to facilitate better understanding of citizen centric public service development by public authorities directly. This is achieved through making stakeholder mapping an "infrastructuring" tool or an activity to help multiple players engage in a continuous attempt to align divergent agendas, thus enhancing negotiation about the design of a complex service.

## Competencies and skills

*What is the new role for public officers that incorporates also a service design approach?*

Matilda Legeby, Pia McAleenan, Hanna Andersson and Stefan Holmlid (2018) touch on the application of design to policymaking in the context of Policy Labs, describing a case study of how design approaches have been applied to a complex societal/policy challenge. Starting from the need of modernizing the social welfare sector in Sweden acknowledged by the Ministry of Health and Social Affairs also including a training for their employees to use co-creation tools and methods, Förnyelselabbet was initiated as a lab by SALAR (The Swedish Association of Local Authorities and Regions). Through this experience, the authors suggest the need for a shift in mindset within the public sector especially within management functions, linked to the figure of a future civil servant that is able to orientate him/herself in

a different landscape, being less of an expert and more of a facilitator, finding failure a learning experience, seeing it as an opportunity not to have the right answers at the beginning of a process but in co-creative processes that explore and test hypothesis together with people.

## Awareness and participation

*What is new public legitimacy, and to what extent is citizen engagement effective?*

Gillian Mulvale, Glenn Robert, Ashleigh Miatello, Michael Larkin, Victoria Palmer, Sandra Moll and Chelsea Gable (2018) examine seven practitioner-led case studies that draw upon service design thinking and approaches to work with vulnerable and disadvantaged populations and explore the experiences of participating in projects across a range of critical social service sectors in three countries. Comparing cases, they identify key challenges related to engagement, power differentials, health concerns, funding and other economic and social circumstances that affected meaningful and sustained participation of the stakeholder groups. Their findings suggest that engagement and power differentials need particular attention when designing public services for vulnerable populations. They also point to the need for greater emphasis on implementation and evaluation of co-designed public services to demonstrate effectiveness.

## Towards design craft in Government: reflections on practice

Further complementing the reflections made from the theoretical side, understanding the current practice of doing design in Government is crucial – and not least the potential and challenges of embedding it as a new way of working. The section is divided into four sub-sections: potential, challenge, practice and patterns, that help articulate the different elements in the discourse.

### Potential: changing the art of public strategy

The premise of dealing with increased complexity, uncertainty and rapidity in decision-making environments has only further actualised the point made by Geoff Mulgan (2009) in the ‘Art of Public Strategy’: public organisations cannot merely adopt a strategy of survival by adapting to their environment; rather, the purpose of public servants should be to shape the environment. Consequently, these professionals are increasingly forced to act (and identify as) ‘change agents’ (not solely administrators or analysts) responsible for enabling and processing political intentions and ideas in creative and outcomes-focused ways. For them, the challenge is therefore not only how to become an effective and legitimate ‘shaper’ of the environment, but also – more importantly – how to effectively exercise a professional role as public servant when taking seriously the accountability of this role to the public. What characterises the role and practice of public decision-makers in the continuous search to close the gap between people and systems and build public legitimacy?

This development is interesting when taking into account the notion of the mandate for change. Oxforddictionaries.com states that mandate indicates the authority to carry out policies after an election; a decisive win gives the elected official the ‘mandate’ to push through their proposed reforms. This mandate supposedly comes from the people and is the essence of current representative democracy. This is – in our view – why design has become such a prominent (and in some contexts also hyped) concept in relation to public policy and decision-making. Around the world, public organisations are attempting to embrace and embed design approaches, methodologies and attitudes to support this shift at all levels of government – with mixed practical success so far. The language used is varied, but when it comes to its connection to design it is often linked to policy or policy-making, and “designing for policy” which seems to be an increasingly recognised field in and for itself.



What “designing for policy” seems to be questioning is how the mandate for change is created and sustained, as well as how a better relationship between policy and practice could increase the likelihood of successful state interventions and build public legitimacy.

This is also substantiated by the personal experience of one of the authors: in his previous work at MindLab, Christiansen has found that a large portion of his focus went into challenging the consensus that the job for public servants was finished once a policy was formulated, a law was passed, or a decision had been made. Work was developed to reverse this logic and see decisions, laws, and regulations as merely the beginning of an explorative learning process about what might work in people’s lives, thus aiming at creating a better dynamic between political envisioning, technical appropriation and implementation. Ultimately, for most policies to be successful, they have to be owned by the implementers: by the people charged with carrying out that policy, and with the citizens who now have to act differently. By introducing citizen-centred and learning-oriented processes of exploration of public value, design is contributing to reshaping how the mandate for change is continuously created and reproduced – and therefore also rethinking the art of public strategy.

### Challenge: more craft than method

With this overall potential in mind, the frequent underestimation of what it takes to enable a useful uptake of innovation approaches and methods – including design – is concerning. When public organisations have been given a mandate to do something new, they have often emphasised cognitive learning about methods rather than immersive and experiential learning of the craft of solving problems. This has represented an important constraint in our view, therefore leading us to ask: how to apply, embed and extend design approaches in government as well as manage the decision-making and governance environments in which the new approach has to be embedded?

In a slightly crude simplification, design-led innovation craft can be seen to effectively and simultaneously navigate and deal with the areas illustrated in the figure below (see figure 1).

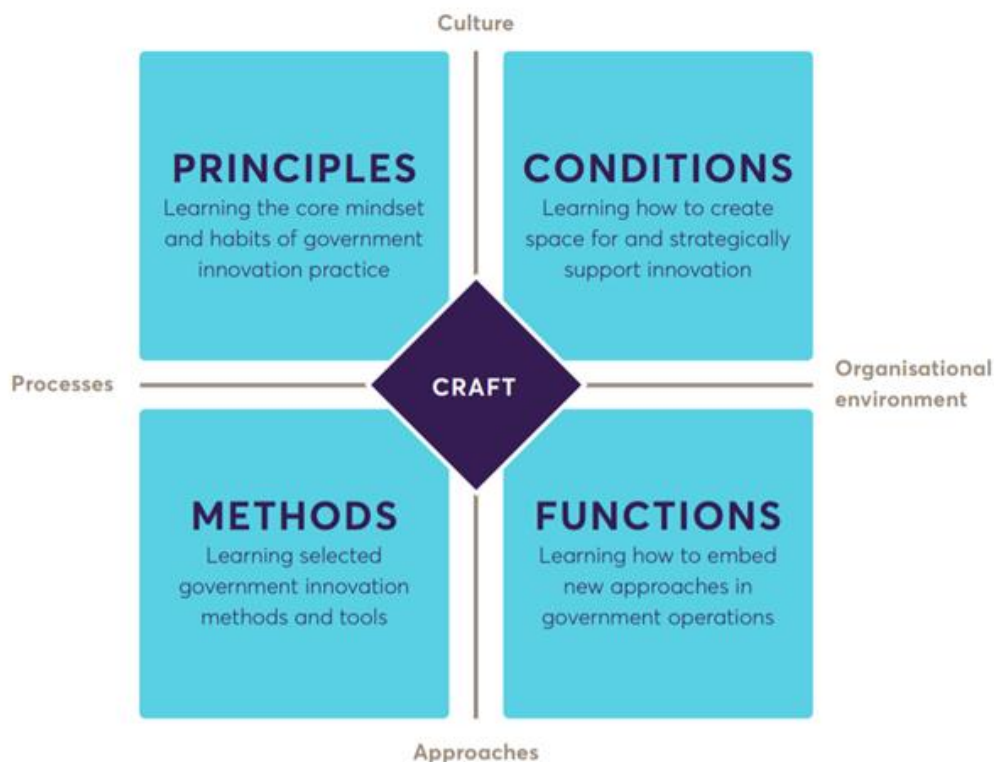


Figure 1: States of Change Curriculum, Jesper Christiansen, Nesta, 2017.

The four dimensions are:

- **Methods.** This refers to the technical ability to learn, take up and apply design as a new kind of approach and process in public development practice (most used terms in government are still human-centred design, user-centred design, service design, systems design or co-design).
- **Principles.** For a new method to be strategically applied and sustained over time as a new way of working (going beyond single projects or pilots), there has to be continuous focus on how design changes the culture of the organisation. This includes learning and rehearsing what kinds of mindsets and habits follow from doing design-led work in government and allowing for public officials to explore the meaning and value of design.
- **Conditions.** Any successful application of design in government is dependent on the ability to create the appropriate conditions and enabling environment to strategically support the process. Consequently, there is a need to have a systematic focus on how to lead, organise for, manage, support, incentivise and sustain design-led innovation in public organisations.
- **Functions.** To make the most of design, there is a need to systematically explore how to embed design approaches in core government operations, structures and roles - for example in public policy, procurement, HR, or regulation practice (going beyond setting up dedicated design labs and teams).

The experience in applying on the field this model recently developed by Nesta, underlines how much the lack of focus on the craft of design-led innovation is concerning. This is not only leaving design-led innovation projects and programmes as small islands in the larger landscape of government development practice, but also failing to develop new change capacity at the core of government operations that could potentially result in new governance models, innovative ways of developing and implementing policies and a better intelligence for public decision-making.

### Practice: leveraging new mechanisms for supporting design-led innovation

Design is part of a larger range of methods and approaches that expand on the processes and instruments currently used by government when it comes to creating public impact. It is encouraging that there is a need for a shift in focus in government environments around the world toward these practices: increasingly, there have been different attempts to build new practice-oriented mechanisms for embedding design and transforming the ways that governments operate.

Here follow seven trends for building and supporting the capacity and craft of design-led innovation in practice:

- **Labs.** Much of the previous and current practice of embedding design and other innovation approaches in government is done through labs or teams. They are leading by example – building government capacity by creating change narratives and enabling collaborative processes that showcase and rehearse how things could be done differently. The examples are numerous and widespread (with organisations like UK Policy Lab, MindLab (DEN), TACSI (AUS), Public Policy Lab (USA), MaRS Solutions Lab (CAN), Lab de la Ciudad (MEX) and others being on the forefront early). Recent studies have estimated that there are over 100 labs in Australia and New Zealand government organisations alone, while there are over 25 labs in the Federal Government of Canada.
- **Strategies.** More and more governments are launching strategic (branded) innovation agendas that initiate a large range of activities under an overall heading. These are examples of attempting to embed design-led innovation capacity from the top down. Recent innovation strategies in New Zealand, Victoria (AUS), Colombia, Canada and several other countries, regions and local authorities demonstrate this

strategic intent. In South Korea, under headings of ‘Sharing City’, ‘listening’ and ‘citizen engagement’, the government is leading a large portfolio of initiatives to enable more citizen-centred and collaborative design of services and systems. In the digital realm, Estonia probably has one of the world’s most ambitious digital design strategies ‘E-Estonia’. This has enabled a large project portfolio focused mainly on the easy access and application of online services. The Finnish government’s experimental initiative has created different policy and democratic innovations enabling better design of processes for citizen engagement and people-driven legislation.

- **Spaces.** An increasing range of initiatives are specifically dedicated to creating space for people inside government organisations to work with their own ideas in design-led innovation processes. Initiatives like ChangeSA in South Australia is an ambitious attempt to create a culture that speeds up development and decision-making through design-led processes by focusing on linking pressing challenges with staff creativity. Similarly, in Singapore, PS21 is tapping into and rewarding the knowledge and creative potential of public officials. In the UAE government, accelerator-type models are being used to integrate design and technology-led start-ups into being a part of developing service solutions. In British Columbia, Canada, with the support of inWithForward, social service organisations are developing a ‘fifth space’ to free up time for public staff to do cross-organisational collaboration and capacity-building focused on design-led innovation and R&D.
- **Communities.** An interesting and growing type of initiative is focusing on creating communities of practice that mobilise and learn collectively around how best to apply and embed design-led approaches in government organisations. In Chile, the Experimenta programme, initiated by the Laboratorio del Gobierno, facilitates a government-wide capacity-building process to embed new design capabilities among a distributed group of public servant teams working on pressing challenges. A similar focus and intent can be seen in La Transfo in France, initiated by La 27e Region, where design labs are being set up around the country to become part of an orchestrated learning process focused on how best to leverage design in government supported by a community of peers. On a global scale, Nesta’s States of Change initiative is attempting to foster and support learning collectives focused on developing and supporting design-led innovation craft.
- **Networks.** Several governments around the world have been attempting to mobilise and generate new design-led innovation practice by creating formal and informal networks between practitioners. These networks can focus on anything from informal experience exchanges, advocacy activities, and challenge-focused working groups. In places like Victoria, Australia and Chile, the innovation networks are both significant in size and rigour and are becoming a source of useful inspiration and support, helping to build legitimacy for a new way of working. On an international level, the Government Digital Service in the UK is leading a growing network of design practitioners sharing lessons on how to leverage design-led innovation across country borders.
- **Roles.** There is an emerging trend to focus on creating and institutionalising new dedicated problem-solving roles within government ecosystems. They are often organised in network structures and emphasise particular mindset, skillsets, ways of working and collaborating with the wider organisation – many of which draw heavily on design-driven innovation. In Canada, initiatives like Free Agents and GC Entrepreneurs are attempting to mobilise and organise new roles in cross-government teams working on pressing challenges. In the UK, Futuregov is working with national agencies and local councils to develop new professional roles for digital and service designers with the explicit aim to change existing workforce priorities and incentivise new skills and methods.
- **Functions.** Design approaches and tools are increasingly becoming a part of transforming core functions of governments and international institutions – for example the redesign of public policy-making, procurement procedures, planning processes and programme cycles. In Denmark, several ministries have been

redesigning their policy approach based on human-centred design principles. Finland and Colombia are redesigning planning practices with experimental design. UNDP has been “hacking” the programme cycle with the help of human-centred design tools. And a wide range of city governments are redesigning procurement procedures with design-based tools.

While this range of ways to embed design are receiving much attention currently, their sustained value depends on the ability to become embedded in and transform the wider institutional capacity of governments. Whether they are actually successful in reframing, reshaping and remaking the logics and tasks of government is still to be seen. But they do provide a unique opportunity to explore, learn about and codify what the ‘next practice’ of embedding design in government should be.

### Patterns: towards a new craft of government?

Building on the cases, practices, and methods described so far, it is possible to underline (at least) five overall agendas to be aware of in terms of what design is contributing to civil servants’ practice:

- **Changing knowledge management processes.** Design creates the need to reshape knowledge management by introducing a learning-oriented and iterative approach to explore public value with a citizen-centred outcomes-focus to deal with the causes of problems and the practical consequences that the new initiatives bring with them.
- **Reinventing problem-solving activities.** Design reframes and reshapes how governments research, imagine, synthesise, experiment with, refine, rehearse, operationalise and implement new concepts, ideas and/or intentions.
- **Creating institutional resilience.** Design insists on the need for reshaping the governance, capabilities and management systems to increase the ability to learn and adapt from every policy and intervention to deal with the practical consequences that the new initiatives bring with them.
- **Transforming governance relationships.** Design insists on the need for reshaping the dynamic between policy and practice and creates a shared ownership between national and local government to increase the likelihood of successful policy implementation.
- **Shifting from transactional development to collaborative design?** Design indicates the need for reshaping the relationship between the administrative and political to foster more outcomes-focused collaboration and experiment with new interdependencies between the public and political and bureaucratic systems.

## Proposing a research agenda for Service Design in Government

The bigger question when we talk about embedding design in Government is really an issue of what creates the legitimacy of governments and the state. The approaches described above (both in theory and practice) clash significantly and in different ways with the current paradigm of governance largely based on 1970s New Public Management (NPM) models. These were built on a contractual relationship between administration and politics and saw politicians as buyers of results from civil servants, that is to say: politicians set out directions and goals and public servants build the policies that deliver on them. NPM also introduced an epistemology of the state that valued specifications of products and services rather than a more anticipatory way of dealing with and addressing complex public problems. While we might say that the introduction of design is helping to introduce a new set of approaches and tools to overcome this attitude, we are also implicitly opening up a conversation about the

culture of planning, decision-making, public management and public value – that could be called a new craft of Government and public governance by design.

The path to achieving this and proving its effectiveness is undoubtedly long and will require much more commitment both in practice and theoretical reflection. On the practice side, many new experimentations will need to be developed and reflected upon in structural and interconnected ways to aid learning and avoid useless replication of projects and programmes that are finally left as small islands in the larger landscape of government development, while failing to develop real change capacity, new governance models, innovative ways of developing and implementing policies and a better intelligence for public decision-making. On the theoretical side, few main areas of reflection could support the development of an international research agenda, crucially and critically looking at the value generated by the potential that design abilities have to become embedded in and transform the wider institutional capacity of governments.

In this area, research opportunities can be opened up looking at the areas of investigation proposed for this track, which might help set a significant research agenda:

- **Resources and complexity**, to explore the ways design craft is influencing or could influence the transformation of the public sector also in connection with other approaches and disciplines (i.e. complexity theory), in order to study and test alternative ways to use resources and transform public management approaches towards anticipation of public problems;
- **Evidence and visualization**, to inquire the effectiveness of the introduction and use of new types of data (i.e. open data, big data, public data, etc.) for governance as well as the most appropriate tools and channels to stimulate a more profound democratic discussion around public value, and to wonder whether this could effectively generate more legitimacy of governmental actions or if this is only a false myth;
- **Competencies and skills**, to investigate new capacities and roles for public officers that can complement traditional skills with the new craft linking to iterative, digital, and hybrid policy and governance solutions;
- **Awareness and participation**, understanding and inquiring new public legitimacy, the new contract that should be created between State and citizens, but also the effectiveness and limits of citizens' involvement and contribution in co-owning public goods and services and their ability to become co-decision makers.

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# The role of service design consultancy in public sector: Inferences from KIBS and service innovation perspectives

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## Abstract

Amidst the wave of socio-economic problems and challenges plaguing the society, it has become imperative for governments and public managers to find novel ways of innovating in the public sector and service design is being touted as the panacea. There is an array of studies and research works that have attested to the efficacy of service design in fostering public service innovation but many of these works are still bereft of a service innovation perspective that properly sheds the light on the consultancy practices of service designers as external experts in the public sector and their contribution to service innovation in the public sector. Against this backdrop, this paper aims to contribute to the discourse by conceptually explicating the role of service design consultancy in the public sector and the implication on governance through the lens of synthesis service innovation and KIBS perspectives.

**KEYWORDS:** service design, service innovation, KIBS, public sector, governance

## Introduction

Innovation in the public sector remains a major focus for many governments owing to the growing crisis in the global economy and the need to mitigate these implacable social problems with effective design and delivery of public services (Bryson et al., 2016). Several scholars have asserted that the creation of value for the citizenry can be attained with a ubiquity of innovative practices and service provision (Alves, 2013; Frow and Payne, 2008; Black and Gallan, 2015; Crosby et al. 2017). Against this backdrop, public service providers are now embracing service design, which is currently gaining traction in the public sector. Service design involves the adoption of human-centred approaches and participatory techniques to create service experiences with a network of stakeholders (Trischler and Scott, 2015). The increasing interest in the design phenomenon has precipitated the need for public managers to consult external design experts who can deploy their expertise and knowledge of designing, redesigning and improving public services (Rizzo et al. 2012).

However, design consultancy firms are just like many other types of consultancy firms that have been classified as knowledge-intensive-business-services (KIBS), owing to their nature of service offerings- knowledge (Miles, 1995). KIBS are characterized by their ability to produce knowledge, the provision of intangible services that occur through interaction and client-consultant relationship (den Hertog, 2000). They provide business-related but knowledge-intensive-business services that are meant for clients or public consumption. Some design consultants are either hired as external consultants in which they operate from the outside, or as internal experts within the organization, especially in a creative capacity (Kimbell, 2009).

For several years, research studies and academic works on KIBS and their contribution in the public sector have concentrated in the fields of management and IT consultancy firms (Hogg and Karantinou, 2001; Christensen, 2005). These professions have been the most prevalent on the agenda of KIBS researchers, owing to the popularity of IT profession and the recognition of management as a knowledge-based practice (Landry et al. 2012; Lessard, 2014; Savic, 2016). Other KIBS categories like design consultancies have not enjoyed much attention from researchers. This is partly due to service design a field that is still developing in terms of practice and theory (Kimbell, 2009).

Service design has ascended over the years in the public sector (Sangiorgi, 2015) and it has been reputed to be a potent catalyst of service innovation (Patricio and Fisk, 2012), particularly in the private sector. However, the array of grey literature and research works have largely extolled service design, with regards to its methods and practices, which sometimes offer a biased practitioner-based perspective.

In addition, the diversity in public services could possibly inform the heterogeneous ways of ensuring and managing innovation (Bessant and Maher, 2009). The public sector consists of several compartments and services that are designed and utilized differently. For instance, design approaches to innovation in social care might be at variance with the techniques that are suitable for the design of efficient waste management services. Consequently, such variations in the structure and services of these public service systems could demand different modes of interaction, relationship, co-design process and design methods. Current literatures in service design are yet to inform on these intricacies and their implications for public service innovation.

The significance of this paper is to further enlighten on the role of service design in public services and assess its contribution to service improvements and new solutions to socio-economic problems. It is important for the government, public service organizations, the service users, policy-makers and other stakeholders to understand the contributions of service design consultancies, as this will enlighten on their practices and capacities and how best their competencies can be channeled towards enabling economic development.

## The Essentials of Service Design

Service design as a practice is predicated on a human-centered approach to the development of service systems, arrangements and the transformation of human lives (Ohno et al. 2015; Kimbell, 2011; Olilla, 2012). Although now grounded in design culture, its origin is in service marketing (Maffei et al. 2005; Andreassen et al. 2015; Sangiorgi and Junginger, 2015). It incorporated elements of services and design and developed as its own discipline, making it distinctive from other variants of design e.g. product design and interaction design (Sangiorgi and Junginger, 2015).

Despite its popularity in Northern Europe and a flourishing industry in the UK (Sanders and Stappers, 2008), research on the contribution of service design is still insufficient. Most research studies have focused on the nature of design practice in the public sector (Sangiorgi, 2015), service design for social innovation (Yang and Sung, 2016), embedding service design in public sector firms (Bailey, 2012) and on the efficacy of service design methodologies (Radnor et al. 2014; Trischler and Scott, 2015). Less attention has been given to the role of the

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actors (the design consultants) and understanding their contribution from a knowledge intensive business service perspective.

Design thinking represents the way design is applied to solving problems and creating innovation using design tools and methods (Kimbell, 2011). Sangiorgi and Junjinger (2015) describe the two distinctive perspectives of design thinking. The first perspective argues for the idea of design and designing being exclusive to professional designers. They believe in the singularity of the concept and practice of design. The other perspective views design as inclusive in which both professional and non-designers can engage in design. This view supports the co-design concept of bringing design experts and non-designers together to co-create in a design process (Trischler and Scott, 2015). From a design standpoint, co-design is viewed as collaborative creative design (Gul and Maher, 2008; Kankainen et al. 2011; Mattelmaki et al. 2011; Park, 2012); from a public management perspective, the co-design concept represents the way in which service actors collaborate through design process to achieve the co-production and co-creation (Sanders and Stappers, 2008; Gebauer et al. 2010; Botero and Hyyselo, 2012; Trischler and Scott, 2015; Vink et al. 2016; Rogers, 2017).

## Service Innovation in the Public Sector

The broad use of the term ‘innovation’ is usually equated with novelty or something new but this has led to the debate among innovation scholars about the difference between innovation and invention (Mulgan and Abury, 2003; Hartely, 2005). However, there are divergent views on the definition of innovation (Toivonen and Tuominen, 2009; Witell et al. 2016). The public sector has always been perceived and described as being lethargically innovative compared to the private sector (Scupola, 2014). While the responsibility of innovating rests with staff and the organization in whole in the private sector (Hartley, 2005), innovation in the public sector is contingent upon policies and paradigmatic influences (Djellal et al. 2013). Despite the surge in the research literature on innovation in the public sector over the years, the nature and process of innovation remain ambiguous (Osborne and Brown, 2011).

However, Bommert (2010) argues in favor of a new paradigm that could foster collaboration innovation in the public sector. Similarly, Sorensen and Torfing (2012) point out that the lack of interactive climate in the public sector could inhibit collaborative innovation; therefore, for such an interactive process to exist, managers must act as the conveners, mediators and catalysts for interactive sessions. The main limitation of the model is that it is producer-centric and neglects the user as a potential co-producer in the innovation process.

## Service Innovation: Service Management Perspectives

In terms of perspectives on service innovation, three main perspectives dominate recent discussions and debates on the concept in innovation research. Assimilation perspective asserts that innovation is rooted in the technology and views it as an outcome of technological inventions (Drejer, 2004; Coombs and Miles, 2000). Demarcation perspective takes a dyadic approach to the conceptualization of service innovation (Toivonen and Tuominen, 2009; Witell et al. 2016). It views service innovation as inherent in business relationships between a producer and a service user or between the firm and the client; it also differentiates between service innovation and product innovation (Witell, 2016).

The synthesis perspective is integrative in its approach to defining service innovation. It combines some of the premises of the other two perspectives but the distinction lies in its view of service as ‘a perspective on value creation’ (Drejer, 2004; Edvardsson et al. 2005; Skalen et al. 2014). The synthesis viewpoint of service innovation emphasizes that ‘service as a perspective can be used to understand innovation in all types of offering’ (Witell, 2016). The conceptual shift from good to service dominant logic in service management influenced the emergence of the synthesis perspective of service innovation (Sangiorgi and Prendiville, 2014). The argument of the synthesis perspective is that the innovation lies in a new process development or new outcomes that enable value co-creation (Skalen, et al. 2014). This paper

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draws on the tenets of the synthesis perspective to delineate the role of service design consultancy in the public sector. Owing to its conceptualisation of service innovation, the synthesis perspective is suitable for understanding the role of service design consultancy firms in the public sector.

Description	Assimilation	Demarcation	Synthesis
<b>Core Concept</b>	Innovation	Services Innovation	Service Innovation
<b>Definition of innovation</b>	New technological development	New Products and New Services	New Process and New Outcome
<b>Location of innovation</b>	Innovation is product-centric	Innovation is service-centric	Innovation is co-produced in a network
<b>Approach</b>	Technological	Service-oriented	Integrative

Figure 1: The Service Innovation Perspectives (Witell, 2016)

The synthesis perspective is premised on the tenet that service innovation entails both the development process of a service and its outcome. The innovated service is viewed as an embodiment of value propositions that are created through the development of existing practices or creating new ones (Cullen, 2008). It takes a user-centric view of how innovation affects the user in terms of facilitating value-in-use through the creation of a new process (or an improvement on an old process) and a new outcome. Skalen et al. (2014) support the notion by asserting that service innovation occurs when new value propositions are created through the development of new or existing practices and resources or through new ways of integrating these practices and resources.

### Service Design Consultancy Firms as KIBS

Consultants have been deemed as knowledge producers who sell knowledge and expertise, build relationships with clients in the process, and affect structural and systemic change (Gunter et al. 2015). Consultants can be internal- when they are in-house and are within the client's organizational structure or external- outside the client's organization but are hired to solve or assist with solving a problem (Strambach, 2008). External consultants are usually hired because of the idea that they can offer objectivity and a fresh outside-in perspective (Soriano et al. 2004; Wye et al. 2015).

Studies on consultancy, its growth, the role of consultants and the contribution are ubiquitous (Muller and Doloreux, 2009; Radnor and O'Mahoney 2013; Kuusisto and Viljama, 2004). In the accounting-related literature, KIBS are described as knowledge-producers and change agents (Lapsley and Oldfield, 2001; Kuusisto and Viljamaa, 2004; Christensen, 2005; Sturdy et al. 2013). The innovation-related literatures on KIBS assert the description of consultants as co-producers of innovation (den Hertog, 2000; Huggins, 2011; Doloreux and Shearmur, 2013; Ferreira et al. 2013; Pina and Tether, 2014).

However, KIBS are not limited to accounting and management consultancy firms. According to Sangiorgi et al. (2015), design firms are also a type of KIBS because some are service organizations that offer professional knowledge while others are product design firms who are consulted to design products for clients. Strambach (2008) identifies three main features that characterize heterogeneous KIBS divisions in which service design firms also possess: a) knowledge-intensive services that are intangible, research and solutions, b) interaction is the

mode of provision and cumulative learning occurs among actors c) they are into the activity of consulting which involves problem-solving through the adaptation of expertise and expert knowledge.

This buttresses the view of Kuusisto and Viljamaa (2004) that emphasizes the mutual exchanges between the consultant and the client (service provider/user), reciprocal learning and an interactive process of jointly creating the solution or service (Kuusisto and Viljamaa, 2004).

Pina and Tether (2014) note that most past studies on KIBS have either treated the group as a homogeneous, classifying most KIBS under management consultancy, R&D and IT firms or paid little attention to other types of KIBS and the way they co-produce knowledge. Strambach (2008) affirms that owing to the diversity in the KIBS sector, the way knowledge is produced for or with the public sector clients is complex and idiosyncratic to each sub-sector. For instance, science-based KIBS tend to be more analytical than the industrial types. Miles (2005) opines that KIBS are diverse with variations in the way they consult; therefore, it is important to understand that design consultancies are not just firms with design competence but also as knowledge-intensive business services in the public sector who co-produce innovation through interactive learning and joint problem-solving.

## **Service Design Consultants as Co-Producers of Innovation: Impact on**

### **Governance**

As co-producers of innovation, service design consultants work collaboratively and iteratively with public sector clients and other stakeholders to create new services or improve on existing ones from a people-centred perspective (Sangiorgi et. al., 2015). Also, service design consultants work to give structure and legitimacy to public innovation projects and through their expertise, they stimulate organizational change and cultural repositioning in the public sector (Design Council, 2018). As public sector clients become more involved in the design of services, they take on new roles and become partners and not just passive stakeholders (Verhulst, 2016). Since KIBS foster interactive learning and the sharing of knowledge through interaction and strong client-consultant relationship (den Hertog, 2000), the public sector clients could learn how to innovate through design.

The citizens/users are also involved. Their knowledge, experiences and needs are pivotal to the design process (Sanders and Stappers, 2008). Participatory approaches like co-design becomes the platform where designers and non-designers like users and clients could engage each other, negotiate their various expectations and exchange resources to innovate (Steen, 2013). Bason (2010) notes that the involvement of key stakeholders in the design process is essential to public sector innovation and ultimately a potent recipe for tackling social problems.

In recent years, service design consultants are becoming agents of change in governance. In most OECD countries, governments are embracing the use of service design consultants at the policy level for societal transformation (Verhulst, 2016). In the United Kingdom, the Cabinet Office's Policy Lab is a quintessential case. The Lab is a hub of service design consultants, policy experts and researchers who assist the government in designing innovative public policies through research, digital and design techniques that could contribute to transformative governance. They adopt design methodologies and ethnographic approach to unearth insights to the menacing social problems that require government's intervention and innovativeness. Through an open co-creative approach, services are designed around people's needs and experiences (Policy Lab, 2018).

## Conclusion

Since synthesis perspective considers service as a perspective and defines service innovation as encompassing both new processes and outcomes, therefore, design consultancy firms are facilitators of service innovation and value creation through their co-creative practices and user-centered methods that engender users' value-in-use creation efforts.

Service design is about the application of myriad design techniques in designing services, systems and experiences that are fortified with value propositions, which facilitate the creation of value by the eventual user. By virtue of the adoption of participatory and interactive techniques in service design, it enables a co-creative platform for stakeholders to collaborate and co-innovate new processes and outcomes that the users can utilize for value generation. This is analogous to the KIBS perspective of design consultants as co-producers of innovation.

As external consultants in the public sector, service designers are hired for their expertise and relied upon to assist in the development of new or existing processes and also in proffering solutions to problems through interactions and collaborative relationships. Innovation then becomes a joint effort, a form of co-production that involves the design consultants and a network of stakeholders (clients, users etc.). This collaborative and integrative problem-solving process, usually called co-design, fosters reciprocal learning among the participating actors and potentially positions the service design consultant as a knowledge-facilitator and an important catalyst for value creation in the public sector.

However, it is important to note that this paper does not deem service design as the cure-all to public sector problems. Likewise, service designers are not to be perceived as magicians with the decisive potion for all public ills. They are co-producers whose prospect of spurring innovation when they impart their expertise depends on the partnership that is forged with the public sector clients/stakeholders. Therefore, the interdependency and dynamics of the relationship between service design consultants and their public sector clients need further enlightenment. Furthermore, the popularity of service design in the public sector is already evident in many developed economies, but the impact and contribution of service design consultancy to public innovation still needs more evidence-based inquiry and assessment. Also, there are still refractory institutional constraints and cultural factors that might decelerate the pace of service design impact in the public sector. The public sector is a monolith with behavioural characteristics that could possibly stifle innovation. Bureaucracy, aversion to risk and political agendas of power-holders and power-brokers in the public sector could serve as deterrents to the new way of thinking about public service design and innovation. In other words, if public innovation must be enabled and sustained, service design thinking requires a change in public sector mindset and a new way of doing things.

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# The stakeholder map: A conversation tool for designing people-led public services

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## Abstract

This paper discusses how the introduction of a service design approach inside public administration offices can help public servants to be more citizen-centred. In particular, the stakeholder map, a well-known tool in the service design community, has been investigated as a means to trigger conversation about roles and power distribution at key moments of a project while also paving the way for public institutions to adopt a people-centred approach. The argument draws on a case study in Geneva where a public institution dealing with migrants employed a design team in order to improve their service offering.

**KEYWORDS:** stakeholder map, conversation tool, public sector, social innovation

## Introduction

A gap exists between what citizens expect from the public sector and how public services are in reality. While technologies evolve at fast pace and new hyper customizable, friendly, multi-channel services are flourishing every day in the private sector (Mager, 2016), public institutions are trying to catch up, but with serious handicaps. Law, regulations, financial pressure, norms, bureaucracy are powerful conditions that the people leading public institutions have to deal with, before thinking to innovate (Bason, 2017). Meanwhile, wicked problems with high social implications are becoming disproportionate in respect to the quantity and quality of services that address them. This is for instance, the case of services that respond to the emergency caused by large migration flows. Yet two very inspiring directions are emerging.

The first one is that people are organising themselves to create sustainable solutions aimed at solving urgent issues. This happens through cooperative initiatives, peer-to-peer networks, solidarity groups, which are self-organised and use their own problem solving capabilities. (Thackara, 2015). As an example, while the Danish government imposed border controls, the voluntary based community *Venligboerne* has proposed hospitality initiatives to tackle the migration issue in a completely novel way. The informal groups have spread in more than

hundred cities in Denmark and have even started to flourish in other European countries as well (“Venligboerne”, 2017).

The second emerging direction is that globally, an increasing number of public organizations are starting to look for new approaches to rethink their relationship with citizens and to design better their service offering (Bason, 2016). For instance, initiatives to re-do democracy collaboratively with citizens have been taken in Taiwan, Iceland and Brazil (Simon, Bass, Boelman and Mulgan, 2017). Furthermore, a number of new public organisations are emerging, which have the specific mission to improve the quality of services offered in the public sector, such as MindLab<sup>1</sup> (Denmark), Innovationshuset<sup>2</sup>, (Denmark), Experio Lab<sup>3</sup> (Sweden), La 27e Région<sup>4</sup> (France), Laboratorio del Gobierno<sup>5</sup> (Chile).

At the same time designers are proposing new ways to build the relationships between people and public authorities through what Manzini and Staszowski (2013) identified as two approaches:

- *people-centred approach — more intensive involvement of end-users in research, prototyping, testing, and implementation of services to be delivered by public agencies.*
- *people-led services — engagement of agencies and citizens in a co-production process, whereby users design and implement their own service programs, enabled and supported by public agencies.* (Manzini and Staszowski, 2013)

In both cases the designer is encouraged to facilitate a dialogue between very different stakeholders, empower the voices that are usually more silent and enable a process for these voices to be heard by 'the more powerful ones'.

These two approaches require designers:

- to be able to easily access end-users which can be difficult due to public administrations' rules and regulations or in the case where design is not embedded into the organisation;
- to involve equally and democratically public authorities and citizens in a bottom up co-production process which is even more challenging as it demands a shift in the power distribution/positions/structure.

How can designers make sure these conditions of accessibility and positioning are fulfilled? Since the success of their work might depend on their position in relation to the organisation and the power distribution, what tools could support them in discussing these conditions?

In this paper, the authors discuss the use of stakeholder map, a well-known tool in the service design and management communities, as a means to trigger and support challenging conversations about roles and power distribution/positions/structure. After a brief literature review on tools for conversations focusing on stakeholder maps, a design experimentation will be presented and the use of the stakeholder map by designers with public managers will be discussed.

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<sup>1</sup> Mindlab: <https://www.mind-lab.dk> , accessed January 2018

<sup>2</sup> Innovationshuset: <https://innovationshuset.kk.dk> , accessed January 2018

<sup>3</sup> Experio Lab: <https://experiolab.com> , accessed January 2018

<sup>4</sup> La 27e Région: <https://www.la27eregion.fr> , accessed January 2018

<sup>5</sup> Laboratorio del Gobierno: <https://www.lab.gob.cl> , accessed January 2018

## Tools for conversation

A number of service design tools (user journey, service blueprint, stakeholder map, prototypes) are useful for designers to represent a given context, a concept, a system, a service experience, etc. (reference here). By using visual representations, designers can understand, analyse and furthermore imagine and design new solutions. However, the purpose of these tools is not limited to representing or communicating, these visualisation tools can also work as “conversation facilitators”, they can be used collaboratively to trigger discussion in a design process. In this way, they may support the collaboration of different people in multiple ways (Gaver, Dunne and Pacenti, 1999; Eriksen et al., 2014; Sangiorgi, Patricio and Fisk, 2017).

In Malmö Living Labs<sup>6</sup> for example, prototypes were considered “as vehicles able to raise questions as well as highlighting controversies and dilemmas” (Hillgren, Seravalli and Emilson, 2011). In other words, prototypes were not only made to make an idea tangible, but also to allow for multiple, sometimes contradictory, perspectives to emerge. This coexistence of divergent opinions is qualified as “agonistic” and can blossom into “agonistic spaces” (Ehn, Nilsson and Topgaard, 2014). These spaces are not necessarily physical but can also be mental ones, where respect is shown for the opinions of others and where mutual learning is facilitated.

Manzini, Jégou and Meroni (2004) refer to “design orienting scenarios as a way to constitute “thinking material” to orient the strategic conversations between actors”. They explain how for instance polarity diagrams, system maps or stakeholder motivation matrices can be brought into creative workshops to facilitate the dialogue between actors who have different cultures and divergent visions relating to specific challenges. The point of departure of their study is an established network of actors, equally involved in a design process that will ensure a democratic participation. As such, their challenge is how to involve all the actors if the dialogue started with a privileged one that has more power in the negotiation of the intervention to be done?

The stakeholder map in particular, is one of the fundamental service design tools which gives an overview of network relations (Stickdorn & Schneider, 2010). When doing a stakeholder map, the usual steps are the following: identifying who all the involved stakeholders are or which stakeholders might be involved, mapping them visually and finally analysing their relationships (ibid, 2010). Sometimes called “actor network mapping”, the tool “gives an overall picture of the network of actors and components in the system” (Morelli and Tollestrup, 2007). The stakeholder map is a tool for visualisation, or a “diagrammatic representation [...] as a way to understand the service and identify potential issues and challenges” (Altuna and Jun, 2014). In recent management literature, the activity of mapping stakeholders or “key connectors” is not only used to identify stakeholders but also to measure or predict their potential of influence and impact (Bourne and Walker, 2005; Walker, Bourne and Shelley, 2008).

When used as a tool for conversation, the stakeholder map can be “used in co-design workshops where multiple actors from different organisations gather, to help them express their perspectives and gain a mutual understanding of each other” (Hyvärinen, Lee and Mattelmäki, 2014; Rygh, 2017).

Although many ways of visualising a stakeholder map exist, two main dominant styles can be identified, either writing down the stakeholders in a table (figure 1) or by drawing concentric circles and placing the actors organically (figure 2).

**Stakeholder Map: Queensbridge Connected**

Who are all the different people we should talk to about broadband service at Queensbridge Houses?

Providers or CBOs	City of New York	Queensbridge Residents
Queens Library	Community Programs & Development	Tenant Association president
Queens Library at LIC	NYCHA Communications	Tenant Association sub-committee
Mayor's Office of Operations	NYCHA Resident Engagement	Jacob A. Riis Neighborhood Settlement's senior group
Community Mediation Services	DCA OFE	Community Mediation Services youth group
Citi Community Development	NYCHA REES	
Urban Upbound	NYCHA Research & Analytics	
OATS	NYCHA Public Private Partnerships	
Jacob A. Riis Neighborhood Settlement	NYCHA IT	
	Digital Vans Mgmt.	
	Digital Vans	
	Mayor's Action Plan	
	Community Affairs Unit	

Figure 1 – Stakeholder map example, table style (Service Design Studio at the NYC Mayor’s Office for Economic Opportunity, 2017)

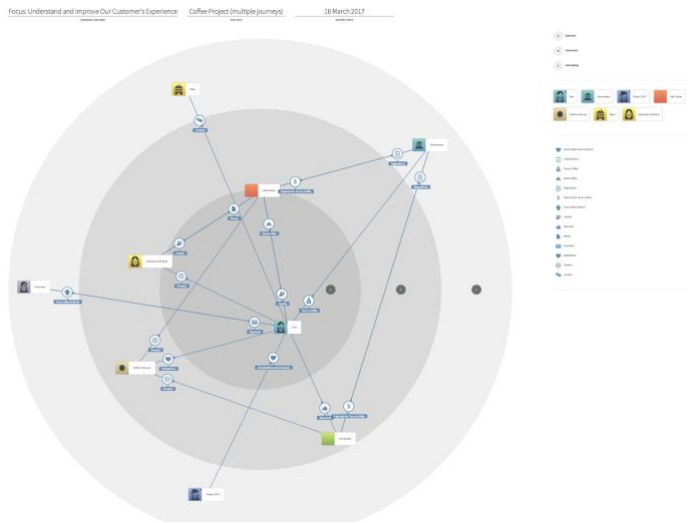


Figure 2 – Stakeholder map example, circle style (Stickdorn, 2017)

In the case presented in this paper, a design team needed to open a discussion about roles, and distribution of power. The designers wanted to motivate public servants to create enabling conditions for stakeholder’s participation into the project. The various roles had to be clarified to the public servant in a playful way, through some actionable tool, that could easily show how the value proposition and the service itself would change when different stakeholders are invited into the scene. With this main aim, an experimentation with the stakeholder map as an actionable conversation tool was designed and conducted in the setting of a mini workshop.

## Case study: designing integration

The case is a project in Geneva, Switzerland, where a public institution dealing with migrants employed a design team to help improve their service offering. This paper focuses on one workshop in particular, where the stakeholder map was used as a tool to open a new kind of dialog with the public institution. The workshop happened at a key moment in the project development (figure 3), meaning at the end of a first phase (*phase 1*) and before the beginning of a new one (*phase 2*). As the first phase was characterised by difficulties for designers to access and involve end-users, the workshop was meant for designers to engage with the public servants in discussing this issue, inviting them to understand what a more people/citizen-centred perspective might add to the provision of their service - creating better value. The workshop was designed and driven by a design team composed of a PhD student (first author), trained as a service designer in close collaboration with an activist (second author), trained as a graphic/web designer working for NGOs defending human rights of asylum seekers. It involved two public servants, the head of the department of communication and the project manager.

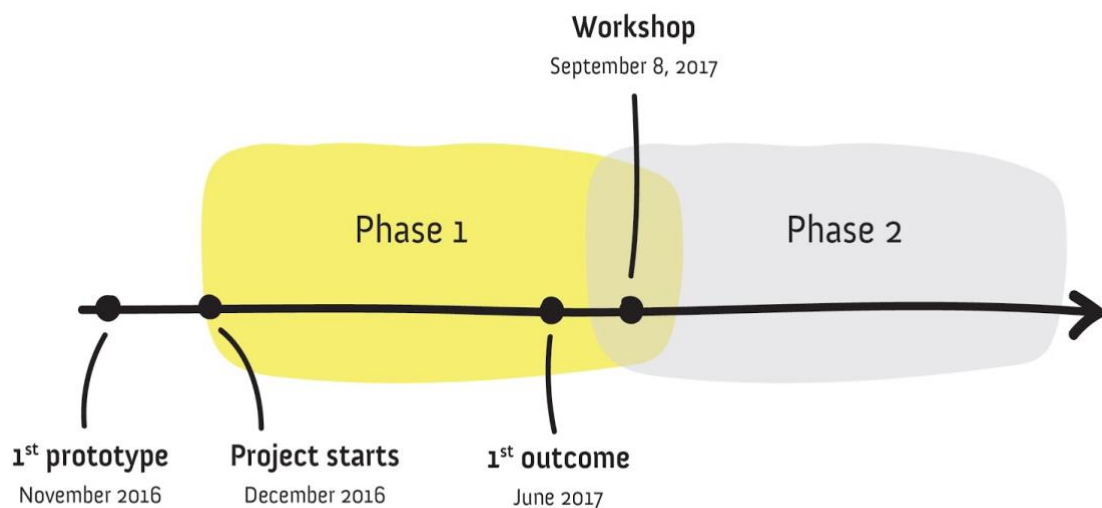


Figure 3 – Timeline and phases of the project

### Initial approach (Phase 1)

The public institution, that was our case holder, has a long history (existed since 1535) and provides social care to the weakest social groups in Geneva, Switzerland. In the year 2017, about 20% of their recipients were migrants. For this reason, one out of their three main missions, is to facilitate integration of migrants into the local community. The public institution operates from the moment in which the asylum seekers register to get a resident permit (the public institution call them “recipient”) by providing numerous services / forms of help such as social care, financial support and education, giving access to healthcare and housing as well as organising events and leisure activities. Since the demand has been growing due to the so-called “refugee crisis” and the public institution has been more and more under financial pressure, they were interested in new solutions that could ease the integration process of migrants by improving their service delivery.

In December 2016, the design team approached the public institution with an interactive prototype which consisted of an app connecting newcomers with the local life of Geneva. The concept had two parts:

- The first is information based: information useful to migrants in Geneva are gathered and displayed in an accessible and comprehensible way. This means translating long administrative jargon into a simpler, condensed and visual language.
- The second is community based (people-led service): migrants, local citizens, volunteers and other local actors can connect and create synergies by proposing activities to do together, such as playing guitar or knitting, just to give a few examples.

The director of the public institution decided to start a collaboration to further develop and implement the information part (*Phase 1*) of the concept to begin with. Seven months later, the first version of the proposed concept was developed and launched: a user-friendly website that collected all the useful information and available services for migrants provided by the municipality of Geneva. One of the key characteristics of the website is the catchy, inviting and self-explanatory visual representation of its content: the website had to be inviting for migrants with language challenges.

Reflecting back on the design process of this first phase that lead to this first outcome, it can be questioned whether this was truly a people-centred approach or, in other words, to what extent migrants and other stakeholders had in fact been able to participate and to influence the design of this new service. Within seven months three participatory interventions were carried out: one 3h long workshop, one 2h long feedback-meeting and finally one 3h user-testing session. These involved a total number of 21 recipients and 3 employees of the public institution. The interventions were fruitful and helped considerably to challenge the public servants' and the design team's assumptions and to change the perception of recipients, from a problem for the public authorities to a source of information to create better solutions for the whole community. However, referring to "the ladder of citizen involvement in decision making" (Arnstein, 1969; Bason, 2017), the role of the recipients in this case was closer to a "subordinate" than an "empowered" one. The decisions were made either "for" the recipients or "with" them but very little decisions were made "by" them. In other words, the power had stayed in the hands of the design team and the public institution and had not been delegated to the recipients.

The fact that the design team had worked remotely most of the time is one of the limitations that might explain why the process turned out in the way described above. Another aspect can be discussed through the analysis of the dominating approach of the project (institution-centred) and the design team position in respect to the other stakeholders. The design team was too external and had several "gatekeepers" between them and the recipients. In other words, there was a complex structure that made the process of contacting or involving recipients difficult and time consuming. There was a great need for clarifying and possibly defining a clearer structure as the project evolved.

Nevertheless, the public institution was proud of the accomplishment and was willing to continue the collaboration to develop the project further. The design team wanted to pursue the work as well and set the challenge for this second phase to push for more and better involvement of the recipients as well as other relevant stakeholders such as other migrants, local citizens and other organisations, building on the acquired experience, knowledge of the context and the relationships the design team established in the first phase of the project.

## Stakeholder map as a tool for conversation (Workshop)

Before moving to the second phase (*Phase 2*) of the project, the design team needed to clarify the organisational structure around the designed service and to open a different dialog with the public institution about stakeholders' involvement. To achieve this, the design team took the coming scheduled meeting with the two leaders of the project (the project manager and the head of the communication department) as an opportunity to bring in this challenging conversation. The meeting was going to take place at the office of the project leaders within the public institution, it had 1h duration and was supposed to conclude the past phase of work and start the planning of the future tasks. The design team designed a mini workshop that could fit in this short time frame using the stakeholder map as central tool. The hypothesis was that the stakeholder map tool could be useful in this short meeting to:

- create a common understanding all along the conversation by making the subject of conversation visual and tangible;
- provoke reflections on what had been each other's roles in the past phase 1;
- suggest a new common vision for how to approach the future phase 2;
- discuss the possible modalities of involvement of recipients and other stakeholders in the phase 2.

The designer's vision was to get closer to the highest level of the ladder of citizen involvement in decision making for the future phases of the work (Arnstein, 1969; Bason, 2017). In other words, the aim was to use the stakeholder map as a conversation tool to suggest more meaningful citizen participation and other stakeholder's involvement (recipients, other migrants, local citizens, other organisations providing services to migrants as well). The mini workshop was not meant to be a co-design activity in itself. Instead, the activity was framed as a productive conversation with the projects' leaders, who could effectively enable later in the process co-design activities with wider range of stakeholders.

The design team prepared a set of cards with the stakeholders' figures hand-drawn on them. Only the actors who had been playing or could possibly play a major role in the project were chosen. A few cards were left blank in case it would make sense to add other stakeholders during the conversation. A particular attention was given to the way the different actors are labelled, using the public institution's vocabulary. For instance, "recipient" was preferred over "migrant". In addition, there were two sheets of papers. One titled "present" for reflecting on phase 1 and one titled "future" for envisioning the phase 2. Dotted circles were drawn to represent different layers. In the centre are the most powerful stakeholders with most responsibilities, in the outskirt are the least powerful ones. The tool was made low tech from re-used material on purpose so that it could be easily modifiable and possibly reproduced by the public servants themselves (figure 4). For the sake of readability, the different maps generated during the workshop were re-drawn in a graphical format. See the overview of the stakeholders (figure 5).



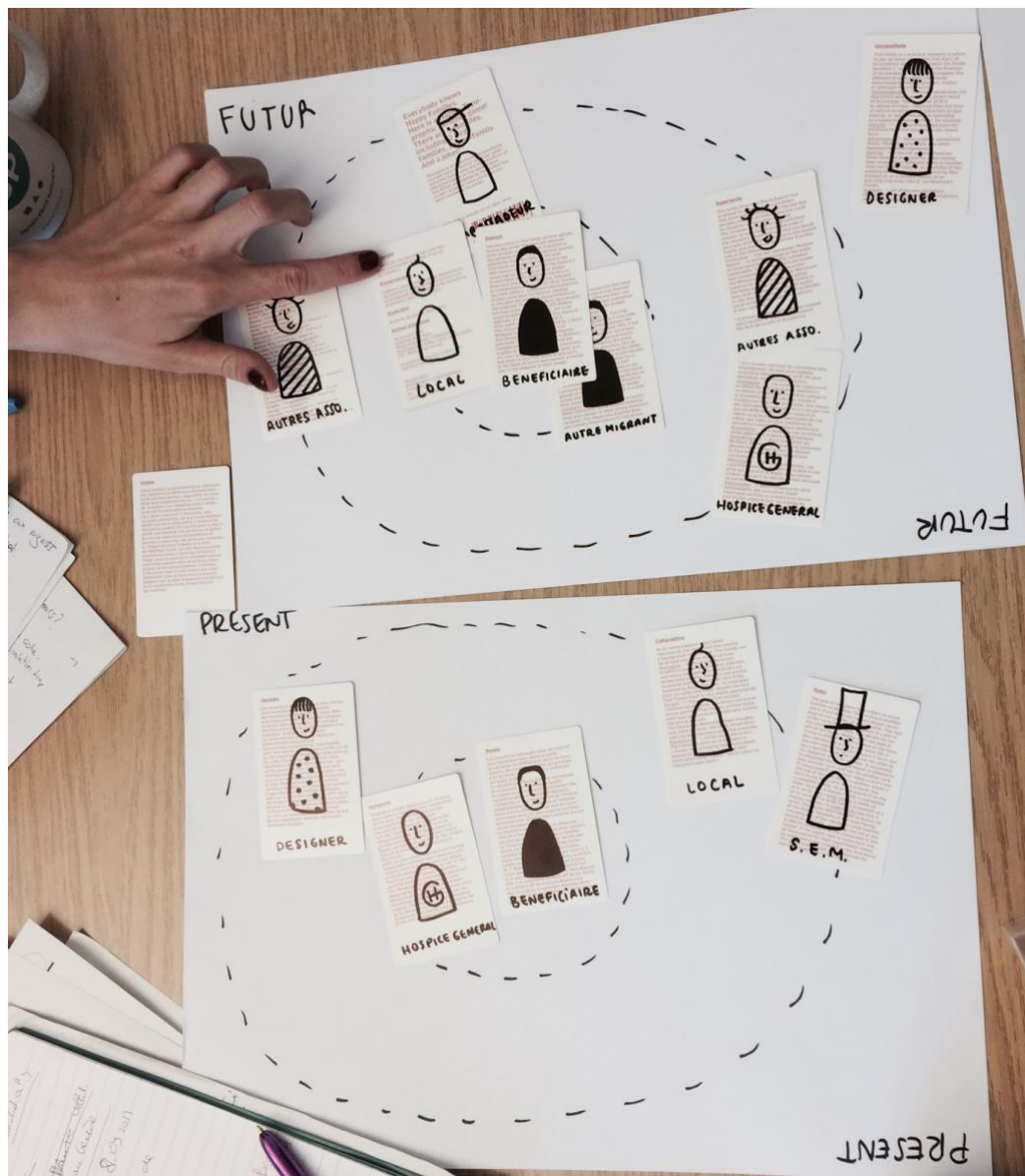


Figure 4 – Actionable stakeholder map used during the workshop



# STAKEHOLDERS' OVERVIEW

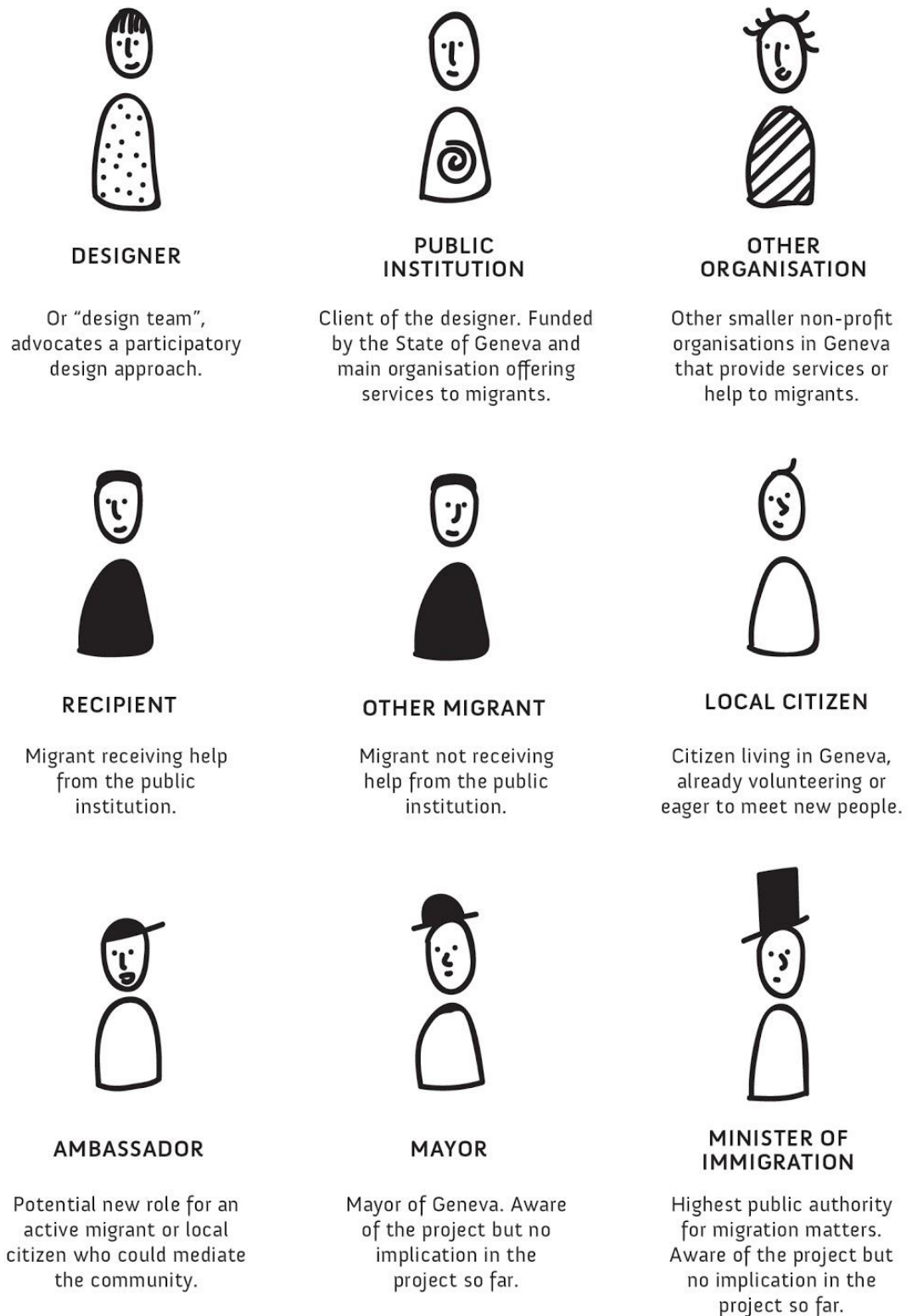


Figure 5 – Overview of the stakeholders

Before the workshop, the tool was used to align both members of the design team on the vision they wanted to bring in the conversation (figure 6). They envisioned an ecosystem with a user/people/citizen-centred perspective where all newcomers - recipient of the public institution and others - would have the most central role together with local citizens. Small other organisations providing already lots of services and activities would play an important role in making bridges between recipients and local citizens, communicating information, organizing activities to bring both groups together. The position of the designers would be close to the centre even though already in the second circle, when building the service, testing, working together with recipients and local citizens. The institution card is placed at the same level as the designer card to suggest a more supportive role than a leader one, letting as well designers to get direct access to the users/citizens. This is a way of positioning actors that, designers believe, could facilitate the practice of a people-centred approach and design people-led services.

## FUTURE

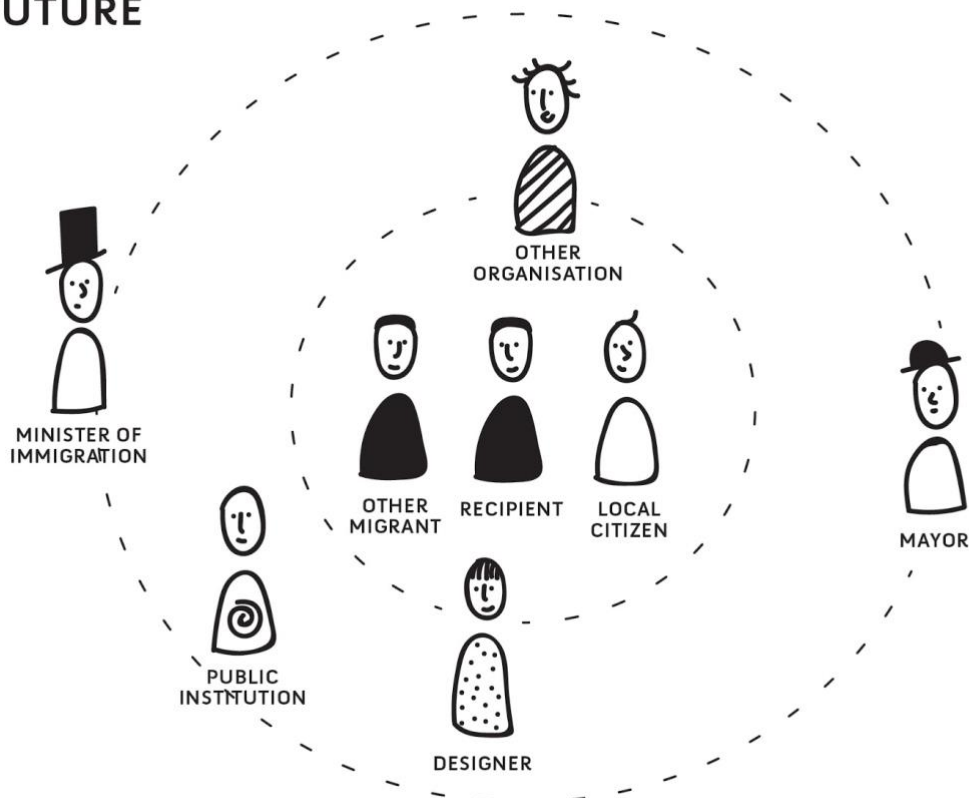


Figure 6 – Stakeholder map of a future vision done by the design team before the workshop

At the beginning of the workshop, the design team introduced the tool to the public servants as a “service design tool consisting of cards we can play with to map everybody’s role in the project”. The stakeholders on the cards were presented, mentioning that everyone could add more of them if needed. The functions of the two “present” and “future” templates were made explicit as well. The public servants were asked to be the first to place the cards so that the design team could minimize their own influence. The present situation was mapped first, followed by the future vision.

As first action on the “present” map (figure 7), public servants (the head of the communication department) placed the card which represents the institution and put it in the centre. The project manager quickly added the recipient card as well in the middle. By placing their own card in the centre, it showed that they considered themselves as an

essential stakeholder with most important role. Having put both cards on the same level could also demonstrate that they tend to mix up who should actually benefit the project with who funded and facilitated it. Moreover, public servant's interest of being seen as innovative in the way they help migrants might have influenced them in placing the cards thus.

On the first version of a “future” map (figure 8), the public servants expressed their wish for having more solidarity, exchanges and equal roles, placing everybody, but the local people, at the same level. The project manager kept his position by considering the role of the institution as important as the role of the recipients.

After the design team gave new inputs into the discussion, the roles of each stakeholder were re-discussed and the central focus shifted from the public institution to the people using the service, meaning the recipients, migrants and local citizens (figure 9). The institution has been placed in the outskirts circle, together with other organisations. A new role grew out of the discussion and the “ambassador” card was created as to represent a mixed group of migrants and local citizens who would mediate the future community. This showed that public servants were willing to open the project to people outside of the public institution, letting the ambassador moderate communication between recipients, other migrants and local people. The stakeholder map helped public servants to understand better the goal and where focus could be put on.

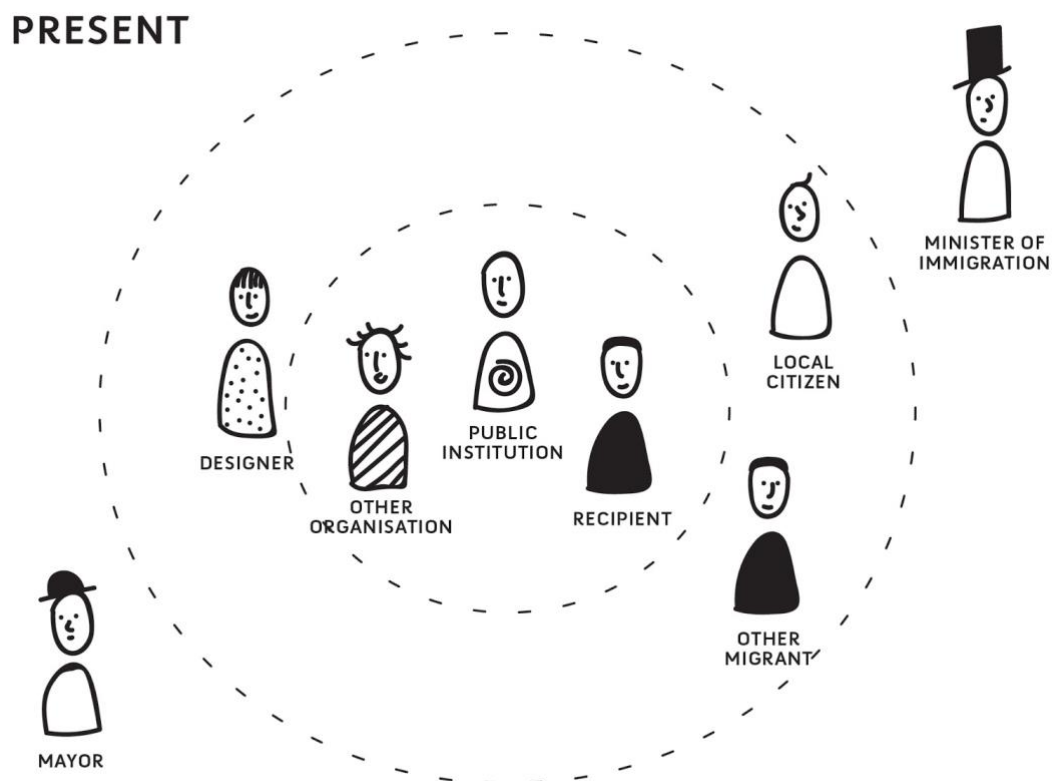


Figure 7 – Present situation done by public servants alone

## FUTURE

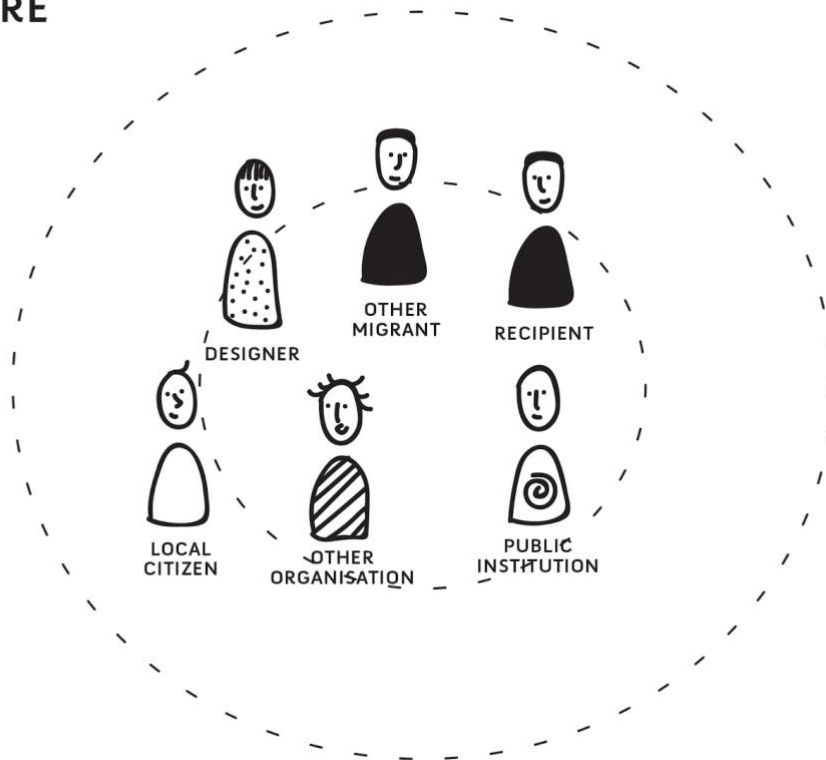


Figure 8 – Future vision done by project manager

## FUTURE

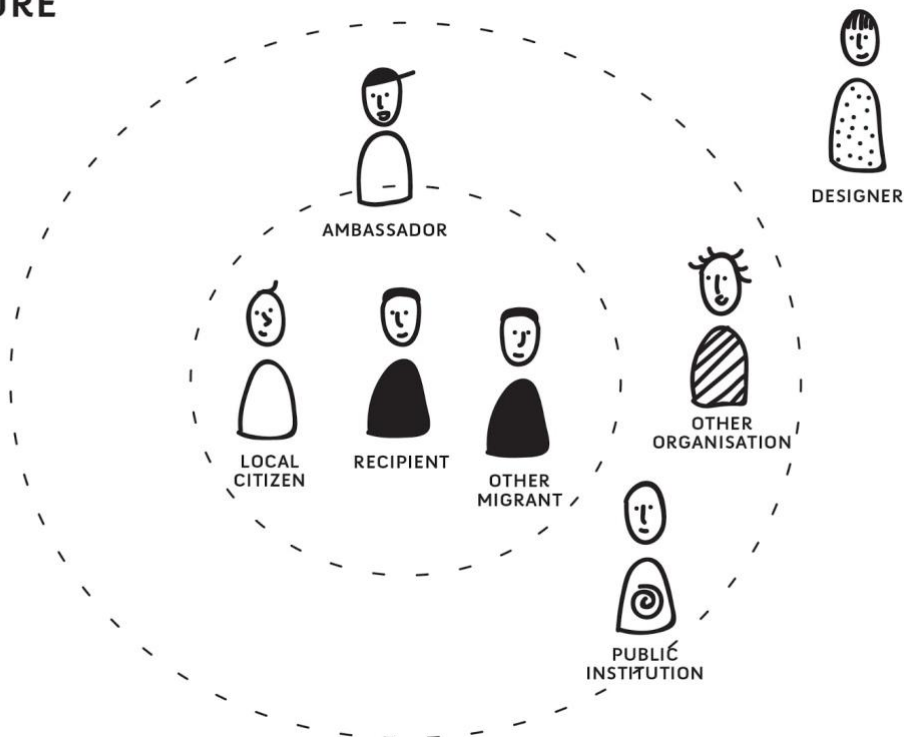


Figure 9 – Final future vision done by public servants together with design team

## Discussion

The activity made clear that the different actors involved in the project had very different perspectives: the head of the communication department was mostly focused on the public institution's interests and on other organisations as well as on public authorities in general. On the other side the project manager was concerned by the recipients, other migrants and local citizens. As a matter of fact, the project manager is the one who had been more collaborative during the project and had played an important role in the participatory interventions, whereas the head of the communication department had followed the project from a certain distance. One way to understand this difference, might be rooted in the different job descriptions of the involved employees. The project manager was in charge of logistics, collecting all necessary info for website's content, contacting external organisations and presenting the project. While the head of communication set up meetings, worked together with the HR to complete the team, and communicated with the director's institution, and with the office integration of the State. Also, the project manager had been the one most actively involved in the dialogue with the design team and the organisation of the participatory workshops - and had therefore been more influenced by the designer's perspective which is a more people/citizen-centred one.

Nonetheless, the manipulation of the cards triggered a constructive conversation about the roles of each stakeholder. Bringing this particular service design tool to the table gave the design team an excuse to suggest the public institution to give a more central role to recipients, local citizens and other migrants in the future.

Moreover, mapping the stakeholders helped to build and discuss a common possible vision for the future of the project. When the head of the communication department said "we will always be seen as the "mean one" but this project can help us to get closer to other organisations", the design team understood that the public institution was ready to have less of a monopoly on providing services to migrants and wanted to build more and stronger partnerships with external smaller organisations.

Another positive aspect is that by moving the cards the public servants expressed things that were new to the design team. They mentioned lots of other similar initiatives to the one discussed and shared their doubt concerning whether the community based service would work or not in a long-term perspective. This made us aware that both the public servants were very up to date with what is happening outside of the public institution. The head of the communication department stressed that "we should not forget that migrants are one category among lots of other social applicants". They were obviously balancing a fear that too much effort and resources would be put in projects for migrants compared to other kinds of people the public institution is taking care of. Reflecting on this, it is interesting that this way of shifting perspectives on who to offer the service to could also be scaled to include other groups of social applicants.

Finally, little was discussed about the specific conditions that could facilitate the process of involving stakeholders. Instead the discussion shifted to a conversation about how the future community could be built. The public servants and the design team were eager to bounce ideas since new potentialities had been uncovered during the conversation.

If the experiment was to be repeated though, the tool could be more inspired by management theory. Looking at the *stakeholder circle* for instance, developed by Bourne and Walker (date), there could be greater emphasis put on showing stakeholder's influences and impact on the project, which could trigger questions such as what is the current impact of recipients on the design process? What could be their wanted impact in the future?

## Conclusion

In this paper, we have discussed how the stakeholder map, a well-known tool in the service design community, could be useful when wanting to design people-led public services. The case study served as playground to experiment with the stakeholder map not only as a representation tool but as an actionable, conversational tool that allowed for opening a dialogue about roles and power positions. This is a difficult but useful discussion that can pave the way for public institutions to adopt a people-centred approach, enabling meaningful and active involvement of a variety of stakeholders (especially end users) in the process of designing a public service. Referring to Manzini (2015), the stakeholder map in this case was used as a “conversation prompts. Meaning a communication artefacts, that may be intended to illustrate the state of things and viable alternatives in a more accessible way [...]”. A quite simple setting had helped to clarify and to reflect on a fuzzy and complex network of people and had allowed for divergent interests to coexist in the conversation.

The specific benefit for designers to use stakeholder map as a conversation tool with public servants is to open up discussion about the designer’s role and position within the complex context they are designing in. From there, by moving the stakeholders around in a metaphorical way, designers can challenge the perspective of the public institution. Using the tangibility of the tool designers can suggest easily to give a more central role to the citizens the public institution is serving. In this way, inviting stakeholders to participate in a project may be more easily accepted and facilitated by the public institution. In addition, the use of this tool can uncover potential stakeholders that might otherwise risk being overlooked, which can lead to better design opportunities.

Doing the exercise of mapping stakeholders and discussing positions and roles together with a design team can help especially public servants to understand what it entails to be people/user/citizen-centred. They can see more clearly who to prioritize their focus on and how they can position a design team and other players in relation to themselves: enabling the involvement of both citizens and external stakeholders. Public servants are also given the opportunity to express specific context related constraints or conditions for the designers to be aware of and knowledgeable about.

Considering that mapping stakeholders provides knowledge about the *who* (who has power?) and the *where* (where is one positioned in relation to others?), this activity can be the input for using other tools such as motivation matrix (Morelli, Tollestrup, 2007) which is particularly helpful to understand the *why* (why should one share power?).

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## Figures

All the figures were produced by the authors expect figure 1 and 2:

Service Design Studio at the NYC Mayor's Office for Economic Opportunity. (2017). *Example Stakeholder Map: Queensbridge Connected*. New York: NYC Mayor's Office for Economic Opportunity. Retrieved from [http://www1.nyc.gov/assets/servicedesign/downloads/toolkit/templates/examples/3\\_CS\\_D\\_ToolsTactics\\_StakeholderMap\\_example2.pdf](http://www1.nyc.gov/assets/servicedesign/downloads/toolkit/templates/examples/3_CS_D_ToolsTactics_StakeholderMap_example2.pdf)

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# Different journeys towards embedding design in local government in England

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## Abstract

Changing contexts of society, and increasing expectations and demand for better services by citizens and communities are continually pressing public sector organisations to provide better services with lower costs in the face of economic crises. In order to cope with the challenges facing public sector organisations, innovation and transformation have become fundamental for local government because of its structural and cultural limits. Design is now widely considered as an alternative approach to drive change in the public sector because of its democratic and creative way of working based on human-centred design process. A large number of local governments around the world have been trying to apply and embed design in their organisations in order to modernise service delivery, innovate services and policy-making, and eventually change how they work. The aim of this paper is to present the different journeys towards embedding design within local governments and identify the challenges faced along the journeys using case studies of three local councils in England. In doing so, this paper contributes practical knowledge for designers and non-designers alike who are concerned with embedding design in local government.

**KEYWORDS:** service design, design thinking, embedding design, local government, design intervention model, organisational change

## Introduction

This paper is the part of researcher's ongoing PhD study, 'Design-led collaborative public service innovation', investigating the role that designers and non-designers play in enabling and supporting collaboration within local government context in England. The research was based on a survey and case study approach including in-depth interviews and ethnographic observations. However, the main focus of this article lies in describing why and how local councils in England try to embed design within their organisations and identifying what challenges they face.

There are increasing expectations and demands for better services by citizens as service users and taxpayers, which has been pressing public sector organisations to provide better services with lower costs (Albury, 2011; Baek et al., 2010; Design Commission, 2014). In order to

cope with these challenges and meet citizens' needs in a complex and constantly changing society, innovative approaches are essential for public sector organisations because of their structural and cultural limits: a bureaucratic and hierarchical structure, silos among departments, and risk aversion (Carstensen & Bason, 2012; Mulgan & Albury, 2003; Sørensen & Torfing, 2016). Over the past decade, design approaches have been applied as a tool to support innovation and change in public sector organisations in a number of countries (Bason, 2012), while the public management paradigm shifts from a classic bureaucratic model (New Public Management) to a more cooperative model (New Public Governance, also called Network Governance) (Bason, 2012; Junginger & Sangiorgi, 2011; Kelly, Mulgan, & Muers, 2002; Sangiorgi, 2015). This is because design-led approaches help facilitate public sector transformation and value co-creation through collaboration with various stakeholders, such as public servants, partners, and citizens (Kimbell, 2011; Meroni & Sangiorgi, 2011). They enable better communication among the stakeholders through diverse design tools and methods based on a human-centred design perspective. This, in turn, supports effective decision making processes considering stakeholders including front-line staff and citizens as partners not subjects (Sanders & Stappers, 2008).

Design-led collaborative approaches, such as Service Design and Design Thinking have been widely explored with regards to their applicability to public sector innovation (Bason, 2010, 2013; Cook, 2013; Mulgan, 2014; Sanders & Stappers, 2008; Sangiorgi & Clark, 2004) and public governance transformation (Bason, 2017; Dunleavy & Margetts, 2015; Hartley, 2005). Additionally, there is a range of research investigating the process of building design capability and embedding design in public sector organisations (Bailey, 2012; Bason, 2017; Design council, 2018; Snook & DMA, 2014; Thomas, 2008), as well as exploring the development of design tools and methods for collaboration (Sanders & Stappers, 2008; Stickdorn et al., 2011). Moreover, there are few practical guidebooks that support the distribution of design-led approaches to public sector innovation (IDEO et al., 2016; Nesta, 2011). However, the focus of research has been predominantly on the engagement of service users, and the application of various tools and methods. Furthermore, there is a lack of empirical research investigating contextual factors that affect the way of applying and embedding design, particularly in local government contexts.

This paper as the part of an ongoing PhD study aims to investigate research questions: 1) Why do local councils try to embed design in their organisations? 2) What contextual factors have influenced the selection of their different journeys towards embedding design? 3) What challenges have emerged during the process of applying and embedding design within the councils? The data collected through the in-depth interview with service designers and public servants was mainly analysed for this paper through thematic analysis method.

## Background and context

### The use of the term 'Design' in this paper

In local governments, people often use Design Thinking and Service Design interchangeably as a designerly way of working or a new way of working based on human-centred design process. Although there are differences between the two in their history of origination and in the use of specific tools and methods, they are both considered and applied as an approach to innovation and organisation change within the local government context. Therefore, the term 'design' will be used in this paper as an umbrella term representing a design-led collaborative approach to service development based on human-centred design process, not only including Design Thinking and Service Design, but also including a blended approach between the Service Design and Agile approach. The following sections give the background to the study.

## Local government in the UK

Despite public reform carried out in 1974 by The Local Government Act 1972, in some areas of England, local government is divided into a county council (the upper tier) and a district council (the lower tier), which are responsible for different services; unlike Scotland, Wales and Northern Ireland where there is a single unitary authority. Apart from parish and town councils, there are 418 local authorities in the UK which includes unitary, upper and lower tier councils. District, county and unitary authorities are sometimes referred to as 'principal councils' to distinguish them from parish and town councils. Out of 418 local authorities, 353 are in England, of which 27 are county councils, 201 are district councils, and 125 are unitary authorities. Of the latter, 32 are London boroughs and 36 are metropolitan boroughs. Local governments in the UK are the minimum unit having an autonomy to create services and make policies to support the services by themselves (Chandler, 2009).

## Why innovation and transformation in local government matter

According to the Local Government Association (LGA), by 2020, local governments in England will have lost 75 percent of central government funding compared to 2015 (Burns, 2017). This means that almost half of all councils in England will no longer gain any core financial support from central government by 2020. In the face of this financial challenge, as well as rapidly evolving technologies and political changes, it is important for local governments to build organisational capability to enhance their capacity for innovation enabling constant and systematic innovation in the entire organisation because the traditional ways of working cannot address all these complex challenges (Sørensen & Torfing, 2016). Moreover, innovation in local government is closely related to maintaining an accessible public sector organisation that is beneficial to the everyday life and wellbeing of citizens.

## The Public Sector Design Ladder

In 2013, four member countries of the Sharing Experience Europe Platform (SEE platform) published a paper presenting a series of case studies regarding how design is being used for public sector innovation in order to give a better understanding of design driven innovation and share integrated methods for it. The public sector design ladder (See Figure 1) exhibited in the paper proposes three levels of design use as a diagnostic tool and a roadmap for progress so that individual public sector organisations can check where they are in applying design for innovation (Design council, 2013).

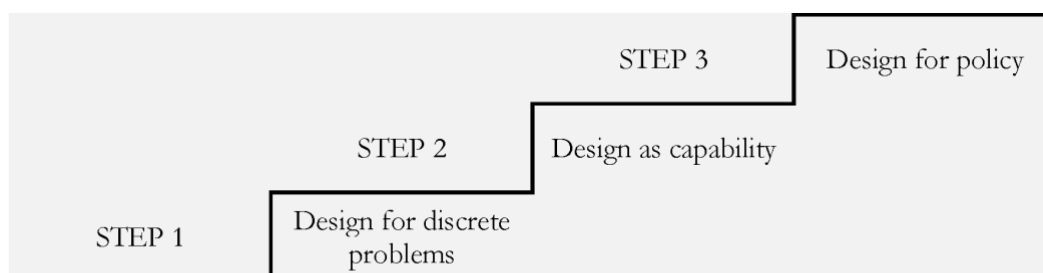


Figure 1. The public sector design ladder (McNabola et al., 2013, p6)

- **STEP 1: Design for discrete problems**  
At this step, design is used for one-off project basis to deal with discrete problems such as malnutrition among the elderly and digitisation of the services in the public sector. Building design capability to embed design in the organisation is not an issue at this STEP.
- **STEP 2: Design as capability**

Many public sector employees at this step have an understanding of what Design Thinking is and how to apply it into their everyday work. Moreover, they play a key role in disseminating the knowledge and techniques of Design Thinking across their organisations.

- **STEP 3: Design for policy**

At this step, policymakers use Design Thinking through co-design workshops, often facilitated by designers for policymaking and implementation as a way of getting an overview of a system, engaging various stakeholders, and then breaking down departmental silos.

This Public Sector Design Ladder was used to check where local governments in England are in using design for innovation.

## Different types of Design Intervention Model

The way of describing how design work intervenes in organisations was adopted from the paper, ‘Restarting Britain 2: Design and Public Services’, published by the Design Commission in 2014 and the Models of Invention defined by two service design agencies in their reflective report (Snook & DMA, 2014) which was based on their collaborative projects for public sector organisations. They were adjusted based on the recurring features emerged from a preliminary survey conducted by researcher with regard to how design was employed and situated within the local government settings. The different types of intervention were then classified into four distinct models according to the type of designer involvement in service development projects. There are four types of Design Intervention Model that are recently adopted by local councils in England (See Table 1).







			
Non-designer Model	External Designer Model	Internal/External Designer Model	Embedded Designer Model
A way of applying design by the team made up of internal public servants deploys design approach without the help of professional designers	A way of applying design by a traditional design project team made up of external designers on a project-by-project basis	A way of applying design by the temporary design unit organised with external designers and selected public servants, which is strategically established within the organisation	A way of applying design by a service design team includes full-time service designers hired by the organisation to develop design capacity and redesign services
 : Local government organisation		 : Designer(s)	

Table 1. Different types of Design Intervention Model

The Non-designer Model describes a way of applying design in a local government context by the team only consisting of internal public servants, which deploys the design approach without the help of professional designers. In terms of the External Designer Model, it describes a traditional consultancy from a design company on a project-by-project basis

without a dedicated team within an organisation. This is the most general way of employing design in a public sector organisation. Most local governments experience design approaches such as Service Design and Design Thinking for the first time through this model before they actually find the benefits of the design approach to service innovation, and then move to the other models. The Internal/External Designer model describes a way of applying design through a temporary design unit organised with external designers from a design agency and certain internal public servants, which is strategically established within an organisation for an effective knowledge transfer between designers and public servants. Many local governments in England are now adopting the Non-designer Model either with or without going through the External Designer or Internal/External Designer Model. Lastly, the Embedded Designer Model illustrates the way of working through the internal service design team which includes full-time designers hired by the organisation to develop design capacity and redesign services.

## Methodology

As mentioned earlier, this paper intends to share some of the findings of researcher's ongoing PhD study, 'Design-led collaborative public service innovation', being investigated through a survey and a case study approach including in-depth interviews and ethnographic observations. In this paper, the data collected through the in-depth interview with service designers and public servants was mainly analysed through thematic analysis method by formulating themes from interview transcripts in relation to the research questions. Additionally, secondary data that obtained from internal reports, programme documents, and annual reports of each council was also analysed (See Figure 2).

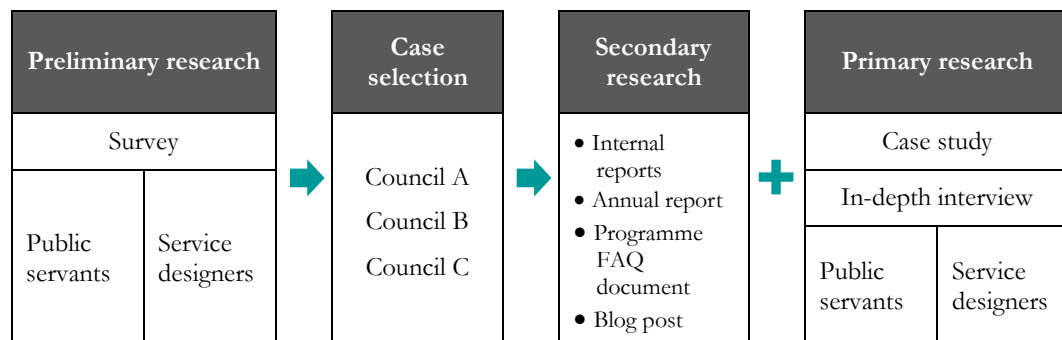


Figure 2. Method of data collection

## Case selection

Three councils in England are selected as the samples for the case study on the basis of the responses to the preliminary survey which aims to build a better understanding of design-led approaches to collaborative service innovation and organisational change in local government contexts. They all have been trying to embed design within their organisations using the different types of design intervention model respectively. Moreover, the author could gain permission to interview public servants and service designers, and to attend the design workshops for ethnographic observations from the three councils. They are anonymously displayed as Council A, B, and C because of confidentiality issues. Council A is using the Internal/External Designer Model, having a dedicated team to disseminate Agile and service design approaches as a new way of working at the time of the interview with service designers and public servants. Council B is adopting the Non-designer Model and trying to spread Design Thinking across the organisation through service design training workshops and co-design events inviting various stakeholders, including citizens. Council C belongs to the Embedded Designer Model as it has a service design team made up of three service designers specifically hired by the council.

## In-depth interview

All interviews with service designers and public servants from the three councils were conducted between December 15 in 2016 and October 16 in 2017. They were face-to-face in-depth interviews based on an open-ended questionnaire and they lasted around one hour on average. They were voice-recorded with the interviewees' consent and transcribed to analyse in order to understand why, what and how local governments try to embed design within their organisations, and what kind of challenges they encounter in the course of embedding design. There are five interviews in total performed with Council A. Three of the five interviewees are public servants and the others are service designers. Three public servants in Council B and two service designers in Council C are interviewed (See Table 2).




Organisation (Design Intervention Model)	Name (anonym)	Team	Position	Work experience (years)
<b>Council A</b>  Internal/External Designer	CAS01	Service Transformation	Service designer (Head of product)	24
	CAS02	Service Transformation	Service designer (Lead of the project)	13
	CAP01	Service Transformation	Digital Services Delivery Lead	38
	CAP02	Service Transformation	Digital Services Delivery Lead	8
	CAP03	Service Transformation	Digital Services Delivery Lead	15
<b>Council B</b>  Non-designer	CBP01	Transformation and Change department	Head of Transformation and Change department	22
	CBP02	Transformation and Change department	Service Design and Engagement officer	3
	CBP03	Transformation and Change department	Project manager	25
<b>Council C</b>  Embedded Designer	CCS01	Service design team, Corporate Development	Service design Lead	33
	CCS02	Service design team, Corporate Development	Service designer	5

Table 2. Interviewee profile

## Case studies

In this section of the paper, three cases of local councils in England are introduced, representing their different journeys towards embedding design within their organisations and illustrating the changes in Design Intervention Models that the three councils went through respectively over the course of the journey. Furthermore, the contextual factors and purposes of embedding design associated with a choice of Design Intervention Model are described (See Table 3).




Local government	Change in Design Intervention Model	Purpose of embedding Design
<b>Council A</b>		<ul style="list-style-type: none"> <li>• To modernise their existing services for efficiency.</li> <li>• To innovate its operating model in developing and delivering services to meet user needs.</li> <li>• To upskill employees to build a design capability in its organisation.</li> </ul>
	External Designer → Non-designer → Internal/External Designer	
<b>Council B</b>		<ul style="list-style-type: none"> <li>• To redesign services to provide financially sustainable and user-friendly services.</li> <li>• To become a self-sufficient organisation.</li> <li>• To help employees develop entrepreneurial and explorative ideas.</li> </ul>
	External Designer → Non-designer	
<b>Council C</b>		<ul style="list-style-type: none"> <li>• To innovate services fulfilling user needs together with residents.</li> <li>• To redesign commissioning process to ensure the delivery of high quality and cost effective services.</li> </ul>
	External Designer → Embedded Designer	

Table 3. Different journeys towards embedding design and its purpose

### Case 1. Council A

Like any other local government in England, Council A faces a dramatic reduction in the level of funding from Central Government as a result of the ongoing austerity programme. In the face of this huge budget cut by 2020, Council A set up a team, called ‘Council A 2020 transformation team’, which is made up of a blend of dedicated officers from across the organisation alongside some temporary external consultants with specialist skills. The team decided to initiate an organisation-wide programme in 2015 in order to prepare for potential major challenges over the following years. The programme has been planned to make the organisation a more agile and flexible council. The council is attempting to innovate their operating model in regard to how they will work and deliver services in the future and the organisational structure required to support this. With the successful pursuit of the programme, the council aims not only to reduce cost by changing the way they govern the local area and deliver services to the residents, but also to raise revenue by creating new business models by 2020. It is a strategic attempt to change themselves to become a more commercially focused, entrepreneurial and innovative organisation in the future. As part of the programme to transform the organisation by 2020, the council has strategically established a temporary design unit organised with an external design team including service designers brought from the external design agency within the Digital Transformation Department. To improve efficiency, the main aim of the team is to digitise existing services. The team is following the Government Digital Service(GDS) framework which is based on the Agile approach, applying the various service design methods and tools for the better engagement of participants. Council A recognised the advantages of this new way of working, particularly in engaging stakeholders and discovering their needs during the process of reforming services. They then decided to extend the role of the team in order to build design capacity into the organisation and equip their employees with skills for a new way of

working. The council expected that their staff could continue to employ the service design approach by giving their employees chances to apply the approach to the actual projects while working closely with service designers as a team.

## Case 2. Council B

As part of the new governance arrangements to enable the organisation to manage financial challenges and prepare for the future, Council B decided to set up a board dealing with tasks with regards to design and innovation. An interdisciplinary team was deliberately consisted of various people from different departments as of December 2016. The goal of the board was to support innovative thinking and help employees to be able to develop their entrepreneurial and explorative ideas- that may enable the council to become a self-sufficient organisation. A cross-organisational team was, additionally, established in January 2017 to initially undertake two individual projects redesigning services aimed to provide financially sustainable and user friendly services with an external design agency. A Transformation and Change Team at Council B was in charge of managing and leading both the board meeting and the cross-organisational team through three main activities. Firstly, the team tried to introduce and promote a design mindset and a service design approach to other colleagues across the organisation, by conducting user research together or supporting co-designing activities so that they can see the benefits of new way of approaching. Secondly, they held monthly lunchtime learning sessions regularly and innovation events occasionally for people at all levels across organisation in order to convince them of the need of innovative approaches when considering service users as co-designers, as well as to distribute Service Design as a new approach to public service innovation. The members of the Transformation and Change Team were design-led innovation champions. They played a key role to promote this new way of working based on their self-taught knowledge, as well as hands on experiences and the skills developed through the service design projects in collaboration with external design agency. They also adopted and sometimes created design methods and tools in order to adjust them to their own conditions, and set up a systematic and standardised process. Lastly, as mentioned above, the team organised and managed the board meeting that involved multidisciplinary members at all levels including a chief executive officer. The meeting helps the council to support and realise innovative ideas that generated by employees across organisation, by giving them a chance to present innovative ideas, supporting the developing process, and keeping track of new and ongoing innovation and design projects, by running a board meeting regularly.

## Case 3. Council C

In October 2013, Cabinet of Council C consented to a major organisational change programme that aims to redefine the council so that they can continue to meet their residents' needs by achieving a balanced budget, reinforcing the place for local democratic leadership, and establishing a new business model while managing additional budget cuts from central government by 2020. As part of the programme, the establishment of a group was proposed to put the residents in the heart of the process in designing and delivering services. The group was planned to consist of three sub hubs: a procurement hub supporting procurement and commissioning decisions; a data and information hub providing intelligence and data which support procurement and commissioning decisions; a clienting hub supporting client management. In October 2015, after the group had been strategically set up, an in-house service design team was established with three service designers and two business analysts. Unlike the other two councils above, the Council C had decided to set up their own service design team by directly recruiting service designers. The team aimed to bring together insight, procurement and commissioning expertise and design innovative services, fulfilling the residents' needs. The team often leads the service redesign process for a portfolio of commissioning projects that aim to ensure the delivery of high quality and cost effective services that deliver positive outcomes for the residents, as well as the council. Each one of service designer works as an individual unit, by undertaking and managing separate projects respectively. They apply various design methods and tools based on service design



approach such as real life persona, basic user journey map, empathy map, and round table discussion during the workshop. A range of people from different department are invited to the co-design workshops in order to understand current situations, define problems, and come up with possible solutions.

## Research Findings and Discussions

This paper has introduced four types of Design Intervention Model illustrating how design has recently intervened in local governments in England. Three cases of local councils in England has been presented, describing their different journeys towards embedding design within their own organisations, and showing which level they are positioned on the Public Sector Design Ladder.

### Why local governments are trying to embed design

Councils A, B, C in this research are on the STEP 2 (See Figure 3). After a few successful design projects dealing with discrete problems, the three councils set up a dedicated team by taking different types of Design Intervention Model.

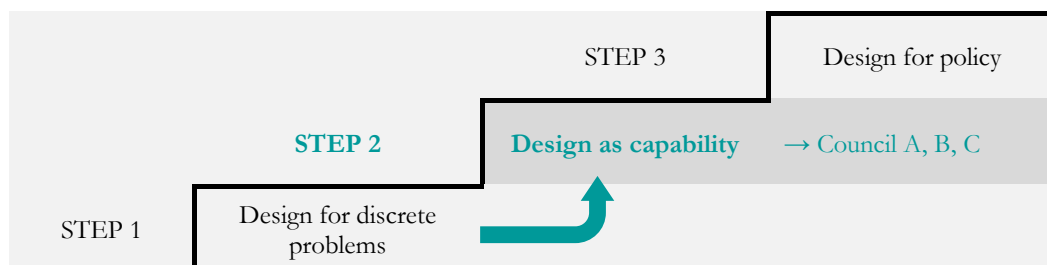


Figure 3. Position of three local councils on the Public Sector Design Ladder

Although the routes that each council has taken in their choices of Design Intervention Models are different, all three councils embarked on the journey towards embedding design within their organisations in order to achieve the goals below.

- 1. In the short term, to improve their services**

The common goal that the three councils aims to achieve in the process of embedding design within their organisations is to improve their existing services. Design approaches to service development have been considered as tools to help local councils to identify user needs and problems with their recent services effectively, by supporting co-designing processes involving various stakeholders.

- 2. To develop their own service design process**

The local councils tend to think that a new way of working based on a human-centred design process is a more sustainable approach to consistently understanding user needs and making decisions in a ‘democratic’ way. This is because it puts users at the centre of service development and delivery process. Therefore, each council wants to devise and develop their own service design process based on their working environment.

- 3. In the long term, to become a self-sufficient organisation**

They want to embed design within their organisations in order to reduce the cost of management and operation by modernising existing services. Furthermore, they want to create new business models enabling councils to increase their revenue in an attempt to prepare for budget cuts from Central Government and to become self-sufficient organisations in the future.

As identified above, the ultimate goal of the local council aiming at embedding design within the organisation is to become self-sufficient. They are trying to develop their own sustainable service design process and equip their employees with its skills in order to help them be able to apply the process into their day-to-day jobs without the help from any external service designers.

## Challenges in embedding design

Shared challenges faced by service designers and public servants that arose during the journeys of applying and embedding design within the councils are identified and discussed as follow:

### 1. Understanding and changing a complex system for a long term effect

Improving services will not be achieved through a fragmented solution such as the improvement of a single touchpoint or the change of service staff. However, it inevitably requires the change and development of the service system based on an understanding of the local council as a complex system.

*"the biggest challenge is that the council is a kind of complex system. changing one thing over here, this change over here, and change something here, and residents become confused and they start to phone the call centre, the cost of the call goes up. So, they start taking away telephone numbers, then people get more frustrated and then they start knocking on the door. You know this is quite a complex system now."*

- Head of Transformation and Change department, CBP01 –

*"...We've got the project based on short term goals. Possibly because people need to deliver something. So we are trying to change it a little bit. We are trying to shift the conversation a bit to think more about the bigger system that has a long term effect on it. If we are going to improve the service in a certain way, I mean more human-centred way maybe, it is going to make savings in a few years. But they (local councils) may be interested in 'what are you going to do for me in the those few months'. They are thinking like that. Maybe they are going to cut down something"*

- Service designer, Project Lead, CAS02 –

### 2. Disseminating a design mindset and mobilising resources for co-creation

The design team itself regardless of the involvement of designers is good in understanding and applying design in their day-to-day jobs. However, it is difficult to propagate a design mindset across the organisation because public servants are normally under the pressure in their daily jobs; and therefore it is hard to bring them together in the same place to transfer knowledge on design and equip them with design skills.

*"But also, people are always saying that they haven't got any time. So it's mindset and time of thing. But the thing is they have their ideas. So they know what is the capacity for this service, or what they can do change for you a bit. But I don't think they are given the time to... so they don't get given like spaces to be"*

- Digital Services Delivery Lead, CAP03 –

*"Especially where in this sort of non-designer redesign method space, I think it's about mindset and how you approach problem or question, different questions what we've asked before as a local government. I think that is really hard thing to teach someone to do or someone to do differently, particularly in local government. There are people who have been working here for long time with same job for 2, 3, 40 years. So how you get them mindset shift I think it is really difficult."*

- Service Design and Engagement officer, CBP02 –

### 3. Maintaining momentum for behavioural and cultural change

Most local government employees who participated in the co-design workshops found the benefits of design as a new approach to public service innovation. However, their enthusiasm and passion for Design Thinking often fades away over

time because of a lack of continuous support from the senior level and a failure to track new or past projects that applied a design approach.

*"But the way of working (designerly way) is quite different from the council culture. The council culture is frustrating race, you know, people come in and work for the council for thirty years and never retire. So it's challenging everything they know and of course change is scary."*

- Digital Services Delivery Lead, CAP02 -

*"The culture is a really tough one. Changing cultural organisation is enormous. I think it is a, we find, steady step by step process. What we have done projects with certain service area, they see the value of our work. They tempt to often come and say that oh we got a new project coming up. We want to use the same methodology, we think this is important. This kind of shows they are changing the way they think about approaching redesigning of services."*

- Service designer, CCS02-

#### **4. Keeping knowledge and transferring knowledge**

The employee turn-over rate in the local council is very high, as cost saving in the council is often achieved by the reduction of a number of people. This is challenging for embedding design within the council because it does not motivate people to keep developing and transferring knowledge across the council.

*"They (public servants) are not motivated by saving council money, they are motivated by making their lives easier and making and delivering a better service. So you have to somehow map on delivering a better experience for everyone"*

- Service designer, Head of Product, CAS01 -

*"The only problem is, basically here is temporarily assigned to this team. So, it's not given that they will stay within the team. They may return to their own team. So if we had someone who was in the team for a few months, but after change, they are still in the council but they move to another place in the council. So, there is a bit of uncertainty about knowledge transfer and how much with they can use them."*

- Service designer, Project Lead, CAS02 -

#### **5. Developing skills and giving confidence to public servants in co-designing**

Non-designers (public servants in this case) who are responsible for design support and building design capability are normally good at and confident in conducting the Discover and Define phases of the service design project. However, they are much less confident in carrying out the Develop and Deliver phases of the service design process.

*"The hard bit is then giving them the confidence that they can solve the problems. Because they can see the problems. It is obvious that they experience things themselves, but they also know all the obstacles of the council."*

- Service designer, Head of Product, CAS01 -

*"I personally much more feel confident with this diamond (Discover and Define phase of the Double Diamond model) than with this one (Develop and Deliver phase of the Double Diamond model). We've done a lot of that (the first Diamond phase) and I feel happy about doing those things. I think in this second diamond space particularly with big problems and big difficult things."*

- Service Design and Engagement officer, CBP02 -

## **Conclusion and future work**

This paper presents why local governments are trying to embed design – Design Thinking or Service Design - and how they are actually applying the design-led approach for service innovation or organisational change through three different cases of councils in England,

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which are taking different Design Intervention Models respectively. This paper did not set out to determine which is the best Design Intervention Model or which is the most efficient journey. Rather, it aimed to explore different routes to embedding design and examine a number of different types of Design Intervention Models at local governments and identify the shared challenges faced by designers and non-designers. However, there are clear contributions to practical knowledge for non-designers such as elected councilors and public servants in the local government, as well as designers who are planning to apply design-led approaches within and for local governments. For example, this research might be able to share overviews and some insights into how design practices that support collaborations can help local councils to change their organisations and innovate their services. However, it does not mean that this paper covers everything about the ways of utilising design-led approaches. The contributions and value of this paper are, therefore, to give a better understanding of the different nature and conditions of design-led service innovation and organisational transformation in the local government context to design practitioners including challenges for embedding design. Furthermore, it helps public servants to understand different types of Design Intervention Model so that they can have a chance to think about which type will be suitable for their conditions and situations.

Future work of this ongoing research will give a better understanding of design-led approaches to collaborative service innovation and organisational transformation to public servants and their organisations to allow them to better use design practices. Moreover, it will identify different roles that designers and non-designers play in applying design-led approaches such as Service Design and Design Thinking in different contexts. This might be able to suggest ways to overcome challenges to embedding design within the local governments for designers so that they can develop essential skills and their own distinct professionalism with regards to collaborative design practices in the public sector.

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# Guiding the welfare state towards a co-creative and explorative mindset: When a crisis is an opportunity

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## Abstract

This paper will describe how Förnyelselabbet, a design driven lab, takes on challenging areas that spans across policy, organizational and sectorial boundaries. The paper will give an account of how Förnyelselabbet has set up its co-creation and engagement process. The process is not specifically devised to deliver solutions at a micro level, but to drive change across the welfare system from policy, over new collaborations to specific service interactions. The lab was initiated as a response to the large number of unaccompanied minors that arrived in Sweden around the fall of 2015, based on political insight and a decision by the Ministry of Health and Social Affairs to explore how design could aid user driven innovation within social health care for children and youths.

**KEYWORDS:** policy lab, design for policy, policy making, design case

## Introduction

Sweden was one of the OECD countries that received the largest number of unaccompanied minors in 2015. The situation for these minors is complex as they meet many different stakeholders throughout their asylum process, but also in the situation they find themselves in with only an appointed guardian present to see to their best interests. The minors easily end up in a no man's land between different branches of government or legislation. Not only are they unaccompanied minors they also become lone minors.

The sheer volume of refugees put the resilience of the Swedish migration system to a severe test, at certain points in time 10 000 people arrived every week. The situation for the unaccompanied minors and similar backdrops were used as a call for not only policy renewal, but also innovative processes for policy making, and sometimes to argue for the use of

system design approaches in policy development. Design as an approach in policy development has received increased attention the last decade (see e.g. Bason, 2014). Policy design has over the years been approached from a policy perspective (see e.g. Howlett, 2014) as well as a design perspective (see e.g. Junginger, 2013). In design and innovation discourse policy labs has been regarded as a form of nexus for combining design and policy making (see e.g. Kimbell, 2015; Bailey & Lloyd, 2016). The lab construct is argued to give better possibilities to do designerly work and policy experimentation.

This paper will contribute with a descriptive account of design within policy making, the process that a design-driven policy lab uses when working across different government organisations and policy areas, within the context of unaccompanied minors.

## Related work

In order to relate the design driven lab to policy and policy development a characterization of some of the central concepts will be provided.

The practice of policy development is usually understood as a multidimensional values-driven process, that is complex, contingent and contextual. Public policies are enacted, evaluated and developed within institutional arrangements, by actors in networks that may be part of civil society, a market system, or the governmental structures or overlaps thereof (Maguire, Ball and Braun 2010; Ball 1993; Singh, Harris & Thomas, 2013; Halligan 1995; Colebatch, 2017). Bobrow (2006) describes two overarching approaches to policy design, an institutionalist approach, and a deliberationist approach. In the institutionalist approach the focus is on prescribing procedures and processes, as well as defining the mechanisms that make these operational. In the deliberationist approach the focus is in on the discourse that forms policy, and those that participate in those discourses. Related to the latter is a school of thought that focus on policy enactment (Braun, Maguire and Ball 2010), where the multiplicity in process, context, interpretations, enactments and accounts are central (Colebatch, 2017). Linder & Peters (1988) additionally make a difference between those that focus policy design work on the manifest arrangement, and ideal configurations, of policy elements (May, 1981; Howlett, 2014), and those that focus on the conceptual underpinnings of policy (Linder & Peters, 1988).

In their recent paper Clarke and Craft (2017) make a comparison between design thinking and policy design, using a set of characteristics of design thinking and policy design. There are other attempts to do this, such as the propositions in Considine (2012), the core strategies in Bobrow (2014), and much earlier attempts related to the work of Christopher Alexander, Donald Schön, Victor Papanek and Horst Rittel.

Apart from a set of books and reports on the meeting between policy and design (e.g. Bason 2014, Puttick et al 2014, RSA 2014, Armstrong et al 2014, Kimbell 2015), there is an increasing set of published design research studies on design in policy work. Kimbell (2016) describes one account of using design in policy situations in central government in UK, showing how design practices intersect with policy making practices. Bailey (2016) both reviews current research and give an account of empirical experiences from within. Kimbell & Bailey (2017) make a conceptual description of consequences and implications, especially concerning prototyping in public policymaking.

Several of the design researchers indirectly notice that there is a long history of policy development research touching on design in policy development. Junginger (2012), however, claims that in policy development research, design has mainly been understood as a problem-solving activity. This claim seems to be focusing on the professional practice “design”, as it was conceived during the design methods era, and not on policy development as designing,



where designers may be diffuse as well as experts (Manzini and Coad, 2015). In all, there seem to be many perspectives present. Kimbell & Bailey (2017), in their focus on prototyping, in part assumes that policy consists of specific elements, and prototypes contribute to selection between options, resembling an institutionalist perspective. Considine (2012), on another note, equates design with a creative process, and highlights that policy-making also should be viewed as a creative process. Tunstall (2007) posits that policy is made manifest through artifacts, in line with policy enactment (Colebatch, 2017; Koyama & Varenne, 2012)

## Contextualizing the policy lab

The policy lab was formed in a nexus of developments among several different actors in Sweden. The multitude of the many voices is difficult to cover, but we will give an account of some of those.

*All designing is already about systems, even if the object-focus of traditional design practices has obscured this. With recent developments in the field such as service design, design for social innovation and design for policy, the need for designers to engage more seriously with the systemic nature of designing is acute. (Kimbell 2017).*

There are design driven innovation and policy labs formed in many places. In a report from 2016, it is claimed that within the EU there are 65 policy labs (Fuller & Lochard, 2016). Notably, MindLab in Denmark is closing down at the time of writing, and others such as Helsinki Design Lab, RED and others have also closed down. The policy lab that is at the centre of this paper, is not included in the report, so it is a volatile ecosystem.

### The Ministry of Health and Social Affairs

#### How to improve the experiences for unaccompanied minors by using co-creation

The need to create better care for the unaccompanied minors was urgent due to the strained situation after 2015, and the need to bring different stakeholders together was especially pressing. The traditional organisation often see their own responsibility, but are not required to, and not always equipped to, look at the transitions between authorities or organisations. To be able to get an understanding of how it is to live in a complex modern societal challenge, you also need to go to the intersection between sectors. Different perspectives are needed to get an understanding of any situation, both from the users themselves, in this case the unaccompanied minors, and from the professionals around them. The Ministry of Health and Social Affairs acknowledged the need for the social welfare sector to become more innovative, and for the employees to be enabled with tools for co-creation with its users, the minors.

### The Swedish Association of Local Authorities and Regions

#### In need of new methods for complex societal challenges

SALAR, The Swedish Association of Local Authorities and Regions, is an organisation where all municipalities and regions in Sweden are members, and works in between the national government, the legislators and the municipalities. SALAR as an organisation aim to enable its members in their capacity to tackle the complex challenges of globalization and digitalization. The public sector of tomorrow will need to be able to orientate in a different landscape, learning to see an opportunity in not having the right answers at the start of a

process but actually in co-creative processes explore and test hypothesis with the people concerned.

At SALAR, an organisation that handle many different areas of common interest for municipalities and regions in Sweden, there had been a growing interest in new ways to deal with explorative methods for development within complex issue domains. SALAR (2015) describes in its position paper that the public sector is in an important shift, a transition to a more co-creative, less of an expert kind of a mentality. Due to a request from a network representing social-service agencies, sharing a challenge around unaccompanied minors across Sweden, and sharing a belief that co-creative and explorative methods would be beneficial. SALAR was interested in how a lab environment could play a role in addressing this issue, as well as how a lab could contribute to capacity building within the public sector. SALAR was given an assignment in August 2016 from the Ministry of Health and Social Affairs to explore how design could aid user driven innovation within social health care for children and youths. SVID was given this assignment from SALAR who saw the benefit of using SVID as an explorer of uncharted areas of design.

### Swedish Industrial Design Foundation (SVID) Putting design in the public sector to the test

SVID has since a couple of years focused their activities in thematic areas such as, for example, Health and Place-based design. Two large networks were formed, one with municipalities and another with government agencies. The networks gathered an interest and knowledge about the usefulness of design as an approach to tackle complex challenges, and to drive radical change. As the networks grew, the situation of unaccompanied minors became an urgent challenge, that SALAR through SVID jointly decided to tackle by forming Förnyelselabbet.

The initial articulation of the outcome goal for the lab was “Improving the everyday of unaccompanied minors with co-creative methods” given by the Ministry of Health and Social Affairs, Förnyelselabbet became an opportunity to test a lab environment at SALAR and for SVID to explore how design can drive change in the public sector. According to Kimbell (2017) the area of design needs to develop its methodology especially in a more systemic approach.

Förnyelselabbet, in reporting back to the ministry and SALAR, articulates two process goals instead of the earlier outcome goal:

- How to explore the experience of the asylum process for unaccompanied minors in Sweden? (relating to the ministry)
- How to create a platform for co-creation with actors with the same group of users? (relating to SALAR)

Förnyelselabbet is now an initiative in the forefront of testing how systems design in societal transformation may play out in Sweden. Introducing cross-sectoral collaboration using design methods the lab aims to enable policy co-creation from the grass-roots and up to the policymakers locally and nationally. Hence delivering more disruptive innovations and policymaking as we have learned to see it.

## Foundations and background of the case

### Förnyelselabbet

#### Systems thinking and design in complex societal challenges

Förnyelselabbet uses an explorative and iterative design process, aiming at creating capacity within the system, enabling the transition towards a social landscape where the public regions, municipalities and agencies collaborate across sectors.

The design process starts from a wide explorative approach together with one user group, in this case from the unaccompanied minors, and the people working with them, in order to agree on a problem space. The problem space is the frame of the continued exploration where the experience for the user, from several perspectives, are analyzed and then ideated upon (Dix and Gongora, 2011). To be able to test the ideas in a small scale these ideas are visualized as prototypes. The prototypes are created specifically to be tested within local contexts.

Crucial for a lab is to have several perspectives present, why a selection of participants, with suitable level of authority and knowledge are gathered at different occasions throughout the process. It is also important to have mandate to pursue a co-creative process, both as facilitators of the lab but also for the practitioners partaking in the process. Building trust and engagement with all participants is vital for the lab to produce relevant material from which policy can be renegotiated. Driving transformation in the public sector with a lab can also benefit from using indicators for governance that require a user driven perspective and co-creation between actors.

Material representations are used to a large extent through the whole process of the lab. Ethnographers often emphasizes the importance of using representations as enablers for collaborations. (Segelström & Holmlid, 2015) Förnyelselabbet uses externalisations (Dix and Gongora, 2011; Segelström 2012) in all the steps of the process in order to develop and concretise the thoughts and thus get a better understanding of each other in a diverse group.

The policy lab aims to change existing policy, both in written and unwritten laws. The unwritten laws are difficult to take on since we often are loyal to culture and relationships, but we also tend to become blind to how they affect our behavior. Participatory methods are used in order to create knowledge about one another in a system where the actors are dependent on each other (Taguchi and Frid, 2006). Therefore, different actors are working on the same challenge together, but from different perspectives and logic. This is a way to mirror one another and possibly uncover internal processes, cultural practices and norms that do not help the user in focus. This also enable organizational learning and serves as the basis for an ideation process focusing on what the users really need and how to better deliver this in collaboration.

The project's steering group consisted of representatives from the Ministry of Health and Social Affairs's special task force, the National Coordinator for the Development of Care for Children and Youth and representatives from SALAR- both key players and important advocates for driving change at the national and local policy level. The lab has also been in dialogue with the national public enquiry commissioned from the government, who delivered their report in March 2018, on how to develop the Swedish asylum process.

## The design case

The case that will be used in this paper as an example of our process that represents an intervention to one of the three key challenges for the eco-system around unaccompanied minors identified during the project; lack of information, functioning networks of adults and self worth/Sense of Coherence, SOC, amongst the unaccompanied minors themselves.

*Meet Sweden*, the intervention that will be described in the paper, was tested in Sollentuna municipality and represents one of a total of five interventions created during the project to explore the needs during the asylum process for unaccompanied minors in Sweden. Other interventions were; Collaborating networks of practitioners with Hässelby, Renewed guardianship with Nacka and Oxelösund, the norm and value lab with Mölndal.

During the exploration a need for the minors to be able to understand and feel safe in their process was evident. A tool to aid the minors, the social secretaries in their meetings with the minors, and at the same time it makes visible a policy problem of legislating walls between authorities was developed. All was manifested in an app called *Meet Sweden*.

*Meet Sweden* is aiming at activating and enabling the minors to navigate and handle the effect of the legislative wall in between authorities and to shortcut communication in the complex system of the asylum process. An unaccompanied minor is estimated to have over 150 meetings with authorities during their first two years in Sweden.

The asylum process is hard to understand for anyone, even for the people working in the system. Thus, risking that the responsibility of understanding the process fully lie on the unaccompanied minors themselves. *Meet Sweden* was developed to make visible and facilitate that situation.

*Meet Sweden* is a much needed tool for the minors, to help take control of their own process and relationships to different stakeholders and authorities. By using the app, the minors are aided in keeping track of the documentation from one meeting to the other. Enabling for the minors but also making it easier for the civil servants to gain knowledge on what has happened in the previous meetings with other authorities. Förnyelselabbet have met minors who have stated that they do not understand what is being said in a meeting but want to show respect, in line with their own culture, and therefore do not ask questions. At the same time the social servants' states that they often meet minors who cannot explain what has happened in relevant parts of their own process. *Meet Sweden* can hopefully fill this void and render value to both parties.

### Describing the process and methods used by Förnyelselabbet

This section will describe the process and methods used for a systemic view of how design can aid a policy change. *Meet Sweden* will be used as an illustrative example.

### Research, strategy and setting up the lab

*Aim:* Formulate the problem space. Locate relevant perspectives and engage relevant actors for exploration of the problem space.

In order to set the problem space, the given topic was explored widely with qualitative methods together with small groups of participants. To keep the relevance for, and the interest from, the participants it was important to understand what perspectives relevant to include in the exploration of the problem space.



Figure 1 One requirement from SALAR regarding the homes provided to the unaccompanied minors were that they should be “homelike”, but it was not specified who decides what “homelike” means. Material techniques were used together with the minors to show what a homelike home is to them. This material has been used in communication with SALAR. (Photo: Fredrik Olausson)

The lab was set up as a collaboration between SALAR’s members, the municipalities, government actors and non-profit organisations. A steering group with representatives for those organisations and the minors was formed. Two reference groups of unaccompanied minors, from private housings close to Stockholm, was also set up.

Apart from involving the minors in creating an understanding of the problem space, government actors and civil society actors was engaged. Actors with knowledge from a municipality perspective of the situation for unaccompanied minors was involved to create an initial understanding of the situation in the beginning of the fall of 2016. A quantitative study of relevant statistics and surveys was made, mainly within the knowledge base of the municipalities and government actors. Organizations from civil society was involved as they meet the minors first hand and thus gain qualitative insights. These organisations are crucial to involve, when finding gaps as they are acting between government actors.

In this phase a lot of time was spent on both finding the right organisations and actor in those organisations to involve, explaining the explorative, co-creative process and the relevance for the specific actors to partake. The understanding of the potential use of a design process for complex challenges is still low within public sector.

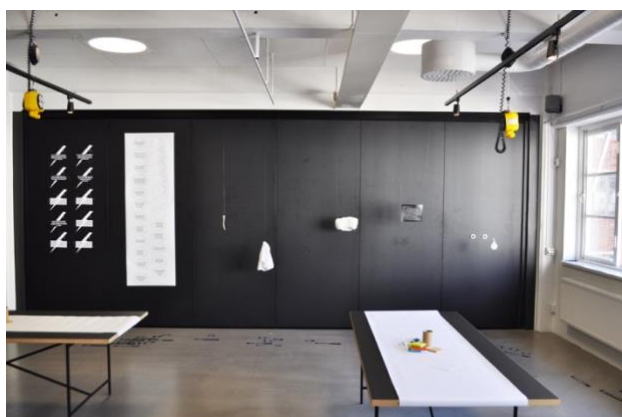


Figure 2 Left: Five materialisations of the explorations is created based on the research to focus on the experiences of users, here the unaccompanied minors. The

materialisations are used for creating an embodied understanding of the youth's experiences in the room when exploring the problem space in a workshop setting. This is an example of a series of pieces at a workshop for the initial reception of unaccompanied youths with UNHCR. (Photo: Fredrik Olausson)

Right: "You can't be under 18. Your breasts are too big." A Public Counsel told his client, a girl who came alone to Sweden in 2014, then 15 years old. (Photo: Fredrik Olausson)

*Decision point 1:* Research, that is relevant in a national and a local context, has been done. A joint understanding of the challenge has been reached, and the problem space has been defined. A steering group has been appointed and is involved in all parts of the process to make progression decisions, and in prioritizing what tests the lab should move forward with and thus what policy regulations that should be tested.

## Agreement of problem space

*Aim:* Create a collective understanding of the problem space.

During the fall of 2016 the problem space was explored widely in workshop settings with around forty actors and twenty youths, in order to frame the problem from the user's perspective. The reference group of youths was met both at their housing and invited to come to SALAR. The methods for exploration were open ended, and often started from a blank paper. Förnyelselabbet used for example journey mapping to create an understanding of the experiences of arriving in Sweden by creating a visual image of this together. Drawing, clay and other material suitable for externalisation in order for the participants to express themselves was also used.



Figure 3 Left: An example of open design where you describe your experience by using materialisation to talk about your experiences through something on the table. (Photo: Fredrik Olausson)

Right: Scenarios created around transportation in public health transport with a cross sectoral group with different perspectives at SALAR. (Photo: Hanna Andersson)

The different experiences were then visualised and packaged by the lab designers and shown to other participants at the next lab event. This is a method used in order to make sure that the situations and the different perspectives of the problems surfaces and the gaps become visible and actionable.

The insights were then reformulated in a workshop setting and divided into three problem spaces: lack of information, lack of a functioning network around the minor and a lack of self-esteem.



Figure 4 Some of the insights visualized and placed on the wall during a workshop.  
(Photo: Stefan Holmlid)

*Decision point 2:* Create a common understanding for the problem space, prioritize what insights and windows of opportunities to take further into ideation. It is important that the commissioner of the challenge is continually informed so that they still feel that the problem frame is relevant to them and their mandate in the system in order to create change.

## Ideas and prototypes

*Aim:* Create ideas for how to improve the situation for the user, evaluate and create prototypes for test. Create an urgency in the particular system of decision makers by showing possible alternative futures. Prioritize what ideas that have the most impact for the user, the actors and what is necessary for the system to change.

With the three agreed problem spaces, three work groups of approximately ten actors from different sectors and decision levels, were set up from the original group of actors, adding specially invited experts. The minors continued to feed in their expertise to all of the groups. A series of three workshops for exploring, ideating and refinement was set up during the spring of 2017. In between these sessions the designers in the lab were meeting with the minors in a parallel workshop series, making possible for the different perspective to react on each other's work.

During the exploration with the minors an insecurity in meetings with the authorities surfaced. The minors claimed that they didn't understand what is said but don't want to ask. A social secretary in a workshop stated: *"Pretty often you sit opposite a minor who do not know what was said at the previous meeting. And sometimes they do not even know what meeting they have been to."* This stops and prolongs the process. It also shows that the process is not designed around the individual but rather the organisations.





Figure 5 In this phase externalisations are used in order to understand and make the ideas concrete. These prototypes are built with paper materials and used in the workshop for supporting the ideas developed. This is an example from a pop-up lab at Malmö Social Innovation, where a cross sectoral team created concepts for joint integration in Malmö. (Photo: Matilda Legeby)

The information from previous meetings is prohibited from sharing directly between the organisations due to local confidentiality. If the information had been possible to retrieve, it is a process that can take up to 6 weeks. The systemic effect, due to confidentiality between organisations was discussed at this stage.

Continuing on into ideation an idea was born in a workshop with actors and minors to create a simple log of your meetings. This idea was brought to a workshop where several perspectives and creatives were represented. A prototype app “Meet Sweden” was co-created. At this event other actors were invited to a vernissage at the end of the day. During the vernissage a manager from a larger Swedish municipality showed an interest in testing the app.

Meet Sweden, had the qualification for a continuing process from the lab in representing three levels of a system, the individual, the provider of a service and the policy maker: For the individual you are able to document the meeting, knowing that the information given to you could be understood by the next person of authority you meet. The actors close to the minor get the information needed in order to proceed with the process without delay. And they will be meeting minors that are better equipped to handle the information given.

At a policy level this idea sheds a light on the inability for different actors to communicate. Instead, the process has relied on the responsibility of the individual to repeat what has been said in previous meetings.



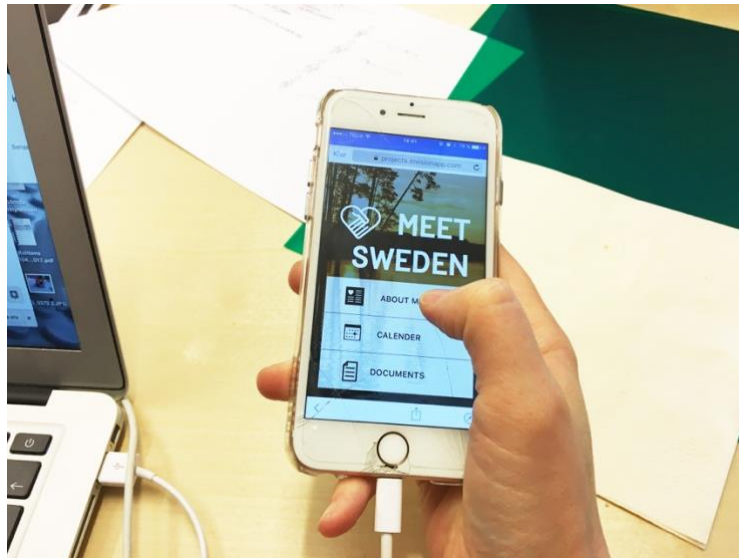


Figure 6 The prototype app was mainly developed in a workshop setting with actors from the public sector, social entrepreneurs, unaccompanied minors supported by creators from Doberman and facilitated by Förnyelselabbet. This prototype is both tested in meetings with the minors, and in meetings with their social secretaries. It has also been shown in different gatherings where the reactions have been strong regarding the need for a change in policy. “How is it possible that the minors have to use their own phone and take the responsibility for the inability to communication in between authorities?” Comment from a public sector representative at a conference when presented to the idea. (Photo: Matilda Legeby)

*Decision point 3:* The first ideation sessions have been done with broad ideation processes, where all the levels of the lab has been invited together with the users. The insights are communicated through material to show alternative futures of how these ideas would change everyday life for the user, the service provider and the policy level. The ideas have been evaluated on what effect that is created over the three levels of the problem space. If this is fulfilled the prototype can be taken into a test phase.

### Tested suggestions of system change

*Aim:* Refine prototypes at the local level and include a small scale test and evaluation of change possibly needed in the system at a national level.

Due to a manager who saw the use of this idea, the prototype app, was put into a test phase with a small group with three social secretaries in September 2017. They also saw themselves as the ones who would introduce this tool for the minors. The app was used in meetings with the minors in their social welfare office.

The first reactions the social secretaries got on the app from the intended user group, unaccompanied minors, was that it was useful – but not for me. Suggestions came forth that it would be better suited for minors that just had arrived in Sweden. When testing the app with minors who had been in Sweden for a shorter period of time the reactions were different. They would gladly start to use it at once. The app is currently planned to take the next step in development where expertise will be involved. A plan for how to engage minors locally will be made, and also how to bring in more people affected by this at an actors level, such as health care.

To drive policy development Förnyelselabbet is reporting needs in different formats. There was a report delivered to the Ministry of Health and Social Affairs on needs for policy changes. Förnyelselabbet will also create materialisations to aid a round table discussion UNHCR is planning with the Ministry of Justice, and attend national conferences such as with the Swedish National Agency for Education.



Figure 7 Left: Participants from different actors are engaging in understanding what needs to change on the systemic and policy level (Photo: Stefan Holmlid)  
Right: Documentation from that workshop (Photo: Stefan Holmlid)

*Decision point 4:* The prototypes have been tested locally and the result evaluated with the user group with the aid of Förnyelselabbet. Tests that show an improvement for the user are used for further development. Issues that is beyond the level of mandate for the lab is highlighted and brought to attention to the authorities.

## Reflections on the work of Förnyelselabbet

### On the process

Förnyelselabbet use an iterative design process, but do it in two parallel processes at different levels of users in the system; with the individuals that are affected by policy, and with actors in the policy-making system. This is especially articulated in the research stage, where Förnyelselabbet has been the actor mediating knowledge from the different research strands. The unaccompanied minors claim the main reason for participation in the lab was to be given an arena of speech with an aim to influence the system.

When an agreement has been made of what the problem space is the next step is to try to improve the situation from the perspective of the individual. An analysis is made; is the policy dependent on law, or an interpretation of a law, or simply unwritten rules that is hindering the practitioners to deliver a service that meet the needs of the user? This is explored by putting people with the knowledge and experience of working with those issues on different levels within the system in the same room, or rather, in the same process. A mirroring from other organisations on how they perceive each other's regulation and their possibility to change can create an understanding within their own system of the actual frame for action. This has been stated as a positive learning experience to better understand your own perspective. Both from the minors themselves and the actors.

What is more direct and evident in the explorations made, is that the minors often have not talked with each other, for example about their experience of their first meeting with the Swedish Migration Agency. The comments of taking part in the exploration have circled around the relief of talking about the situations you have experienced together with others who also have the same experience, in a structured way. It is important that the situation allows for the participants to share their experiences freely, in their own way at their chosen level of depth.

During the course of the project we have seen a decline in interest from some of the partaking actors. One key insight from some of the invited participants that has surfaced, is the loss of connection due a shift in direction of exploration and thus its possible outcomes. This could be a consequence of a too shallow cross sectorial pre-study in the topic, and thus an ability to engage relevant participants with the perspective sought for before the actual start of a workshop series. To keep the relevance, and the interest from the participant it is important with a thorough pre-study, and a deep understanding of the problem space from different perspectives.

### On the tools and instruments

An important lesson learned is the difficulty to organize workshops in a way so that both minors and representatives of the system can express themselves freely and give room to explain their situations around the same table.

There has been extensive use of visualization and material externalizations in the processes. The character of the use of these have varied:

- for individual participants to share their knowledge or express a point of view
- to bring input, inspiration and reflection into a meeting
- as fundamentals or tools in meetings. Some have been there to be manipulated in meetings
- to collect and summarize meetings
- to be tested
- to communicate to relevant actors.

Whatever the reason (Segelström, 2012), this has been a successful approach used for negotiating assumptions and the creation of understanding across hierarchies and sectors.

### On the suggestion of change

The case referred to in the paper, Meet Sweden, delivers change at an individual level, while Förnyelselabbet and its partners, have the means and mandate to create change. The solution makes visible a policy of legislative hinders between the government organisations causing problems both for the minors and the civil servants. It also makes visible an expectancy on the minors to manage their process, and information around a process you do not understand, largely by themselves. This can be taken further with the pre-understanding of the effect for the individual caused by the legislative policy in between authorities.

### On the lab-construct

The position of Förnyelselabbet have been explored alongside the situation for the unaccompanied minors in the project. At the same time as a “neutrality” of a lab, not being an authority is important, the lab also needs relevant partners with a mandate able to make change in the system.

Förnyelselabbet has been able to offer a space where actors are able to meet “on eye level”, as one of the smaller nonprofit organisations expressed. This, alongside with meeting the minors in a creative process, has been the most appreciated qualities stated by the actors of being in the lab process.

The lab has just completed its first funded period, and the requirements identified as essential to start a lab process are:

- A complex cross-sectoral societal issue with a defined user affected by the issue.
- At least one organisation with allocated time and resources for partaking in the project.
- A commissioner of the issue with mandate to make an impact of the result.

Driving transformation in the public sector with a lab could also benefit from developed practices at the governmental level.

As SALAR, The Swedish Association of Local Authorities and Regions (SKL, 2015) describes in its position paper the public sector is in an important shift, a transition to a more co-creative, less of an expert kind of a mentality. For creating cultural landscapes as such, within the public sector, it continuously needs to explore from initiatives like Förnyelselabbet. The exploration that Förnyelselabbet has undergone through its initial mission from the Ministry of Health and Social Affairs, has produced a refined idea of how a lab process could be executed in cross sectoral challenges.

To enable initiatives like Förnyelselabbet supporting collaborative lab processes in the public sector, the recommendation is to:

- use indicators for governance in public sector requiring a user driven perspective and co-creation between actors.
- increase the knowledge of explorative development processes in public sector for the procurement of lab resources and design competence.
- advocate guidelines for cooperation between public, private sector and NGO's to increase the accuracy, usefulness and efficiency in the everyday of the users.

## On the relations to policy development

There are a set of indicators in the way Förnyelselabbet is approaching policy development that adheres to a deliberationist approach. First there is the idea of setting up a process within the context in which policy development will be done, with an ensemble of actors. Then there is the ambition to let many voices be heard on their own terms, and the efforts in finding those and arranging means in which their voices can be heard. The view that the suggested app is an intervention to create change processes and highlight specific policy challenges, is an interesting connection to policy enactment. Combined with the assumption that a network of actors needs to collaborate to make better policy, is also the conception that the network is structured in layers, that bear witness of a deliberationist view.

However, it is not clear whether the object for policy design consists of the preconditions for renewing policy, or material and intangible elements that needs configuring. It is clear, though, that there is an assumption that there should be made choices between design alternatives in the process.

On the other hand, there are other aspects that indicates that Förnyelselabbet adhere to an institutionalist approach. First there is the idea that policy is made manifest at the individual level through material and intangible elements that can be subjected to design. There is also the way in which articulations of the problem space is done, with problem statements in the format “lack of...” implying a rationality based on whatever outcome, at any level, this lack

should not be there anymore. Combined with asking for indicators for co-creation within public sector organisation, is also a request for cooperation guidelines, that have clear connections to an institutionalist view.

There is one account of how a formally written statement has changed since the start of the lab, and until the end of the first period of the lab. The outcome based goal to improve the everyday for unaccompanied minors by using co-creation, changed into two process goals focusing on the how's of exploring experiences of unaccompanied minors and of creating a platform for co-creation. The goals are part of two different discourses, one prospective where the mandate to set up a lab for a pressing issue is sought with a certain set of actors and people involved, and one descriptive where the mandate is sought to get acceptance for what has been done by a set of actors and individuals that may or may not be the same.

Förnyelselabbet seem to be a hybrid of at least two approaches to policy design. In what ways this will be a fruitful approach remains to be seen.

## Conclusions

In this paper we have contributed with a descriptive account of how a particular design-driven policy lab structures and performs its work. In addition we have positioned this particular case in the wider area of design and policy, with reflections zooming in on the mechanisms of the lab, and reflections zooming out on how the lab relates to different schools of thought within policy development.

## Acknowledgments

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# Co-designing public services with vulnerable and disadvantaged populations: Insights from an international collaboration

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## Abstract

In recent years, co-production has become a mainstream activity in many countries. Despite the increasing attention to co-production (and the role of co-design approaches therein), critical challenges exist when working with vulnerable populations. Failure to involve these populations may reinforce existing inequities across societies. An international collaboration has recently been established to foster international exchange and learning relating to co-designing services and service improvements with vulnerable and disadvantaged populations. Here we report on the findings of a two-day international co-design process held in December 2017, that involved 23 participants including health care and service professionals and design practitioners (5), service users (6) and academics (11) to identify challenges and suggest improvements to co-design and co-production approaches when working with vulnerable and disadvantaged populations.

At the symposium each panel of 3 or 4 presenters shared their experiences in particular cases. Working in small groups, participants discussed why the problem exists, then individually and collectively brainstormed solutions and integrated the ideas into a common solution and developed a visual prototype. All content was recorded, and videotapes were transcribed.

We adopted a modified case study approach, and focused on 8 cases that featured (a) service users that are members of a vulnerable and disadvantaged population and (b) service providers working together in non-hierarchical and ongoing ways to co-design improvements to health or social services. Populations included adult and youth mental health services, personality disorders, domestic violence survivors, young offenders and indigenous peoples. Services included health and community services, ambulance services, employment support, police and justice services. The data was synthesized to create case summaries. Cross-case analysis identified common challenges, as well as principles and tactics to address them.



A number of challenges were common across all cases: issues with initial recruitment, securing ongoing participant engagement throughout the co-design process as well as power imbalances. Other challenges in several cases included unpredictability of participant health status, precarious economic and social circumstances, as well as insufficient or unstable funding. There was an overarching sense that core principles should be established and attended to rather than a series of rigid sequential steps. The findings suggest the need for an intersectional approach, as most participants faced a combination of health, social, financial issues. Relationships were central throughout the processes, as was the need to be flexible and responsive to participants needs. There is also a need to empower participants and share power through co-design processes characterized by a 'downward accountability' to participants rather than an 'upward accountability' to funders. This attention to the 'human side' of co-design rather than institutional restrictions was considered essential when working with vulnerable and disadvantaged populations. We present a conceptual framework that relates the identified challenges to principles and tactics to address them and which may assist other service designers when working with vulnerable and disadvantaged populations.

**KEYWORDS:** co-design, vulnerable populations, public services

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# Service design and the co-production of public policies: The case of RedActiva

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## Abstract

The role of a citizen is not to be a beneficiary of a service delivered by a public agency, but a co-producer of the same service. Interaction between the public sector and citizens therefore needs to be carefully designed in order to accomplish a co-production of public policies. Service Design could contribute to a better design of this interaction and co-production between the two parties. A case study of the project *RedActiva* in Chile, focused on promoting and facilitating urban mobilization of the elderly, highlights some of the contributions that Service Design could provide to public policy design from a citizen-centric approach.

**KEYWORDS:** aging, urban mobility, smart city, service design, public policy co-production, user-centred design

## Introduction

In the 1960's, Chile was an underdeveloped nation of South America, fighting the battle against child mortality through vaccination, health assistance, nutritional programs and the provision of other critical public goods. Almost sixty years later, Chile is a middle-income country with the lowest rate of child mortality in South America, very close to the OECD members' average (World Bank Open Data, 2015). Nowadays, one of the biggest public health challenges is child obesity. Currently, Chile has the third highest level of obesity in children under 5 years old in Latin America (FAO and OPS, 2017).

Although undernourishment was a serious public problem, following Rittel and Webber's (1973) definition, it was a "tame" problem: easier to define and with clear implementation solutions. On the other hand, child obesity is a "wicked" problem, ill-defined and with unclear causal relationships and dynamics (Bason, 2017). While child mortality can be addressed by delivering public products such as vaccines and nutritional supplements, child obesity needs a more holistic and complex approach of products and services involving health, education, provision of quality public spaces, promotion of physical activity and

nutrient regulation, among others. Moreover, to reduce child obesity, policies require important co-responsibility from parents and the food industry, which is difficult to achieve.

The current global challenge for public policy is the need to address more wicked than tame problems. This challenge comes with a growing level of complexity. According to Head and Alford (2015) “*for the decision maker, complexity and diversity create higher levels of uncertainty or ambiguity.*” Traditional public policy approaches based on a problem-solution design and implementation do not fit adequately with uncertainty and complexity, adding additional complexity to the process. It is precisely at this point where design enters the picture, or as Christiansen and Bunt (2014) state, “*the complexity is where the concept of design becomes relevant.*”

According to Bason (2017), design can make a significant contribution to policy makers by contributing to the understanding of the underlying causes of public problems, generating alternative scenarios and implementing new practices. Additionally, design can aid in the anticipation of user experience, ideation and rapid prototyping of new proposals with a systematic approach (Mulgan, 2014).

The role of design in the public policy process becomes particularly important when citizen participation is required. As Alford (2009) points out, the role of the citizen is not to be a beneficiary of a service delivered by a public agency, but a *co-producer* of the service, actively contributing to create private and/or public value. Without citizen co-production, it is not possible to achieve the goals of public organizations or to successfully deliver their services. In the case of child obesity, for example, it is clear that public policy success depends strongly on the co-production of parents, family and children, in order to promote and achieve healthy food consumption practices as well as adequate physical activity. Consequentially, interaction between public policy and citizens needs to be carefully designed in order to attain a successful co-production of public services by organizations and citizens.

Service Design can contribute to a better design of the interaction between citizens and public services. According to Sangiorgi (2009), the origin of the Service Design domain is the rise of the *Interaction Paradigm* and its consequent focus on the interaction between the user and supply system. This paradigm is still evolving, from an interface between a producer and a user, to an interface among users allowing relational qualities and collaborative opportunities (Morelli and Götzén, 2016). In this sense, Service Design can contribute to the public policy domain with the design of “*the tangible elements that enable the desired experiences to occur in a coherent way,*” (Sangiorgi, 2009), or, rephrasing Alford’s concept of co-production, by designing the elements or conditions that enable the co-production of public services by their users.

The research question of this paper is exploring how Service Design can contribute to a better design of the interaction between public policy and citizens, and what kind of methods and processes could narrow the gap that currently hinders the co-production of users in many areas of public service delivery. A case study of the project *RedActiva* in Chile, focused on promoting and facilitating urban mobilization of the elderly, highlights some of the contributions of a Service Design to public policy redesign from a citizen-centric approach.

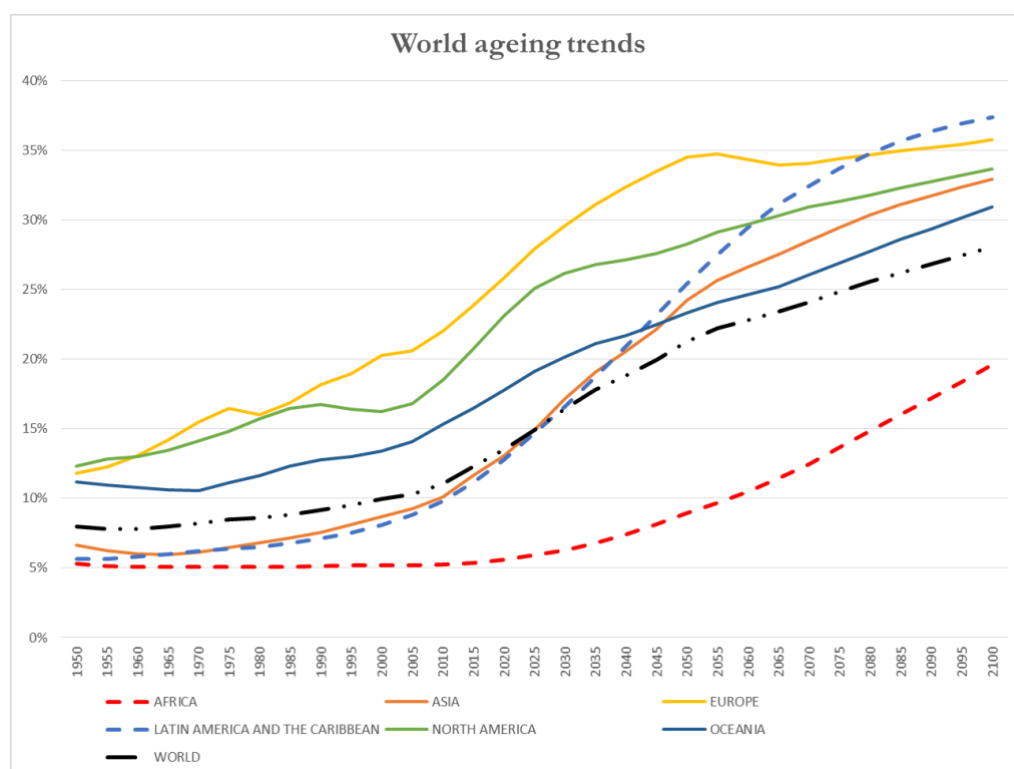
This paper is structured into three sections: first, it analyses demographic changes in Chile and the challenges brought to public policy, highlighting urban mobility of the elderly. Secondly, the paper develops a case study of the *RedActiva* project. Based on this case study, the paper explores how a Service Design approach in the development of the project helped bridge the gap between the Chilean public policy and citizens; facilitating the co-production of services and policies. Finally, the last section reflects on the lessons learned from the case study and the contribution of Service Design to public service design and implementation.

## The new challenges of aging populations in Chile

Populations are ageing all over the world. According to the United Nations (2017), there are currently 1 billion people aged 60 years and older worldwide, with a growth expectation of 2.1 billion in 2050 and 3.1 billion at the end of the 21st century.

Although ageing population is a worldwide phenomenon, some regions will face changes faster than others, and in shorter periods. While Europe has and will continue to face a slow and constant increase of the elderly over a period of 150 years, from 12% in 1950 to 36% in 2100, other regions such as Latin America and the Caribbean will face more drastic changes: in just 75 years, the elderly population will increase from 11% in 1950 to 37% in 2100 (see Graph 1).

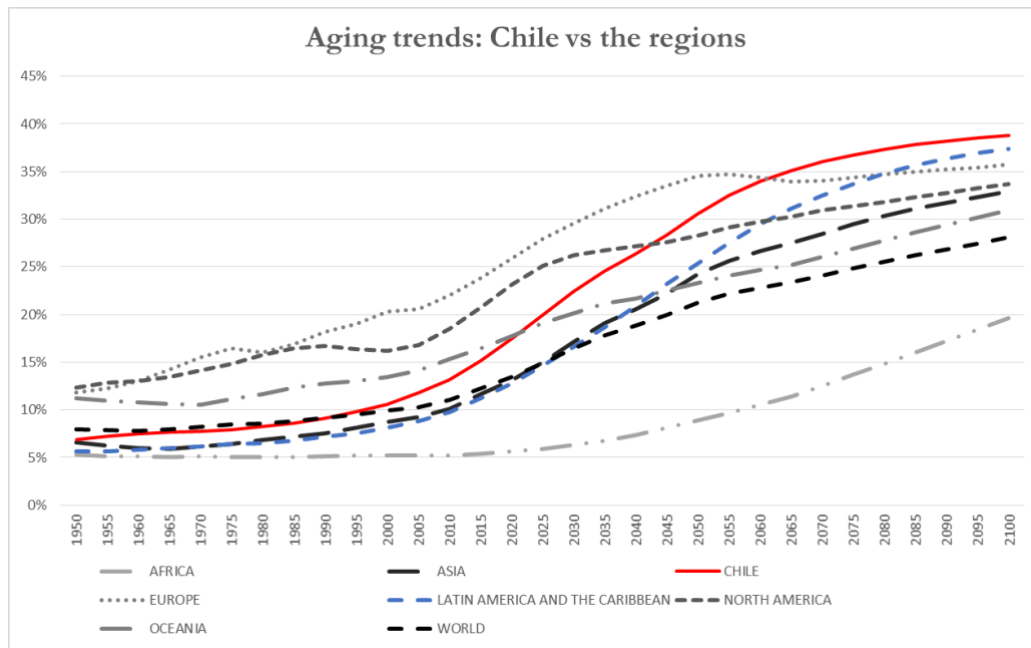
Graph 1



Source: Elaborated by the authors based on facts of United Nations (2017).

Latin America, and particularly Chile, has been facing a dramatic demographic change since the beginning of the 21<sup>st</sup> century. The Chilean population aged 60 years and older has increased from 11% in 2000 to 15% in 2015, and is expected to increase to 39% in 2100 (United Nations, 2017). According to these estimates, Chile will have a greater proportion of elderly citizens than the average of all world regions at the end of this century (see Graph 2).

Graph 2



Source: Elaborated by the authors based on facts of the United Nations (2017).

This demographic change of the Chilean population means more people living longer and with better health. As the Design Council (2012) points out, older, able-bodied adults in good health want to remain independent and live their lives the way they want. They not only need health care or assistance programs, but they also continue to look for opportunities and means to develop personal projects and interests.

Despite the magnitude of this demographic trend, Chilean public policies aimed at the elderly have remained basically unchanged over the past fifty years. These policies are mostly based on a traditional vision of the elderly as people who are retired, experiencing physical and cognitive impairment, and in need of care and protection (Centro UC Políticas Públicas, 2017). Public programs for the elderly offer mostly healthcare and nutritional supplements, residential assistance, entertainment workshops, tourism and physical activities. However, these programs do not recognize that the vast majority of today's elderly have the health, vitality and autonomy necessary to continue being active contributions to society.

According to LIP (2017), a critical issue for active older adults is the growing discomfort and difficulties they experience when travelling around the city, diminishing the possibilities they have to live the autonomous and independent life they want to live. Hence, urban mobility is a critical threat for the autonomy of older adults; however, this problem has not been adequately addressed by Chilean public policy (LIP, 2017).

### Urban mobility and ageing

Mobility can be understood as the “*movement or the potential to move*” (Burnett and Lucas, 2010). In this paper, the concept of urban mobility refers to travel experiences outside of the home and throughout the city.

According to Metz (2000), the quality of life of older adults is closely linked to mobility. As Kenyon et al (2002) points out, restricted mobility causes a lack of access to opportunities, social networks, goods and services, therefore generating social exclusion. In the case of the elderly, mobility enables them “*to achieve access to people and places necessary for life maintenance, life satisfaction, and emotional well-being*” (Spinney et al, 2009).

For older people, “*public transport and walking are more important for their independence, since their driving ability is decreasing*” (Su and Bell, 2009). Walkability of a city therefore becomes critical to the elderly in order to promote physical activity and social interaction with others (Zeitler et al, 2012).

The urban mobility of the elderly is “*an indicator of autonomy and maintenance of personal identity, given that it makes possible the maintenance of other significant activities*” (Gajardo, 2012). In this sense, mobility is a condition to enable older adults’ participation in society (Zeitler et al, 2012).

Mobility is part of the WHO agenda to build Age-Friendly Cities (AFC): places where “*policies, services, settings and structures support and enable people to age well*” (WHO, 2015). The agenda of AFC includes the improvement of green spaces and outdoor seating, well-maintained pavements, availability of public toilets, secure pedestrian crossings, accessible, reliable and frequent public transport, among others, all of which are key aspects for the elderly’ mobility. However, as Buffel and Phillipson (2016) point out, “*AFC policies have often not moved ‘very far beyond statements of values and aspirations,’*” mainly because of the large budgets they require.

## **RedActiva, a case of how Service Design can transform public policy paradigms**

*RedActiva* (Active Network) is a Chilean public-private partnership initiative intended to promote the independence of older adults by encouraging their mobility and reducing the barriers encountered when traveling throughout the city. The project was developed by the Laboratorio de Innovación Pública (LIP)<sup>1</sup> of the Universidad Católica de Chile, with the support of the Asociación de AFP de Chile<sup>2</sup>.

*RedActiva* is comprised of a system of urban devices designed to facilitate and promote the mobility of older adults. The basic platform of *RedActiva* is a low-cost technological wearable device that allows users access to functionalities of components installed in the city. The device, a silicone bracelet named *BandaActiva* (Active Band), was designed for people 70 years of age and older, and has the ability to store and transmit data using RFID (Radio Frequency Identification) technology and incorporating a MIFARE Classic 1k (or compatible) chip inside (Picture 1). The cost of the device is estimated at 2 dollars per unit, constituting a very low-cost solution compared to other initiatives aimed at promoting mobilization of the elderly.

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<sup>1</sup> The Public Innovation Lab – [www.lipuc.cl](http://www.lipuc.cl)

<sup>2</sup> The Retirement Fund Administrators’ Association - [www.aafp.cl](http://www.aafp.cl)

Picture 1



Justine Graham (April, 2018). The *BandaActiva*, a silicone band with an electronic chip inside, is the key to access all of *RedActiva*'s components.

Several tests of possible platforms for the technological device were performed in order to determine which were the most appropriate for participants. Initial ideas included the use of a card, rings and necklaces. *BandaActiva*, was preferred by the elderly due to the ease of use, and because of its resemblance to accessories already used, such as watches and bracelets. The testing phase also helped discard the use of GPS or other complex technologies, due to their elevated cost and the need to be charged, adding extra complexity for users.

During March of 2018, a *RedActiva* pilot program was launched in downtown Puente Alto, a low-income county in Southern Santiago. Five thousand bands were distributed among the elderly, giving them access to different functionalities such as longer crossing periods on traffic lights, free access to restrooms and preferential stops for public transport. The initiative involved replacing the traffic light crossing button with a new model that includes a sensor that is activated using the band to provide an extra ten seconds during the green cycle (Picture 2). The pilot also included the component *RutaActiva* (Active Route) where the elderly use their bands to register their walking through sensors installed along the way, in order to collect points that will translate into benefits for them and their "elderly club."



Picture 2



Justine Graham (April, 2018). Woman using her BandaActiva to activate extra crossing time in a traffic light in downtown Puente Alto.

The design of *RedActiva* includes potential future functionalities such as serving as a payment method for public transport, providing preferential access to public and private services, and signaling the presence of the elderly in buses and the subway to make preferential seats available to them, etc. (Diagram 1). *RedActiva* makes the technology and the *BandaActiva* available for public and private services that wish to add new functionalities aimed at facilitating mobility of the elderly throughout the city. In this sense, *RedActiva* and its components are expected to grow as new partners enter the project.

Diagram 1

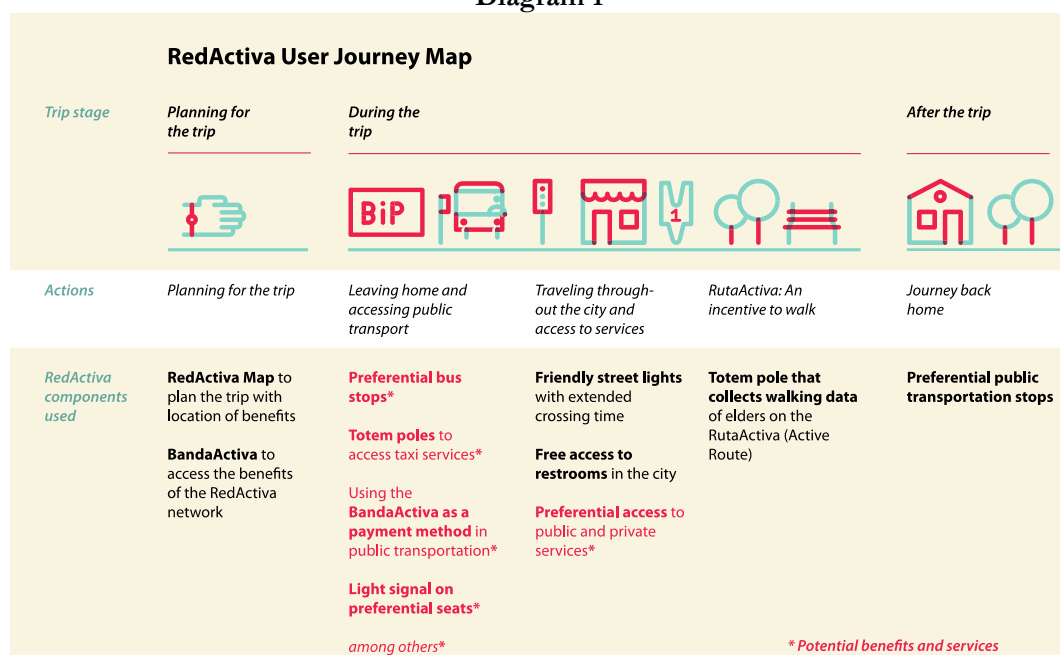




Diagram 1: User journey map highlighting RedActiva's components

## The user journey map as a tool to evidence gaps in public service design

Older adults are permanently encouraged to participate in services designed for them. Due to the rapid growth of the elderly in Chile, public services are providing a growing number of activities for this age group such as handicraft workshops, exercise classes and computer training, among others. However, while the activities and services designed by the public sector have a strong focus on the activity itself, they do not take into account the context where these activities take place. With this in mind, LIP decided to find out the needs of the elderly, beyond just the activities offered by Municipalities, as a way to connect the offer to their everyday lives.

User journey maps provide a graphic overview of the process involved before, during and after the service provision, in order to deliver more meaningful and pertinent solutions. By applying this tool to the services provided by Chilean Municipalities, an important gap in service began to arise. Research confirmed the importance of doing activities outside the home, such as being able to run errands, shop and meet others. These activities made them feel vital, happy, active and connected to other people; however, most people had experience difficulties and obstacles during their trips around the city, discouraging them to perform these beneficial activities (Diagram 2). Mobilization could therefore be considered an important enabler for the elderly to perform activities outside the home and live more fulfilling lives.

Diagram 2

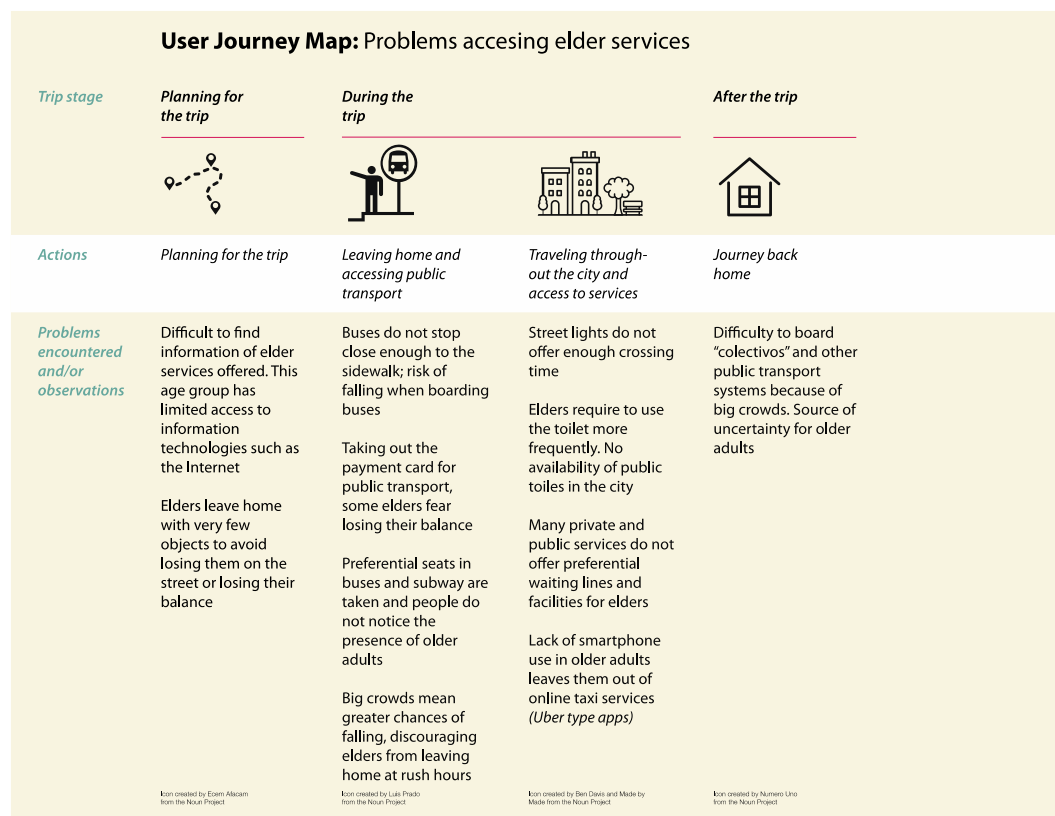


Diagram 2: User journey map of the travel experience of the elderly in the city and the problems they encounter in the process. The observations exposed here are the result of an ethnographic study developed in Santiago in 2016.

In order to build a user journey map, research was done during the initial stage of the project through a 2016 ethnographic study in Santiago. The main purpose of the study was to learn how the elderly travel around the city and the problems they face in the process. Another goal was to identify how their sense of independence, autonomy and personal identity were affected by the ability to leave their homes.

The research consisted of observing the trips of participating the elderly, from a place of origin (usually their home) to their destination, identifying both their motivations to leave their home and the strategies they used to perform different tasks before, during and after the trip. The study involved 16 adults over 70 years old, residents of 8 different counties in Santiago and from diverse socioeconomic backgrounds. Researchers participated in the travel experience by following participants throughout their trip, observing the way they carried out the different tasks. When the trip was completed, the researcher interviewed the participant in order to gain greater insight into their perceptions of the travel experience and a final reflection of what this means in the wider context of their current stage of life.

Research findings from this phase showed that the elderly's trips outside the home are usually part of a routine, and to places they know; it is difficult for them to plan and discover new routes. They avoid peak hours, crowded streets and public transport. Their main fear when leaving the home is being an assault victim and losing their balance which could then result in a fall. Accidents such as falling can be disastrous for the elderly, since it could result in prolonged bed rest, which can accelerate physical and psychological deterioration.

The scarcity of public toilets in the city was another problem identified by study participants. As part of the physical aging process, more frequent visits to the restroom are required, so the lack of these facilities could be an important discouragement for leaving the home, or imply a reduction in the distance they are willing to travel.

On a different note, many older adults recognize that, over the years, they begin to walk at a slower pace and are less able to react quickly on the street. This creates new problems, such as having difficulty crossing the street during the green light or to deal with uneven sidewalk surfaces.

The public transport system was another source of problems for the elderly when moving around the city. In the case of buses, the distance between the bus and the sidewalk at bus stops causes them great difficulty when getting on and off the bus. Most reported asking for help with boarding the bus, due to the risk of falling in the process. Once on the bus, there is a lack of support bars and adequate space, making them perceive public transport as risky and uncomfortable. Their appreciation of the subway wasn't any better; they have problems with the long stairways and they report lack of respect for preferential seating by younger people who ignore the preferential seating signs. Finally, they feel discriminated by taxi drivers who, according to their report, do not necessarily stop on their demand and prefer other types of passengers with less mobility restraints.

The user journey map allowed the research team to view mobilization as a necessary step towards an end, in this case, accessing services designed for elders. By connecting the journey to a service provider, the public sector and the Municipality of Puente Alto realized that there is a need to provide assistance with arriving to the activities offered. In this sense, the user journey map helps administrators to visualize the service gaps that make it more difficult or disincentive participation in activities designed for the elderly. At the same time, it provides a framework to orient the design of a comprehensive experience for users, in this case including their journey throughout the city.

## Co-creation as a tool for effective citizen participation

The design and delivery of public services rarely involves users in the creation process. Institutions design services to address the problems of users identified by officers and through statistical data. Even so, this process generally does not involve the people affected by the problem (OECD, 2011). Increasingly, the public sector is promoting “citizen participation” in the development of certain programs and services; however, there is little guidance on how citizens should be involved and in most cases citizen participation is reduced to public consultation on a set of fixed alternatives previously defined by policy makers (LIP, 2017).

The design process of *RedActiva* requires the collaboration of different stakeholders and also involved the active participation of users not only in an early research stage, but also throughout the entire design process. Mobilization needs differ from one territory to another, so in order to implement a pertinent solution to Puente Alto’s mobility structure, several workshops and focus groups were held to understand specific needs and ideas for the issues *RedActiva* should tackle during the pilot implementation of the system.

As a result of these conversations, local characteristics of mobilization such as the extended use of “colectivos” (a fixed route taxi service) in the county, were incorporated in the design. The elderly reported having trouble going back home from the city center in the afternoon since “colectivos” were usually full, making wait times very long. To avoid the uncertainty of this situation, many of them decided to go home earlier than they would have wished. After multiple conversations with the elderly and the “colectivo” association, a preferential stop for “colectivos” was added to the components of the *RedActiva* network in Puente Alto.

A co-creative approach was also present in the conversations held between the Municipality and the private sector. As noted above with the case of “colectivos,” business owners in Puente Alto participated in workshops with municipal workers in order to contribute to users’ mobility requests. Small businesses offered their restrooms for free to whomever carries their *BandaActiva*. They did not receive any direct or monetary benefit in return for this service; however, they did recognize that satisfying the needs of the elderly could position them well among this growing group of potential customers. The selection of the businesses that were contacted was made from previous conversations with the elderly about the places they frequent in downtown Puente Alto.

Through repeated prototyping and testing with future users, the *BandaActiva* was developed. Issues such as the name of the band were also modified through conversation and testing sessions held with the elderly. An initial proposal of the band was called “active bracelet,” thinking it would give a clear definition of the way it was supposed to be used. During conversations with elder men, they reacted firmly against this name, declaring they would never use a bracelet; bracelets were for women, according to them. The apparent subtle difference between ‘bracelet’ and ‘band’ was something the design team would have probably missed if users were not actively participating in the design process, and could have had an important impact on the reception of the *BandaActiva*.

Citizen participation is widely valued and required among public services in Chile. However, no clear method to allow the participation of citizens has been established. Public services frequently complain about the lack of tools to carry out citizen participation processes in a productive way. Service Design can provide a methodological approach and practical tools to carry out a successful participation process where users are not merely consulted about fixed solutions but can actually play an active role in the definition of the service or policy.

## Piloting as an opportunity for continuous redesign

Piloting has been an essential tool of research and management in order to pre-test a research instrument (Van Teijlingen and Hundley, 2001), finding and testing new solutions

to a particular problem (Kohl and Cooley, 2003) and/or to reduce risk and uncertainty during the implementation of a larger project or program (Turner, 2005).

Pilot studies, programmes or projects are an answer for dealing with the inevitable uncertainty that exists in any innovation or redesign. Testing a tool, conceptual idea or framework is an adequate process to reduce failures and negative impacts in the implementation phase. A traditional pilot allows researchers to test a solution, evaluate the results and then implement and/or redesign it.

The design process involves several repetitions of basic or initial pilot solutions, offering even greater opportunities for user involvement than traditional pilot implementation currently offers. Beta solutions provide a context where certain aspects of the project could be redesigned during the pilot phase. As in the software industry, the Beta solution allows an early interaction with users where they are not only testers, but also active contributors in the improvement of the proposed solution (Neff and Stark, 2003).

In the case of *RedActiva*, the pilot project has been an opportunity to involve users in the design process. After the first month of implementation in Puente Alto, the indicators and users' interviews showed that some components were not working as expected. In a traditional pilot study, it would be necessary to end the pilot phase before solving the problems, but in this case, redesign is a permanent part of the process allowing researchers to fix problems as soon as they are detected.

The *RedActiva* pilot program has opened doors for opportunities to involve public organizations and other partners who traditionally do not work together, to collaborate from the very beginning of the project. In a traditional pilot, the role of the public organizations would be to authorize, monitor and/or analyze the results of a small-scale implementation. In this case, the Municipality and traffic authority (UOCT) are active participants of the pilot, contributing in the solving of problems that arise in the implementation. Pilots not only serve the purpose of trying out solutions with users, but also to test forms of collaboration amongst institutions and other stakeholders who are in charge of delivering the service.

## Lessons learned from the case study

The *RedActiva* case is an example of how Service Design can contribute to identifying the gaps that make the co-production of public services by users more difficult. In the past, the Chilean public policy on ageing has been focused on offering a diverse array of initiatives to promote the autonomy and active life of the elderly, but most of these activities occur in places located several blocks or kilometres from their homes. Until now, Chilean public policy has not realized how important urban mobilisation is for the elderly's autonomy and participation. Service Design tools, and in particular the user journey map, demonstrated the existing gap in this framework, showing how mobilisation difficulties affect the elderly's participation. Without addressing mobilisation, public policies will not be able to fully engage older adults in the wide range of activities designed for them. For these reasons, a Service Design approach is a useful tool for policy makers to develop a broader understanding of the interaction of a given service with its users, one that does not start at the first contact point but does extend to the way they get to and from the activity.

The Service Design approach may also contribute in engaging and coordinating different partners in addressing "wicked" problems. In the case of *RedActiva*, the urban mobilisation of the elderly could not have been addressed independently by each public organization. While the traffic authority could have dealt with traffic light crossing times, the transport authority with the cost of public transport, and the Municipality with the lack of toilets, none of these solutions would have had the same impact by themselves, as they do in a

coordinated network. A focus on the needs of users can help organizations and partners work together towards a common goal, allowing them to reach objectives that lie outside their usual area of competence. This can be extremely valuable for governmental policies that are usually designed and implemented in silos, with little communication between organizations. A user-centred approach, with tools like the user journey map, co-creation and piloting, can help develop fruitful conversations between public workers and organizations.

The *RedActiva* case also helps to illustrate the importance of piloting solutions at a small scale and cost. In the case of *RedActiva*, the simplicity of the idea and the low implementation cost were two important factors in engaging public partners. The proposed framework was capable of integrating the objectives and concerns of different public organizations, allowing each one to achieve their institutional goals as a member of a broader contribution. The pilot also contributed toward catching the attention of other important partners, like the Ministry of Transport and the National Service for the Elderly, who have recently expressed their interest to be part of the future development of *RedActiva*, as well as several other counties throughout the country that wish to implement the network in their territories.

Finally, an important challenge that arises from a new integrated approach to the problem of mobility in this case is the need of a new governance model. *RedActiva* requires a coordination entity that can articulate the roles and project contributions of each organization, as well as the interaction with users and the continuous improvement and redesign of the network. It is not possible for any of the public organizations participating in the initiative to assume the global coordination of *RedActiva*, because it exceeds their institutional responsibility and expertise. Instead, a Service Design approach brings together a broad spectrum of partners and implies an active involvement of users in the design process. However, it is yet to be seen what type of governance models will need to be put in place to assume the administration of the solutions developed under this work scheme, in order to secure the sustainability and scaling-up of initiatives like *RedActiva*.

*RedActiva* is an example of how a Service Design approach can facilitate the interaction between public policy and citizens. The five Service Design principles proposed by Stickdorn (2010)—user-centered co-creative, sequencing, evidencing and holistic—could transform the way public services are conceived and delivered, providing practical tools for the design process. As a result, public services can engage with their users on a deeper level, bridging the gap necessary for a successful co-production.

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## Civic imagination office as a platform to design a collaborative city

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### Abstract

Bologna is an Italian city with 389,009 inhabitants and a density of 2419,87 (people per km<sup>2</sup>). The city has a long tradition for cooperative movements, and in the field of public debate and civic participation it has developed a long series of initiatives and shared actions. During the last 15 years Bologna has tried to innovate policies co-designing urban development and taking care of urban commons together with citizens. The incremental nature of the research and the implementation of new practices aimed at improving local democracy and policies has led to the creation of the Civic Imagination Office, a space completely dedicated to citizens participation and focused on the scale up of previous experimentations towards a more integrated system of co-design of urban actions.

**KEYWORDS:** citizen engagement, policy innovation, urban policy, co-design.

### Context

The distance between top-down and community-driven processes is currently a common element in many cities: people are ever more sceptical about politics and policies and harbour a strong sense of mistrust in governmental bodies (Edelman Trust Barometer, 2018). Nevertheless, through the widespread application and acceptance of new socio-economical models, like collaborative economy or other similar practices that could also be called “mutualistic movements”, people are contributing at building services and products experimenting a peer to peer approach and demonstrating that even if they no longer trust governmental institutions are nonetheless available to take part in governance.

### The City of Bologna and the Civic imagination office: an historical perspective



Working in the context briefly described above, the Administration of the City of Bologna – starting from 2004 and until 2009 – has begun to recognize citizens participation as a tool to improve the contents of structural plans and city planning, activating many initiatives both at district and city level (Ginocchini, 2009). Although a relevant experience, the approach that characterized these citizen engagement initiatives during the 2000s, became less effective and sustainable after the European economic crisis, due to increased economic uncertainties and lack of resources, distrust in politics but also changes in citizens' priorities, needs and attitudes. To respond to this shift, the city – starting from 2010 – decided to change approach and focus more on citizens engagement for the definition and implementation of policy actions and other interventions with short and medium terms investments, concentrating on proximity of scale, community relationships, daily uses of public spaces, services and urban commons. Pursuing these goals, the Municipality has therefore implemented both top-down and bottom up tools and initiatives to support citizens' initiatives, while also increasing their capability to have a say in the future of their own city: in 2010, through the project "Incrediboll" the city started experimenting the re-use of public buildings by setting up a competitive program to support start-ups in the creative and cultural industries with grants in the form of free space; in 2014, Bologna's inhabitants were involved in the redesign of the civic network "Iperbole", also creating a space for digital participation called "Comunità" (Bartoletti & Faccioli, 2016). In the same year, after citizens' explicit claims for taking care of their own city by improving benches and public spaces at large, Bologna was the first city in Italy to adopt the "Regulation on public collaboration between citizens and the City for the care and regeneration of urban commons" (Iaione & Foster, 2016). This has allowed citizens to stipulate pacts with the Municipality to revitalize urban commons in meaningful ways, including squares, abandoned buildings and green areas. Nowadays, Bologna is trying to develop new collaborative experiences into a more organic and permanent co-production system between citizens and administration also thanks to the action of the Civic imagination office.

## Civic imagination office and District Laboratories

The Office was born inside the Urban Innovation Foundation (previously called Urban Centre Bologna) and in the framework of the "Urban Innovation Plan". The last describes Bologna's vision towards 2020 and underlines the importance of achieving this through a collaborative approach (i.e. Civic imagination) that stresses:

- the importance of a closer and more informed relation between citizens and institutions;
- the use of different types of participatory instruments;
- proximity logic as a transversal guideline;
- the implementation of transparent and well-defined outcomes.

The Office is composed by a multidisciplinary staff, including 8 young project managers with different backgrounds in urbanism, architecture, economy, political science, art and communication, and deals with technical aspects of urban development but also community engagement and organizational issues.

The most important tool through which the Civic imagination office is trying to build a new approach towards urban policies is called "District Laboratories", an initiative organised and managed together with the Governance Unit, the city Districts, and the University of Bologna since 2017. These Laboratories are hubs of collaboration and can be seen as spaces of relation and interaction between city staff and more or less organised groups of citizens. The intent of the initiative is to activate and manage structured collaborative processes useful to map, listen, consult, co-design, report and measure what is happening in the neighbourhoods of Bologna. To achieve these, District Laboratories use participatory

methods, open data and different types of digital tools including social media and the municipal ICT platform.

## Inside the Labs: the process

Every year Labs have a number of tools at disposal to develop citizen's ideas, including the previously mentioned Collaboration pacts, but also more traditional consultation tools on social, educational or digital policies and activities to co-design public buildings. Further, the new edition of the "Incredibol!" public bid has provided labs with a tool to help citizens develop their creative ideas, while the city also sets aside 1 million euros each year to fund citizen proposals for the transformation of public spaces, using in particular the tool of the participatory budgeting. This is however different from the traditional type, as labs are in charge of developing specific proposals in each district, thus strengthening the tool with a closer understanding of local needs.

Labs are organised in different phases that are repeated every year and coordinated by the Civic imagination office (Ces.Co.Com, 2017).

As first step, the Office plans strategic guidelines and selects the areas in which Labs should be activated, in collaboration with Municipality's sectors and Districts' representatives and officials. In the following phase, the Office meets the stakeholders that collaborate to a first analysis of the selected neighbourhoods, through which priorities, problems, resources, and new subjects are identified: with them a common framework and vision are shared for the development of the district public spaces. Finally, the Civic Imagination Office opens up the process to all citizens, working directly on the field, implementing community engagement actions to inform and activate as many people as possible, and using different tools, including digital platforms and social media, formal and informal meetings, performances, walks, bike rides, to suit different types of communities. The "imagination phase" then follows, in which a series of public workshops are lead through Open Space Technology methodology (Owen, 2008) to let everybody make proposals for public spaces improvements, and consequently the "co-design phase" is useful to organise the closer collaboration between the proposal groups and the technicians of the Administration: proper public spaces projects are finally defined with the support of facilitators and municipal officials; they all sit together to share competences and knowledge, thus collaborating at the same goal. When projects are set up, all residents, including those who are not legally recognized as Italian citizens, have the possibility to vote for one winning project in each district.

Beyond this specific process, the labs also help citizens apply to the "Incredibol!" bid with their ideas. This process, building on the relations that are established, helps the Civic Imagination office get closely in touch with the neighbourhood life and dynamics, people, conflicts, leaders and potential developments.

## Conclusions

The first year of work of the Civic imagination office was devoted to an intense participatory activity: 2500 citizens engaged with 14.584 people voting for Participatory budgeting projects. Between the different outcomes produced by the Lab, 11 are projects to redesign collaboratively public buildings. Furthermore, 6 projects looking at new squares, gardens and public spaces were also voted and will be funded before the end of 2019; 12 priorities for the future of Bologna's Districts emerged and are going to be used by the administration as guidelines for future investments and policies.

However, besides these positive results, the process developed needs to be implemented further to achieve measurable improvements of the relationship between city staff and citizens and, in general, of the quality of public policies and democracy. Between other major challenges for example, the Office should work to: include younger and immigrant people; overcome bureaucratic approaches and foster a better and more conscious participatory culture directly inside the public administration; integrate better the use of different tools for different needs; find new indicators to measure District Labs impacts.

The change in the relationship between the urban administration and the citizens has been at the core of the strategy of the Civic imagination office. Of course, one cannot say that after this process citizens fully agree with all the choices of the local government, but an increase in trust has been clear looking for instance at the number of collaboration pacts implemented (signing pacts requires mutual trust). Furthermore, creating “antennas” at district level by establishing local teams and acknowledging their contribution to the work of labs has allowed the Office to have a clearer perception of the sentiment of people and an ever-open communication channel with more active citizens.

Lastly, many active citizens helped spread the word about the ongoing initiatives and became active promoters, thus showing trust in the process through direct actions. In this sense, Labs help city staff to collect community ideas on public policy issues, supporting at the same time associations and citizens to suggest and promote new projects. Moreover, an important part of the everyday work of the Civic Imagination Office is proximity activities and the creation of an ongoing relation with active citizens by means of direct emails, continued use of the main social networks, the civic network web pages as well as with public meetings and presence in community initiatives in the 6 city districts.

In a long-term perspective, the objective of the Civic imagination office will be to contaminate with its approach all the policies and interventions of the urban administration and to develop collaboration into a more organic co-production system. Indeed, the strength of District labs is based on the capacity to create permanent and inclusive spaces, mixing different tools and opening up new opportunities for citizens’ initiative and for a change in urban policy design.

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# Includi.MI: Local government and social entrepreneurship for an inclusive city

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## Abstract

Includi.MI is a project aimed at strengthening local ecosystems for social innovation, with the concrete ambition to help local public authorities and social entrepreneurship to become promoters of innovative outcome-based partnership schemes.

The project consists of a mapping exercise and a tailor-made capacity building programme conveyed to civil servants and social innovators through an experimental learning method. By taking a multidisciplinary approach, Includi.MI aims at generating new relationships, knowledge, and opportunities to improve territorial cohesion and to make Milan capable of tackling new social challenges in a radically new way.

**KEYWORDS:** social innovation, ecosystem, public policy, capacity building

## Introduction

Today the public sector is undergoing a deep transformation, in particular at the local level where often falls the first responsibility to face new social and welfare challenges (Sabatinelli & Sempredon, 2017).

This transformation, triggered also by the demand of participation coming from the civil society and by bottom-up phenomena and social innovation experiences, has among its causes the increasing complexity of solving social challenges, because of the unbalance between the scarcity of public resources, and the extent of public problems as progressive aging, increasing unemployment. At the same time, we are witnessing the rise of a new set of opportunities, ignited by the availability of new technologies on one side, and the emerging of a new variety of social entrepreneurship on the other side. Such new social entrepreneurship is hybrid, as it follows both profit and social impact (Venturi & Zandonai, 2014), and is increasingly characterised by a deeper adoption of technologies (Millard & Carpenter, 2014), which boosts the need of new forms of financial capital (Arena et al., 2018; Nicholls & Emerson, 2015).

We believe that local administrations may rely on this new form of social entrepreneurship and to some extent respond to the complexity of solving social challenges (Grimm et al., 2013) by building functional ecosystems of social innovation (Jacobides et al. 2018; Montanari et al., 2017; Visnjic et al. 2016). Practitioners and academics suggest that partnerships among the actors of the ecosystem should adopt outcome-based agreements, as Pay-by-Result (PbR) schemes and Social Impact Bonds' (SIB), which link financial disbursement to the achievement of pre-defined and measureable social outcomes, rather than to the attainment of inputs, outputs or deliverables. These schemes, currently experimented in several countries with mixed results, are supposed to align the interests of public and private actors toward superior solutions, but are evaluated cautiously (Edmiston & Nicholls, 2018; Maier & Meyer, 2017; Arena et al., 2016).

## Outcome-based partnerships for social impact: threats and possible responses

While many Italian municipalities are betting on social innovation (Alulli et al., 2017) trying to scale up small experiments and find structural policies, at the end of 2017 the Government financed with 25 million Euros an outcome-based fund, the "Social Innovation Fund". Such fund, still under definition, is expected to be a great stimulus to local authorities, as it may improve efficiency, sustainability and effectiveness of public solutions to social challenges. Nevertheless, most of the analysis of current outcome-based funds point at several risks for social enterprises, social investors, and citizens, among which: perverse incentives and mission drift for social innovators, marketization of public services, high transaction costs and an excessive focus on impact measurement rather than project implementation (Edmiston & Nicholls, 2018).

Given the complex situation, Includi.MI is set to prepare public and private actors of social innovation ecosystems to work under outcome-based approaches, and to provide them with tools, competences and connections able to tackle these risks.

In order to achieve such an ambitious goal, the project identifies four main lines of action:

1. Development and strengthening of civil servants' skills aimed at: planning of pragmatic policies; definition of new instruments, such as Pay-for-Results contractual mechanisms, including Social Impact Bond; measurement of the social impact generated by suppliers and partners;
2. Development and strengthening of social innovators' skills aimed at: understanding processes and mechanisms of interaction and dialogue with the PA; measurement of social impact generated by the interventions; participation in innovative public-private collaboration schemes, based on the measurement of social impact;
3. Strengthening of the local social innovation ecosystem: emersion and connection of social innovators and of PA innovators, engagement on local challenges, identification of gaps in current social innovation policy;
4. Identification of new models for the discovery and engagement of suppliers / problem solvers for PA, aimed at increasing positive social impact: evaluation of Pay-by-Result schemes.

These lines of action reflect a multidisciplinary approach, which combines design for policy and managerial tools, which we believe may contribute to build local social innovation ecosystem and advance outcome-oriented public-private partnership for social impact (Di Dio & Mortati, 2017). Includi.MI, more generally, builds on the idea that professional skills and capabilities coming from designers have a relevant role in policies for social innovation ecosystems (Selloni & Manzini, 2016). Design tools may integrate management approaches to better align challenges and opportunities about social innovation and create a more inclusive governance system in which public administration (PA) and social

entrepreneurship, to whom the project is addressed, cooperate systematically to solve local challenges.

## Structure of Includi.MI and main results

Two research groups have conjunctly worked on Includi.MI: Tiresia (PoliMi School of Management), which works on social impact ecosystems and impact finance, and Design Policy Lab (PoliMi Design Department), which is focused on design for policy. Fondazione Cariplo has funded the project for one year, and coherently with time and resources available, Includi.MI worked on few priorities and set the basis for longer-term processes.

The two main outputs of the project are a social innovation policy map, and a two-day capacity building programme.

The social innovation policy map provides the identification and critical interpretation of the main social innovation policies implemented by the Milan Municipality, and describes the map of stakeholders. The map has been drawn in collaboration with the Municipality and highlights strengths and gaps of the local ecosystem by analysing seventeen policies implemented between 2012 and 2017 by the Directorate for Urban Economy. While there are maps for social innovation in Milan (see for instance Sgaragli & Montanari, 2016), none is focused on policy instruments, and through it, the project investigates the connections among social innovators and PA innovators, and the gaps in current social innovation policy. In synthesis, the map suggests that the policy-maker adopts three main policy instruments: financial grants to social innovators, mainly organisations in their start-up phase; procurement for acceleration, incubation, co-working services, often concealing also urban regeneration goals; consultation and participation processes, targeting citizens and intermediary organisations as local associations or sharing economy actors. The first two instruments are the most developed and receive the largest part of the financial resources available for social innovation policy. None of the instruments relies on social impact measurement or experiments social impact finance schemes. At the same time, while they empower single organisations and enterprises and create innovative hubs, they are still weak at connecting systematically all actors in a functioning ecosystem and at granting a truly inclusive governance.

The capacity building programme was addressed to both PA and social innovators, which worked together for two days. The programme entailed:

- Day one - thematic deepening sessions: lectures and case study presentations by experts coming from different fields. In particular, the lectures provided examples and knowledge on new financial instruments for social entrepreneurship, as social impact bonds and Pay-for-Result scheme, and social impact measurement practices.
- Day two - design for policy experience: initial lecture to introduce the approach, followed by co-design sessions and hands-on work.

The programme may be considered innovative for at least two reasons. First, it engages representatives from both PA and social entrepreneurship active in the Milan metropolitan area and beyond, and make they work together as peers. The programme puts them on the same level and tries to overcome knowledge and cultural obstacles by focussing on common goals. Secondly, the programme combines traditional lectures with co-design sessions, based on the idea that a policy relying on partnerships for social impact should be structurally grounded on this approach.

It directly addressed the need to empower civil servants and social innovators, by developing their skills and by collaborating at new models for engaging in public-private partnerships. During the co-creation sessions, the participants worked on the identification of social innovators' needs and on some possible experimental partnerships to work on these demands.

## Critical assessment and future challenges

In order to build a public-private partnership for social impact, we need to make sure that policy-makers act as “*collaborative institutional ecosystem managers*” (Foster & Iaione, 2015: 337) rather than pure regulators, and that social innovators are conscious and prepared to take co-responsibility of a policy and of common goods. Both roles are becoming hybrid, and even the traditional distinction between top-down and bottom-up approaches today is blurred, as institutional and civic actors increasingly cooperate on an intermediate level in open learning arenas with self-organizing co-management structures (Schauppenlehner-Kloyber & Penker, 2016).

Nevertheless, building such partnerships requires a long-term roadmap for a deeper transformation in civil servants’ and social innovators’ ability and willingness to cooperate as peers. A transformation that is even more relevant when partnerships are supposed to adopt outcome-based schemes, where trustful and cooperative relationships seem as relevant as technical awareness.

Includi.MI, thanks to the positive engagement of PA and social innovators, may well represent a first step in this direction.

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## *Track 5: Producing, distributing and organising*

The convergence between digital technologies and fabrication is increasingly supporting the transformation of systems for the production and distribution of products and services, as well as the emergence of distributed forms of fabrication enabled by laboratories, digital platforms and peer-to-peer communities. This convergence also influences the nature of artifacts themselves, which are increasingly characterized by the diffusion and integration of the so-called Internet of Things and Artificial Intelligence.

This scenario is endowed with opportunities and critical aspects that are already affecting the current socio-economical context, while opening up a reflection that involves the service design discipline. In particular, explorations in service design research and practice are looking at:

- services that embody the democratization of processes for designing products and systems;
- services emerging from the way production and distribution systems characterized by growing robotics and automation (i.e. factories of the future) are organized;
- complex systems linked to urban policies and their services, working for example on reintroducing production and distribution in urban areas;
- products acting as service-platforms thanks to the integration of technologies such as Internet of Things, machine learning and AI.

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# Service design in open production, distribution and organisation as a discipline facilitating democratic critique?

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## Abstract

Service Design, as its name suggests, is mostly concerned with motivations for building new services and systems. Its driving factors are often the desire to improve human experience of these systems and to create leaner processes. In this paper, we point to the key qualities of service design and how complements from other disciplines may strengthen its analytical components, allowing a critical understanding of complex technological systems.

The first part of the paper aims to describe this general scenario of transformation. The second part is based on an initial literature review, mapping existing contributions that talk about the role of service design in the Fourth Industrial Revolution. The final aim of this part is to find emerging trends in service design, by analysing and comparing common and/or different disciplinary points of view.

These new trends could help discern possible new challenges for service design.

**KEYWORDS:** service design, fourth industrial revolution, openness, democratic critique

## 1. Exploring Service Design in the transformation of design, production, distribution processes: research objectives and methodology.

Service Design as the naming of the discipline suggest, is mostly concerned with the interest of building new services and systems. A driving factors of this is often improved human

experience of these systems, and more lean processes. As most other design disciplines Service design is concerned with producing novel human and societal relevant contributions, and less oriented towards delivering clear analysis and accounts of existing systems and revealing its features for public critique. However, the latter maybe an interesting research avenue to pursue. This paper aims to create a first state-of-art about the evolutionary path of Service Design within the so-called Fourth Industrial Revolution (4IR, McAfee and Brynjolfsson, 2014; Schwab, 2017; Schwab and Davis, 2018). In this paper, we point to the key qualities of Service Design and how complements from other disciplines may strengthen its analytical components and allow for critical understanding of complex technological systems.

Fourth Industrial Revolution is progressively characterizing itself by the technological convergence - 3D printing and biofabrication, robotics, Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) - both in design, fabrication, and distribution processes and products-services systems. The rise of open and distributed forms of design and production enabled by digital labs, platforms and peer-to-peer communities are referred to an emerging small population of (technological and social) *augmented-users* or *super-users* (including extreme figures of grinders and cyborgs). People able to access and/or possess, control the means of design and production in order to be autonomous and independent. On the other side, the growth of a global digitized service economy is generating great benefits for millions of users but is also characterizing itself for and increasing in-humanization and automation in the production and distribution processes. Finally, an emerging third “sci-fi” way refers to a possible future service economy *developed by* and/or *focused on* non-human agents such as robots and animals. The nature of goods and services is evolving. Processes to produce and distribute goods and services are evolving. Needs, features and roles of the users are evolving. In the next future, a new service economy could be generated *by* non-human agents and going *beyond* human users. The first part of the paper aims to describe this general scenario of transformation. The second part of the paper is based on an initial literature review mapping existing contributions talking about the role of service design in the Fourth Industrial Revolution. Literature review work is extended to the world of management, industrial engineering, CS and HCI in order to know *if* and *how* these disciplines are identifying and/or evaluating opportunities and critical aspects generated by the progressive adoption of the new technological systems in design, production and distribution. The final aim of this part is finding emerging trends for service design analysing and comparing common and/or different disciplinary points of view. These new trends could support the definition of possible new challenges for Service Design.

A majority of today’s leading global companies are relying heavily on service design for production, distribution and organisation of goods and information. Sophisticated complex closed Information and communication technologies play a central role in this. None of the dominant disciplines (Computer Science, Engineering, Business intelligence) involved in these constructions work to provide a holistic image and account of consequences caused by these systems. Based on the numerous trouble and dark clouds on the horizon spurred by the use of new technology and the recent years experiences, not least the dreams of big data, AI, and robots there is a need for alternative understandings of such complex systems. Service design has a long tradition for pursuing a holistic perspective on systems balancing suggestive practices with analytical skills, including the will, tools, and methods for understanding also the tiniest details of exchanges within a system. Secondly, Service Design has worked across human and non-human actors (organisations, computers, rules and conducts etc...). This may position Service Design as a possible key discipline for critiquing the technology deterministic visions on tomorrow and deliver visions on a future we would like to live in. Service design may be this helping disincline. Service Design in the service of democratic discourse and actions.

## 2. Emerging scenarios and issues for Service Design moving from Third to Fourth industrial revolution.

### 2.1. Is the Fourth industrial revolution demanding Service Design (and viceversa)?

To have a quick overview of the actual presence, connections and contributions of Service Design on the 4IR, we made a first bibliographic recognition. We looked at contributions from different disciplines such as design, economy and management, social sciences, engineering. A first list of papers and articles has been selected using the research keys "Fourth Industrial Revolution", "Service Design", "Design", "Industry 4.0", "Servitization", "Open and distributed production". The search on scientific database<sup>1</sup> confirms that 4IR can be considered one of the prominent scientific topics for the next future, but until now seems there are not specific connections with Service Design.

The first recognition and the most explicit paper merging Service Design and Industry (not only 4.0) is related to some cases of adoption of service design tool and methods in industrial fields. Costa, Patricio, Frias, Morelli, and Magee used an integrated service design approach within the PSS design method to innovate the new product and service development of a mature industry. *"The results of the case study application show that the integrative PSS approach was able to support a company in its transition from a product-oriented mindset to a service mindset, allowing the company to create new product and service system value propositions with customers and expand the company design portfolio."* (Costa et al. 2018, p.140). Similarly, Iriarte and other co-authors developed an interpretation of the design and service design visualisation capabilities: *"that manufacturers can use as they make the transition to servitization. A change where usually the users play a fundamental and different role sometimes becoming co-author or author of the service."* (Iriarte et al. 2018, p.2).

About the change of Design, production and distribution processes, There is an increasing area of reflection connected to the new models and processes for or to manufacturing with unavoidable reflexes on design and service design. Morrar, Arman, and Mousa (2017) in *The Fourth Industrial Revolution (Industry 4.0): A Social Innovation Perspective*, reflect on the social dimensions of the Fourth Industrial Revolution to defining a political issue: *"With the transition to Industry 4.0, policy makers should think its global impact on current and potential social problems through the social dimensions of new technologies. Society at large should benefit from such industrial transformation, because consumer and producer are largely connected and both can participate in the production and consumption process."*

Rauch e many other co-authors (Rauch 2013 and 2016) reflected on the *Distributed Manufacturing System* (DMS) where the production is going to a dematerialisation process and become diffuse on the territories. This foreshadows more sustainable scenarios for production: *"DMS are an appropriate model for more sustainable production and appear therefore to be a suitable and potential manufacturing strategy to handle the related challenges of sustainable production in emerging markets."* (Rauch 2016, p. 130). Rauch and other authors sustains that design can become open, referring to the production of customised goods involving intelligent machines, factories and micro-factories and "users as designers": *"In the future, it will be increasingly difficult for manufacturers to keep pace with the rapid development of design tools. Not only product developers but also consumers today have access to design tools that a few years ago were out of reach (Leber, 2013). The end user, in the sense of Open Innovation, is more often directly or indirectly involved in the product development process. Product development, in the future, occurs not only within the company but also can be considered a collaborative process between the company and customer. As part of this development, centralized manufacturing systems are increasingly being replaced with decentralized production structures (Ueda et al., 2004). The vision of Open Innovation is that end users design and create their product using digital design and product development tools. They then forward the relevant data streams to capillary distributed services or production laboratories in their region, which manufacture the product using generative/ additive production technologies known from Rapid Prototyping."* (Rauch 2016, p.133).

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<sup>1</sup> Scopus Elsevier, ISI Web of Knowledge and Google Scholar.

The "professional" design should evolve his role to design the full production process and the full chains, because manufacturing become a common service that can be offered to final users. Capgemini and SAP in the report *Empowering Discrete Manufacturers for the Digital Age*, states that, *"The digital transformation paves the way for new revenue streams, generated through innovative business models — such as mass customization or product-as-a-service— that enable organizations to collaboratively create value across corporate boundaries."* (p.16)... *"Service-centric business models have been in use for some time in the discrete manufacturing industries. Digitization can be harnessed in order to lower the barrier to generating lucrative revenue streams through product-related services."* (p.21). Deepening the role of design in 4IR, Gerlitz in his article *Design For Product And Service Innovation In Industry 4.0 And Emerging Smart Society*, states that the *"Role of design for innovations through user involvement related to Industry 4.0 or smart production processes is likely to be underrepresented in this context."* (p.183) *"Currently, design enjoys increasing recognition as an integral part in innovation-driven economy on organisational, business, societal and policy levels. Nonetheless, its integration within the industry 4.0 research streams is emerging, especially from the conceptual perspective... Design is perceived as a driving force for smart manufacturing, smart products and services connected with customers and consumers, increasing resource efficiency, business performance and competitiveness and level of innovations. Nevertheless, with regard to the findings, the intensity or external perception of design and its integration within the innovation product or process development process may differ. The reason behind this is a level of design tangibility and perception."* (Gerlitz, 2015; p.193)

Industrial Revolutions has considered workers in manufacturing and service companies mainly as *human factors*, similar to machines or prosoively replaceable by them. The change of production models change this perspective introducing the users-designers as a new *human actors* in the process and bring to consider a new form of *Collaboration Productivity* (Schuh et al., 2015) based on new relationship between human and human, human and machine, human, machine and production systems. At the same time, recent technological advancement in design and manufacturing (VA, AR, Big data and AI) push to reconsider the presence of designers and their role in these new *Cyberphysical Systems*. Ferrari (2017) in *Design and the Fourth Industrial Revolution. Dangers and opportunities for a mutating discipline* reconsiders this possibility developing an historical recognition starting with Buchanan and the fourth dimensions of design where the fourth order concern with complex systems, and arrived at Dubberly & Pangaro (2015a). *"In the Fourth Industrial Revolution era, the role of design could be more than ever related to the process of discovering goals and learning what matters"* (Dubberly & Pangaro, 2015b). The Fourth Industrial Revolution, with the amalgamation of the physical, digital and biological spheres, presents a crisis to otherwise stable areas of design practice. A visionary article by Suzanne Labarre on *Fast CoDesign* entitled *The Most Important Design Jobs Of The Future*<sup>2</sup> (2016) talks about the evolution of designers in possible new professionals such as "cybernetic directors", "fusionist", "human organ designers".

In the field of Economy and management, many scholars are investigating the opportunities and challenges connected to the Industry 4.0 model (Xu, M., David, J.M., Kim, S.H. (2018), Davis, N., Samans, R. (2017). Experts like Frank T. Piller, Christian Weller, Robin Kleer (2014) are studying the evolution of mass-customization in manufacturing reflecting on a human-centered model of economic growth. When cyber future and machine driven production models are emerging, a reflection on the role of the humans in this perspective and also a reflection to a sustainable economic perspective give to the people new roles. Again, design and service design are not directly involved in these new challenges.

### 3. Designing services and Fourth Industrial Revolution.

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<sup>2</sup> The article is based on interviews to designers at Google, Microsoft, Autodesk, Ideo, Artefact, Teague, Lunar, Huge, New Deal, and fuseproject in order to predict 18 new design jobs of the future. See [www.fastcodesign.com/3054433/the-most-important-design-jobs-of-the-future](http://www.fastcodesign.com/3054433/the-most-important-design-jobs-of-the-future).

Design, in broad terms, has a tendency to be communicated as object oriented (product design, fashion design, service design etc.) rather than impact oriented e.g. democratic design, sustainable design. The reasons for this are probably historical (Buxton 2009), and a dominant tool for such storytelling might be related to the Schumpeterian inspired conception that innovation is resource and object driven (Schumpeter 1934). However, it may be argued (equally relevant) that progress, new ways of organising everyday life and access to resources are socially motivated; consider: the Reformation, the Enlightenment, the Welfare state etc. In this paper we promote that it is time to shift the balance between the object of design to the impact of design. The maturing of Service Design in the context of new methods, organisations and tools for Industry 4.0 might be the midwife of such change.

### 3.1 Service Design and Fourth Industrial Revolution

The foundation of Service Design is built on shaping services substituting products. This point of departure embeds a concern for the value delivered by the service. Looking to the theories and practice of Service Design the field has historically mostly been concerned with modelling new services and less oriented towards analysis of current status; with a particular strong component and will to model human interests. Secondly, Service Design has a tendency to depict and model actions, results and reasons as predictable causalities and only with an increased complexity when mapping multi-stakeholder situations. Complementary to this, technology based visions of Industry 4.0 rarely model humans as part of the system beyond being the requester and receiver of goods. Furthermore, while visions of Industry 4.0 technologies are marketed as “open platforms” that are easy to control, the chains of working happen between machines and keep humans out of the loop. A key critique and option for service design in this context is the concept of “openness”. Open, in the sense that the system allows for human participation. The examples are growing - Fab Labs and new urban micro-factories such as Unto This Last or ambitious systemic models like Open source Ecology and TechShop franchising, however still with limited economic impact or are close to fail. These situations are hard-to-model systems produced by complex non-predictable multi-stakeholder relations – rhizomatic (Deleuze) in character.

### 3.2 Other disciplines and Fourth Industrial Revolution

Interaction design and the design of computational technologies has been delivering services for decades without calling it service design. Interaction Design is a crucial discipline in enabling Human control of machinery for Industry 4.0. However Interaction design is interested in the act of interacting with computers, while the impact of interactions strangely enough has attracted little attention (Taylor, 2015). There is a specific scientific focus and perspective on Design for Additive manufacturing (Thompson et al., 2016) but a general lack of knowledge on how Service Design can approach AI and robotics. A part of the literature review more focused on technological development in 4IR, obviously reveals a wide and prevalent interest of other disciplines (management science and engineering) in understanding how the whole set of 4IR technologies will have an operational impact on production capacity and management of production systems and what the impact on the economy will be. In particular, there is attention to understand on how these technologies can create new commercial channels (Daniel et al., 2015), how they transform supply chains to manufacturing more complex products (Holmström, and Partanen 2014; Oettmeier and Hofmann, 2016), and which business models can be developed.

### 3.3 “Openness” as a key to understand Trends in and for Service Design

The foundation of Service Design in collaboration with Interaction Design has the potential of driving the research and interest into the impacts of Industry 4.0 from perspective of democratising the technologies and opening them for civic engagement and production. The key notion in regard to the above is: “open”.

Openness in this context points participation; participations allows for human interferences and democratic control. By taking point of departure in the work on “participation” as it emerges in the book *Taking [a]part* (McCarthy and Wright 2015) we elaborate on the role of Service Design in the context of Industry 4.0 enlighten by the concept of “openness”. From the perspective of Experience-centered Design 4 themes for participation are brought forward in the book: *Taking [a]part* (McCarthy and Wright 2015). In particular they explore the notion of participation from a point of departure in Politics and Aesthetics. The themes of participation they point to are: 1) Design enquiry – how processes of participation are used to explore and enquire into design challenges; 2) Openness – how and for what participation is allowed and invited for; 3) Social Reconfiguration – how participation change the roles we adopt; and 4) Legacy – how participation manifest and define social infrastructures. Without going into depth of each theme we point to 2) *openness* as a key concept for how Service Design may serve as the complementary field of industry 4.0 technologies in the pursuit of true “open platforms” and how this field of research will point to how service design may develop rhizomatic approach.

McCarthy and Wright identify the following sub themes of openness: a) open for reading and interpretations, b) open for co-creation, c) open for adopting the facilities as a stage for performance. In the context of Service Design meeting open Industry 4.0 this may play out as in the following examples: a) Workshops and courses educating people to design/assemble their own 3D printer also invite people to interpret what a 3D printer may do for them. b) Co-create with IKEA – workshops and digital software packages allowing anyone to participate in the development and testing of furniture ideas and c) Barcelona Fab City (*fab.city*) – a visionary urban policy initiative where citizens may use publicly available facilities to stage their own inventiveness to nurture the imagination of others. The value delivered in these examples is not dominantly the product produced but the elevation of the human participants and the rhizomatic social relations that emerge from the services. Though the results of the above undeniably includes a service design contribution, the rhizomatic character of how these concepts infrastructure people is not possible to map and discuss with the current paradigms in service design. Secondly, it is our claim that adopting service design analysis perspective upon these services might reveal breaches and bridges for democratic critique.

#### 4. Exploring the ServDes (low) feeling on “Producing, distributing and organising”.

A first exploratory literature review conducted for this positioning paper reveals two aspects: first, the socio-technical challenges characterizing the Fourth Industrial Revolution are becoming crucial by policymakers and hi-tech Industry while Service Design seems not yet focused on understanding and investigating this emerging paradigm. Nowadays, scientific investigation activities and actions on this phenomenon are mainly developed in other scientific contexts such as service logic, mechanical and industrial engineering, economy and management. Moreover, the three papers accepted and re-assigned to this track combined with the promotion activities of the track itself (we talk with ServDes organizers and ambassadors about the low interest) reveal other two aspects: Fourth Industrial Revolution is considered “far” or, on the contrary, “difficult to access” by researchers in Service design. In other words, service designers understand and recognize the importance to approach the Fourth Industrial Revolution, but at the same time many of them admit they do not know how.

The track “*Producing, distributing and organising*” has been reported the lowest number of papers submitted in all ServDes conference. The track has been ideated and structured in the same way as the other ones. Moreover, it has been promoted not only within design circuits but also within non-design networks/communities/think-tank close to the Fourth Industrial

Revolution, innovation and management, such as the German Division of Technology & Innovation Management (TIM), thanks to the support of mass customization and open innovation theorists like Frank T. Piller from RTW Aachen / MIT Smart Customization Group. At the same, this track has also been promoted within the Fab Labs ecosystem. No papers come both from academic and grassroot contexts. Only the policymaker we invited has enthusiastically agreed to participate in this track. Finally, only entrepreneurs and industry managers have not invited to send us papers. Is this a failure? It's could be. Certainly, this low performance deserves some reflections. Are service designers really interested or not in these topics? Why?

The three papers accepted, confirm the first result from the literature review. Their topics intercept only marginally the research questions posed by the track, highlighting how it is appropriate try to find an evaluation key that can extend the scope of service design in the contemporary hyper-cyber complexity that characterize the Fourth Industrial Revolution. For example, seems to be a lack of multidisciplinary. Service designers did not try to write and submit papers working with industrial engineers, economists, and STS experts. These papers develop three different levels of analysis evidencing some arguments that can be used to reflect about service design and Fourth Industrial Revolution.

Frida Almqvist, in *Service design in the later project phases: Exploring the service design handover and introducing a service design roadmap*, introduce a methodological and critical reflection about handover in service design process. In short terms, service designers are mainly focused on preliminary research, concept definition and scenario building having a lower direct impact and influence in the development and implementation phases.

This part is important because it highlights possible operational limits of the service designer in the activation of the service on the market (of whatever type and level they are), especially in the development of services dealing with technological aspects and complex organizations like those that will characterize the Fourth Industrial Revolution, such as care robotics or driverless mobility services. These services not only require creativity, but robust skills on enabling technologies developed thanks to the manual dexterity and the social ability to be connected with the new communities of practice (Frey and Osborne, Schwab). If we think to emerging digital manufacturing platforms (3D printing on-demand), the role of the designer is relevant but relegated in the early stage and limited in terms of economic impact.

Francesco Mazzarella, Val Mitchell, Andrew May, Carolina Escobar-Tello in *Wearing the Threads: Service Innovation with Textile Artisan Communities* demonstrate *how service design can be used to activate textile artisan communities to transition towards a sustainable future*. This paper provides a significant, complex and well structured study that stimulate to reflect on a crucial topic for service designer: the implementation of service projects. Mazzarella et al. sustain that the critical point is related to develop the projects focussing on how project times rarely coincide with those of implementation: *"the implementation of the service implies time, resources and contextual factors that go beyond the scope of this case study, therefore assessing the impact of the social innovation is left open for future work."* One of the concepts underlying the Fourth Industrial Revolution concerns the acceleration of the development of innovation processes triggered in turn by the acceleration of technological innovation. The design of services, especially those involving extensive human user involvement, takes time. The progressive advancement of the forms of computerization and automation in the production and provision of some services (eg logistics) and will change the service experience and will probably have an impact on how the service designer approaches the design process and implementing it having the possibility of directly intervening on non-human agents carrying out the actions or on cyber-physical systems that control human operators. So, what opportunities and critical issues for the service designer in this area?

Satoru Tokuhisa, in *The Coconut Innovation Framework An Innovation Framework focusing on Resources*, proposes a new Innovation Framework, *this framework aims to develop service ecosystems by focusing on the resources of developing countries and industrialised countries and integrating them*.



The paper shows the role of service design, or in this case the service designer, in the definition of a complex project of local-territorial development based on the design a product-system related to Coconut. Tokuhisa follows the development of this project analyzes phases, tools and critical issues trying to define a model of replicable innovation (a possible case of *reverse innovation*, (Govindarajan, V., & Trimble, C. 2012). In its "hyper-local" being (Manzini, 2018), this paper reveals the ambition of the service designer to develop production models that in this case are put into practice starting from a developing country. Even in this case one might ask what is left? How will the process evolve when the service designer finishes his role?

The papers received show an attitude to experimental and action-research of service design in relation to the production and distribution topics. Moreover, the three papers provide concrete case studies and a methodological-instrumental reflection highlighting how service design acts mainly in the definition of service scenarios and related processes, above all the complex ones, but without actually entering in the implementation phase. Nowadays, the themes related to the new models of production, distribution and organization presuppose a maturity and a very strong competence on implementing services based on a complex of technologies. The processes of social innovation, where the service design thinking and logic are highly influential, are now consolidated with a robust scientific literature, projects and initiatives. This will also happen in the emerging paradigm of the Fourth Revolution Industries? Is it an area in which service design can or should invest? If we think the answer is YES, we need to start focusing on "why", "how" and "when".

Nowadays, when we talk about open and distributed production in terms of pro-am making, fabbing, advanced DIY, digital fabrication, we are referring to an emerging phenomenon not connected with the logic of Industry 4.0 (and vice versa). Moreover, the Fourth Industrial Revolution is mainly a "policy label" to stimulate the digitalization of manufacturing and service companies. These two emerging worlds seen from the Service Design perspective have a common problem: the kind of economy and society they generate. This concerns processes and projects where the interaction between products-services and users recognizes a role and a value for the latter. Neither in a world nor in the other do not yet seem to emerge "definitive recipes" of economic policy that are pressing for the development of a "Makers Economy and Society" (Wolf-Powers et al., 2016; ) rather than an "Economy and Society 4.0" (Floridi, 2014; Helbing, 2016). Instead, the overlapping area among these two worlds seems a promising field of activity for service design.

A perfect example of this overlapping area is represented by *ManifatturaMilano* ([manifatturamilano.it](http://manifatturamilano.it)), a policy program aims to promotes the development of urban manufacturing and new digital craftsmanship starting from the manufacturing and artisan roots of the city and from the comparison with the experiences that are taking place in other European cities. It is part of the smart city strategy of Milan, which is based on two pillars: innovation and inclusion. ManifatturaMilano aims to define the vision and the policy projects to stimulate the growth of the new urban manufacturing ecosystem in Milan: support this emerging community to establish in the city, grow up their businesses and activities and create new jobs, regenerate suburbs and promote social cohesion. In 2017 a co-design process was started with many stakeholders in order to develop a tailor-made manufacturing strategy based on six pillars: studies and research, communication, laboratories and services, reuse of disused urban spaces, investment support, education and training. The first major initiative was the first edition of the ManifatturaMilanoCamp<sup>3</sup> (March 17, 2018), an opportunity to converge and aggregate three communities linked to digital manufacturing projects very connected internally but poorly connected externally: the community of startups that realize projects, products and services with high technological content for Industry 4.0; the community of crafts and manufacturing SMEs present mainly

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<sup>3</sup> At Camp, for the first time, these three community were together in the same place. They met and shared their experiences creating a big networking event that saw the participation of 112 speakers from 88 different organizations, organized in 18 thematic sessions.

in the hinterland that innovate their production processes combining traditional know-how and new technologies; finally, the vibrant "urban" community of designers, makers, artisans, Fab Labs, coworking and self-producers.

## 5. New challenges for Service Design

To map, and include the design of technologies as part of service design become important for designers that operate in the Fourth Industrial Revolution. By limiting itself to the design of services, service design marginalises itself from impacting the technology that conditions the delivery of services.

*Evolution of the skills of the Service Designer.* The development of human skills is considered crucial in the Fourth Industrial Revolution. Design professionals seem have a low risk to be replaced by robotization and computerisation of work. In any case, designing in systems highly characterized by this risk needs skills to enhance the designer's capacity to design of new experiences for users in contexts such as augmented reality in various domains, new digital identities for clients, and automated services using intelligent machines. But these are also skills that enable a designer to use data strategically to develop highly-skilled and personalized services, to carry out more in-depth studies on client behavior, and to design projects that include experience in the use of products based on artificial intelligence so as to predict or anticipate users' tastes or needs. Moreover, there are skills that enhance the designer's capacity to operate in "open" organizational contexts increasing the ability to manage innovation processes, in particular creative skills to manage innovation processes characterized by a hybridization of design, science, and technology. Finally, can be also considered skills that enhance the designer's capacity to specialize for work in production contexts with convergent technologies.

*Evolution of the design tools and techniques of/for Service Design.* Many service design contributions, including those accepted in the Track 5, even when referring to the introduction of service design techniques in manufacturing companies, mainly refer to the use of analogical and static visualization and design tools (business model canvas, personas, blueprint, ...). The emerging field of Fourth Industrial Revolution is populating with technologies and processes that allow to process big data making them interact with AI and then explore reality or simulations in a virtual and augmented way. Being able to process huge amounts of data could be possible to calculate, "generate", and construct simulate scenarios differently. All this for Service Design means trying to explore a field where to experiment the transition from visualization tools to new virtual or augmented tools, trying to introduce different languages and practices through enabling technologies.

### 5.1 Conclusions

In relation to the (r)evolution of production and distribution models, the literature review (to be considered as *in progress*) combined with the analysis of the three papers presented on Track 5, begins to distinguish two fields for service design.

On the one hand there is the world of production-distribution of goods and services closer to the logic of social innovation. A world where users-customers-citizens play a more active, conscious and responsible role and where production and distribution technologies can be used in enabling, modifiable and controllable forms, co-evolving with the people and organizations. In this context, service design already has proximity and forms of contact with the dynamics of micro and self-production, with the theme of open production and with forms of collaborative and circular economy. On the other hand, there is the world of production and distribution of goods and services closer to the logic and dynamics of technological and market innovation. A world where the technological revolution works in favor of the disintermediation of production and services, pushing on computerization, the automation of human labor and the establishment of professions, "forcing" the evolution of

people and organizations. In this context, of such recent development, the service designer seems to have not yet found or defined his own space.

The Fourth Industrial Revolution, when it begins to unveil its full potential, will become a "hot" ground for the concept of innovation itself, including the risk of even questioning the role of humans as the only living species capable of designing and producing goods and processes. Service designers, to operate in this context, will be called upon to work with design choices that may include or exclude his peers, in favor of technological or market development logic. To play this "game" the service designer will presumably become a socially and technologically "augmented" professional, able to operate strategically within and between these two worlds, "equipping" himself with new skills and tools that allow to play a key role: "open" and "enable" the perspective and role of the user-citizen-innovator within the Fourth Industrial Revolution (and viceversa), finding new forms and ways to generate economic and social value.

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# Service design in the later project phases: Exploring the service design handover and introducing a service design roadmap

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## Abstract

Within practice and in academia, service design has placed a great focus on the early stages of the innovation process, while there has been limited focus on the later phases. This paper examines the later phases, focusing upon the handover from service design consultants, before leaving a project. This is identified as a critical aspect of the later phases and this paper critically examines what a service design handover is, and might be. Theoretical perspectives are combined with interviews of thirteen respondents on producing and receiving handovers, in the context of Norwegian service development projects in public and healthcare sectors. Findings indicate need for an improvement in, and a harmonization of, service design handovers; this is embodied in what I call a *service design roadmap*. Such roadmaps might support development teams receiving service design handovers, enabling them to better make use of the material during their later process phases.

**KEYWORDS:** service design, the forgotten back-end, handover, service design roadmap, user insight drift

## The forgotten back-end and the service design handover

There are multiple challenges to design for in healthcare, such as an ageing population and an increase in people living with chronic diseases, whilst the healthcare system is expected to deliver more with fewer resources (Engström, 2014, p. 2). Within this landscape, I explore the notion of patient and user involvement, described by Kujala (2003, p. 1) as “a general term describing direct contact with users and covering many approaches.” The Norwegian Ministry of Health and Care Services (HelseOmsorg21, 2014, p. 32) has expressed the view that:

*User involvement can contribute to increased accuracy in the design and implementation of (...) service offerings, but users are currently insufficiently involved in the design of healthcare services.*

Several scholars have also expressed a concern about the gap between how user and patient involvement is described in policy aims, and how it is interpreted in practice, in order for the involvement to be more than symbolic (see Engström, 2014, p. 2; Morrison & Dearden, 2013, p. 127). During the last few years, the field of service design has emerged in “new and influential roles” within healthcare services (Jones, 2013, p. xvi). Drawing on methods from various disciplines, service designers aim to systematically involve and understand users when developing services (Stickdorn & Schneider, 2011, p. 128). Hence, the discipline can be seen as a relevant approach to the issue of user involvement in practice. Meanwhile, though scholars such as Sanders and Stappers suggest that user involvement should happen “...throughout the design process at all key moments of decision” (2008, p. 5) in order to create successful services which satisfy user needs (Yu & Sangiorgi, 2014, p. 197), the research of user involvement in the later phases is limited (Yu & Sangiorgi, 2014, p. 201).

In other words, many scholars have studied user involvement in the early process phases, while the notion of user involvement in the later phases has received less attention. This coincides with a general tendency in service design research, where the early phases of service design development have been thoroughly explored by scholars (e.g. Alam, 2006; Bruce & Cooper, 2000; Clatworthy; Koen et al., 2002), while the focus on the later phases has been limited (Martins, 2016; Overkamp & Holmlid, 2017). In a previous publication, I explore the later phases, hereafter referred to as the *forgotten back-end* (Almqvist, 2017). The initial study identified the *handover* from service design consultants to the client as one critical point in the later phases (Almqvist, 2017). Moreover, the initial study introduced the notion of *user insight drift*, suggesting that a project might drift away from initially identified user needs during the later process phases (Almqvist, 2017, p. 5).

My aim now is to contribute to the research of the forgotten back-end, through the exploration of what a service design handover is, as seen from the perspective of service design consultants and the perspective of receiving clients. The focus of this research is on the handover delivered from service design consultants before leaving the development team, when a service concept has been developed. In other words, the focus lies on instances where consultants are involved in projects during longer periods of time. The main contribution is the suggested concept of *service design roadmaps*, a concept I argue may support clients’ work during the later development phases, when the service design consultants have left the project.

The presented study is part of my doctoral work, where I explore the later service design process phases, in the context of service development in Norwegian healthcare. The work explores how service design handovers might support development teams to keep a user-centered focus throughout a service development process. The work is supported by the Norwegian Research Council and is part of Centre for Connected Care (C3).

The structure of this paper is as follows: a brief background concerning the service design handover is given. The interview analysis approach of *meaning condensation* is made clear, before the result categories of this analysis are presented. After discussing the findings, with an emphasis on the service design roadmap, further research directions are suggested.

## Background

In the public and healthcare sectors, service design has emerged as a relevant user-centered approach for supporting service development (e.g. Sundby & Hansen, 2017). Meanwhile, service designers have been criticized for a lack of implementation competence, which might lead to concepts not leaving the drawing table (Mulgan, 2014, p. 4). Furthermore, a need for more research into process support for service design implementation has been indicated by

several scholars (Almqvist, 2017; Martins, 2016; Overkamp & Holmlid, 2016, 2017; Yu & Sangiorgi, 2014). By exploring the service design handover, this paper contributes to research into the later development phases. The aim is also to contribute both to service designers working on projects in public and healthcare service development, and to clients, which in this work are civil servants running projects where service design consultants are involved.

In this section the service design handover is introduced, and aspects that might influence a service design handover are discussed. Lastly, the works of two relevant service design scholars are introduced, and the contribution of my research is discussed.

## The service design handover

When involving service design consultants in development processes, a need for communicating and transferring generated information, insights and results between consultants and the rest of the team often occur, no matter how successful the collaboration is. In an earlier study I found that service design consultants are mostly involved in the early development process stages, and few have experience of participating in the later stages (Almqvist, 2017, p. 5). This makes the handover an important output of a design process, considering that this material can function as process support after the consultants have left. There are few descriptions focusing specifically on service design handovers, though scholars have thoroughly described an abundance of service design methods and tools, which can generate handover material (e.g. Sanders & Stappers, 2013; Stickdorn & Schneider, 2011; Tassi, 2009). The service design handover, hereafter mainly referred to as handover, is here understood as something continuously taking place throughout the process, both as *activities* and *deliverables*.

**Activities.** Presentations, meetings and informal discussions between consultants and the development team, are typical handover activities, where information, insights and results are both generated and transferred. Due to the nature of the gathered research data, this paper focuses on handover deliverables.

**Deliverables.** In contrast to for instance product design, where most design material is tangible, the service design discipline deals with much more intangible design material. The challenge of conveying the intangible aspects of services, influence the handover deliverables. One of the most prominent approaches to communicate intangible aspects of services is visualization, which is used to “depict the service being (re-)designed” (Segelström & Holmlid, 2011, p. 2). Among several service design visualization techniques appraised by Segelström and Holmlid, *customer journeys* (Parker & Heapy, 2006), also referred to as user journeys, and *storyboards* (see Quesenberry & Brooks, 2010, p. 256) are considered highly relevant for conveying service concepts. A third well-known technique is *service blueprints* (Bitner, Ostrom, & Morgan, 2008; Shostack, 1982). All three are distinctive examples of service design handover deliverables (see figure 1).

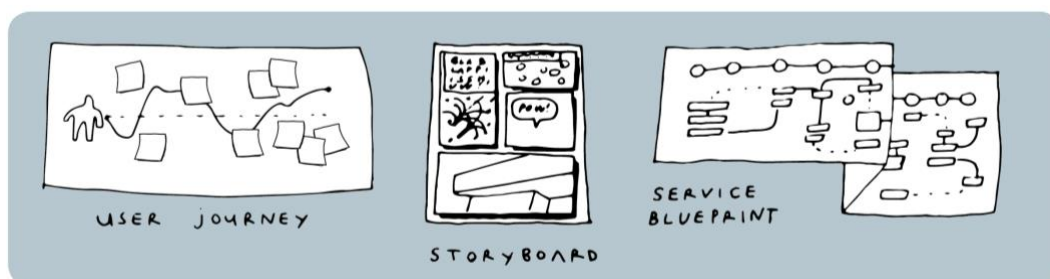


Figure 1. Three service design handover deliverables



Service design consultants, just as consultants from any field, can be hired during different phases of a process. The phases in which service design consultants are involved, will inform the content and format of the handover deliverables. Most handover deliverables are either a:

- condensed summary of the project up until a specific date, hereafter referred to as *project documentation*, or;
- specification for a future solution, hereafter referred to as *service concept* (see Stickdorn & Schneider, 2011, p. 134).

These types of handover deliverables can either be delivered during a process, or as a final handover deliverable, before leaving a project. The physical format of such handover deliverables is most typically a written report or a digital presentation, and often contains one or more visualizations (see figure 1).

## Two scholars studying the later phases

This paper presents findings from qualitative interviews, which are seen in light of the research by Eun Yu (2014) and Tim Overkamp (2017).

Drawing on Johnson and colleagues (2000, p. 18) Yu divides service development into how services are designed, and how services are implemented (2014, p. 197). Yu argues that if these two stages are disconnected, it might lead to the “generation of service concepts that cannot be actualized in current service delivery system[s]” (2014, p. 201) and argues that research on the connection between these phases is needed in order to achieve more successful implementation (2014, p. 202).

Drawing on Kindström and Kowalkowski (2009), Overkamp reasons that implementation ought to be “on the agenda before the project arrives at the delivery and sales stages” (2017, p. 4411). Overkamp introduces the notion of *implementation during design*, arguing that implementation as a concept needs to be present continuously during the design process, and that more research is needed on this topic (2017, p. 4418).

This paper contributes to an understanding of the transition from *designing* to *implementation* described by Yu (2014). More specifically, by exploring the handover from service design consultants to a client, before leaving a project. The paper also contributes to an exploration of how implementation can be considered *during* a design process, by suggesting the concept of service design roadmapping as a means to support clients in making use of handover material after the service design consultants have left.

## Method

In order to explore the area of interest, data was gathered from interviews and observation. Thirteen qualitative semi-structured interviews (Kvale, 1996) have been conducted, with four civil servants, four service designers working in service design agencies, three service designers working within public services and two consultants from other disciplines than service design. The variety of respondents was deliberately chosen, to gain insights about the topic from multiple perspectives. The chosen respondents all have experience from service design projects in the Norwegian public sector and most have experience from service design projects in healthcare. All are situated in Norway, and all have experience either of producing or receiving a service design handover. Their background and experience are as described in figure 2.

1. <b>Senior freelance consultant</b> (without design background) Receiver of service design handovers;	8. <b>Senior service designer</b> (working at a hospital in the role of service designer) Producer of and receiver service design handovers;
2. <b>Senior management consultant</b> (without design background) Receiver of service design handovers, and has collaborated with service designers in projects;	9. <b>Civil servant</b> (working with service design in public services on a strategic level) Receiver of service design handovers and developer of guidelines for service design handovers in public service development;
3. <b>Civil servant trained as service designer</b> (working with service design in public services on a strategic level) Receiver of service design handover and developer of guidelines for service design handovers in public service development;	10. <b>Civil servant trained as service designer</b> (working with service design in public services on a strategic level) Receiver of service design handovers and developer of guidelines for service design handovers in public service development;
4. <b>Senior service design consultant</b> (with experience from working as a civil servant) Producer and receiver of service design handovers;	11. <b>Senior service design consultant</b> Producer of service design handovers;
5. <b>Civil servant</b> (working with public healthcare services) Receiver of service design handovers;	12. <b>Senior service design consultant</b> Producer of service design handovers;
6. <b>Healthcare employee</b> (working at a hospital) Receiver of service design handovers;	13. <b>Civil servant</b> working with public healthcare services Receiver of service design handovers.
7. <b>Senior service design consultant</b> Producer of service design handovers;	

Figure 2. Interview respondents

The interviews lasted between 20–90 minutes and were conducted from February–August 2017. All interviews were audio recorded and were later transcribed in verbatim. The interviews were analyzed according to the method developed by Amadeo Giorgi in the 1970's (e.g. 2012), which was further developed by Steinar Kvale, and referred to as *meaning condensation* (see 1996, p. 192). The main themes emerging from this analysis were further explored in the light of literature. All transcriptions were read with three main questions in mind:

- In which phases are service design consultants involved during service development?
- What is a service design handover?
- How are service design handovers produced, received and taken into use?

*Meaning units* were articulated using the systematic approach as described by Kvale (1996, p. 194). The meaning units were then gathered into a matrix consisting of thirteen interviews and six themes. The themes were as follows:

- The service design handover as continuous throughout a project
- Project documentation
- Service concepts
- Service design roadmap
- User involvement
- The context of public and healthcare service development in Norway

The themes differ from the initial main questions, since they were refined during analysis. This relates to Kvale's reasoning, that analysis is not conducted as an isolated stage, but rather continuously through an interview inquiry (1996, p. 205). Correspondences and variations were examined across the material, studying experiences and conceptions across individuals. This step had no interest in the individual and her answers but the focus was on the whole material and aimed to depict the variations within meaning units.

Data has also been collected through participant and non-participant observation (Cooper, Lewis, & Urquhart, 2004) in five service development projects within Norwegian healthcare. My role in the projects varied from participating and non-participating service designer, to

participating and non-participating researcher. Furthermore, projects where external service design consultants are hired on a project basis are in focus, considering that this is of the most common modes of involving service designers in public or healthcare service development today. These two factors also influenced the choice of interview respondents. In this paper, a few observations are used to illustrate the results of the analyzed interviews.

This paper presents some central aspects of the study. Other aspects, such as user involvement and the context of service development within Norwegian healthcare, will be described further in later publications.

## Findings

The main focus is on exploring what a service design handover is and might be. This section presents the results of the meaning condensation analysis (Kvale, 1996) of the interviews. The results are supplemented by a few examples from observations.

A service design handover may be perceived as continuous throughout a project, consisting of both various *activities* and *deliverables*. Two interviewed consultants expressed the view that ideally handovers should happen continuously, as long as the consultants are involved. As phrased by one of the consultants:

*The handovers I find most ideal (...) is when we've been working so close to the customer, that there's hardly any handover [to deliver before we leave]. The [final handover] is just a formality, since knowledge transfer has taken place continuously during the project.*

The notion of the handover as redundant in successful projects, where collaboration is continuous and well-functioning, is shared among some of the interviewed consultants, and resonates with data from my previous study of the forgotten back-end (Almqvist, 2017, p. 5). Though the notion of the handover as redundant might seem bold, one important quality of this notion is that one cannot view a handover as an isolated entity.

The interviewees expressed few opinions regarding handover activities, but indicated several challenges and opportunities relating to the handover deliverables that service designers produce.

The following section present three central aspects of handover deliverables, each shedding light on different qualities of the service design handover. The first category is *project documentation*, the second *service concepts*, and the third *service design roadmap*. The last category indicates a concept in need of further research.

### 1. Project documentation

Both interviewees with experience of producing or receiving service design handovers, expressed several arguments for why project documentation is important, and described challenges relating to lacking documentation. For example, one of the interviewed in-house service designers had experienced that a project she wanted to learn from, but had not participated in, had hardly been documented at all:

*In that project the handover was verbal; it was a presentation. In other words, the knowledge [generated in the project] is only present in the people who have been part of the process.*

A few other interviewees also mentioned similar experiences of lacking project documentation, where the lack of documentation made it hard to:

- Explain to others what had been done in a project
- Learn from the project experience if one had not participated in the project
- Build on earlier project phases, especially in cases where a longer period of time had passed between pre-project and the main project

Benefits of project documentation mentioned by the interviewees include the use of such material to successfully embed a project within the organization, and for diffusion of a project outside of the organization.

## 2. Service concepts

While project documentation captures what has been done during a process, *service concepts* aim to depict the overarching goal and desired service that the service development process is aiming for. The importance of service concepts was expressed by nearly all of the interviewees, and this deliverable was described as highly relevant for dealing with the challenges mentioned in the previous section.

Most interviewees who had received service design deliverables, had very few remarks concerning how the deliverable content or format could be improved. Hence, there are few indications of a need to focus on the deliverables per se. However, most had experienced challenges related to *receiving* the deliverables. This challenge was mentioned by most interviewees, and can be read in the statement by an in-house service designer:

*I think there is something challenging about the process, maybe not the documentation, but perhaps one should have a deliverable on how to use this information afterwards if you don't have any service designers onwards.*

In other words, no matter how relevant service design concepts and deliverables might be from the consultant's point of view, the receiving stakeholders need appropriate support to know how to take the deliverables into practical use. This leads to the following third category.

## 3. Service design roadmap

The third category service design roadmapping and service design roadmaps, relate to a gap I have identified in service design research so far. Namely, how those receiving service design handover deliverables can make use of the material in their further work. The term roadmapping describes a visual strategic planning process (Phaal & Muller, 2009), while roadmaps are the output of such planning processes (Garcia & Bray, 1997, p. 31). The roadmapping approach has long traditions within technology and product development, where it is commonly referred to as Technology roadmapping or TRM (see Hussain, Tapinos, & Knight, 2017). According to Phaal and Muller, the three essential questions that a technology roadmap ought to address are: Where are we now? Where do we want to go? and How can we get there? (2009, p. 42).

Though roadmapping and roadmaps are well established and described in other disciplines, this is so far not the case in service design. A brief search on Google and Google Scholar for “service design roadmap” and “service design roadmapping” presents no results describing a service design roadmap or a service design roadmapping approach. A few studies mention roadmaps, such as Farmer and colleagues describing the development of a “summary map” to assist managers with participation during a project (2017). However, I find no studies related to my focus on service design roadmaps for supporting development teams to make use of service design material, after the service design consultants have left.

In my interview material, only two interviewees use the term *roadmap*. Those two respondents are service design consultants, describing how to prepare the development team for the phase after the consultants have left. Meanwhile, almost all respondents expressed that there is a need for “recommendations, activities, instructions, guidelines or plans” when receiving service design handovers. This relates to the need for being able to use the material and know where to start, when working towards implementing a service and reaching for a visionary goal. This need was expressed by both interviewees with experience of receiving service design handover deliverables, hereafter referred to as *receivers*, and interviewees with experience of producing service design handovers, hereafter referred to as *producers*.

I propose to further explore the correlation between the TRM approach and the interviewees’ perceptions of what is needed, which may result in a roadmapping approach specifically for service design. Furthermore, I argue that this concept might contribute to a better understanding of the later phases of service design development, which has not been much studied so far (Almqvist, 2017; Martins, 2016; Overkamp & Holmlid, 2017; Yu & Sangiorgi, 2014).

**3.1 Receivers.** Interviewees who had received service design handovers described various experiences that indicate a need for what I’m calling a service design roadmap. Many expressed the view that service designers have a tendency to deliver visionary concepts that are seldom supplemented by pragmatic recommendations for operationalization. However, some interviewees described handover deliverables as easy to take into use when the project was not very complex, few stakeholders were involved, and when the service concept was of an incremental, rather than visionary and innovative nature. On the other hand, some expressed the view that there was a need for more practical and systematical deliverables in complex projects with many stakeholders, and visionary service concepts.

The challenge of receiving deliverables without pragmatic ‘how to’ recommendations, was also the case in one of the projects I observed. The leader of this project, who had previously hired service design consultants, expressed the view that:

*In retrospect, I think (...) [that the designers] should have delivered a much more concrete solution, which considered the economical resources available.*

One consequence of this overarching and visionary service concept was that the development team had difficulties knowing where to start after having received the service concept deliverables. As phrased by the same project leader:

*We didn’t have any tools to make even one little thing, since we didn’t have anything concrete.*

Several interviewees shared similar experiences. A civil servant with service design background, described receiving a handover from a service design consultancy, not knowing how to use the material in her further process. She suggested that:

*There haven’t been any [discussions on] what we are going to use this [material] for? There has been nothing like that.*

The interviewees expressed many different challenges related to receiving service design handover deliverables. At the same time, they had experienced very few projects where expectations or requirements in regard to the handover had been explicitly formulated.

**3.2 Producers.** Several of the interviewed service design consultants argued that it is important to develop a plan for how receivers can make use of handover deliverables in their further process. A service design consultant explained:

*Ultimately, 'how' we deliver things becomes quite important. We think, at least for now, that delivering a sort of roadmap, a plan, is more [important] than [saying] – Yes, here you have the concept, we got this result, it worked like that. – Rather, [we] try to use time to draw the road ahead.*

Furthermore, the interviewees emphasized the importance of contextualizing the handover deliverables, as expressed by another service design consultant:

*The people who are left when we leave, are the most important. (...) [We must] strengthen the plans [receivers] have in their continuous work, (...) our job is to provide [them with] the tools they need to get their plans done.*

While the analyzed interview material indicates that producers express the importance of a planning the road ahead, the material also indicate that:

- Not many service design consultancies have defined approaches for developing plans for implementation;
- Not many service design handovers contain plans for implementation;
- Expertise and experiences regarding service design handovers and implementation plans are seldom shared among consultancies.

To sum up, this section highlights the following aspects of the service design handover: a handover may contain both activities and deliverables and can be seen as continuously taking place as long as consultants are involved. The interviewees had few comments regarding handover activities but had experienced challenges regarding handover deliverables. Three categories of deliverables were described; project documentation, service concepts and the service design roadmap.

## Discussion

This section discusses some implications of the findings presented in the previous section, with an emphasis on the suggested concept of service design roadmaps. The following aspects of service design roadmaps are discussed; firstly, there seems to be a need for more research regarding the service design handover. Secondly, the distinction between a service design handover and the concept of a service design roadmap is suggested. The third aspect describes differences between a service design roadmap and a service blueprint.

### a. The handover is critical and requires further investigation

The analyzed interview material identifies the handover from service design consultants to the receiving stakeholders as a critical point in the later development phases. Neither the later phases of development nor the service design handover have been explored sufficiently in service design research. Furthermore, this study suggests that a service design roadmap has potential to be an important element of a handover.

As argued for by Yu, there is a need for research on “how Service Design processes and outcomes can be better linked with and integrated within the development stages of services to enhance more effective implementation” (2014, p. 202). Drawing on Yu’s reasoning and the coinciding analyzed interview results, I argue that there is a need for further exploration of the handover, and of the concept of service design roadmapping, as contributions to research of the later service development phases.

### b. A service design roadmap can be an important component of a handover

In order to clarify the concept of a service design roadmap, this paragraph describes its distinction from service design handovers. The service design handover is an overarching concept, describing all interactions of knowledge transfer, continuously through a process, to the point when the consultants leave. By knowledge, I mean generated information, insights and results. The handover consists of both activities and deliverables. The concept of service design roadmapping on the other hand, can be seen as a strategic planning process aiming to prepare the receiver for the process after the consultants have left. The outcome of this process is the service design roadmap, which might support clients to use handover deliverables further, after the service design consultants have left. In other words, a service design roadmap can be *one* of several service design handovers, while a service design handover does not have to contain a service design roadmap.

### c. Service design roadmaps and service blueprints

A service blueprint typically specifies the currently offered service or a desired service process, and the focus lies on making the service concept as concrete as possible (Bitner et al., 2008). Bitner et al. suggests that the final challenge of a service blueprinting process is translating the blueprint into detailed implementation plans (2008, p. 5). I argue that a service design roadmapping approach may support this transition. I am suggesting that a service design roadmap might function as a *detailed implementation plan*, by depicting not only the desired service, but also recommending how to get there. To sum up, while the focus of service blueprints is the desired service, the focus of a service design roadmap is the implementation process.

## Conclusions and further work

By focusing on the service design handover, this paper contributes to an understanding of the later service development phases, where there is still much room for service design research. The inquiry of the handover led to the question: How can one support development teams receiving service design handovers, to make use of this material in the later process phases? Based on the findings from the analyzed interview and observation material, I suggest that the concept of a service design roadmap, which might have potential to support development teams in the later phases. Two relevant directions for future work related to the concept of service design roadmaps are:

a.) *exploring the taxonomy of a service design roadmap*. My suggestion of a service design roadmapping approach opens up further new questions: which steps and activities should a service design roadmapping contain, in order to develop a relevant service design roadmap? Which elements should a service design roadmap contain? When exploring these areas, it is highly relevant to draw on expertise from design consultancies in combination with relevant theory from other disciplines, such as the technology roadmapping approach (Phaal & Muller, 2009);

b.) *exploring the relationships between a service design roadmap and user insight drift* (Almqvist, 2017). Research studying user involvement in the later phases is so far limited. Drawing on this I argue for the importance of exploring the representation of user insights in service design roadmaps, as a means to support keeping a user centered focus throughout the process. Moreover, exploring how service design roadmaps might support development teams to avoid drifting away from identified user needs during later process stages, a notion I describe in a previous study as *user insight drift* (Almqvist, 2017).

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# Weaving the threads: Service innovation with textile artisan communities

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## Abstract

This paper reports on a participatory case study conducted for a doctoral research project, investigating how service design can be used to activate textile artisan communities to transition towards a sustainable future. Using multiple service design and co-design methods, a meaningful intervention was activated within the context of a textile artisan community in Cape Town (South Africa). The service designer elicited tacit knowledge into compelling narratives and facilitated a process of making sense of sustainable futures. As a result, the artisans joined together as a community, with the common purpose of sharing information throughout the supply chain and making it accessible through a service platform. In conclusion, this paper discusses the diverse roles the service designer can play in order to activate meaningful social innovations with communities and outlines the limitations of this case study as well as recommendations for further research.

**KEYWORDS:** community-centred design, situated services, sustainable futures, social innovation, textile artisan community

## 1. Introduction

We are witnessing an increased interest in artisanship as a more meaningful and sustainable approach to design, production and consumption. Artisanship has emerged as an economic activity, grounded on the personal identity and material culture of artisans, who use locally available resources to make, by hands or directly controlling machinery and digital tools, small batches of culturally and socially significant artefacts. However, artisans often find themselves working in an isolated and precarious economic condition (Scrase, 2003), being placed at the 'bottom of the pyramid' of an ecosystem, which has proven unsustainable in terms of livelihood, cultural heritage, social equality, and environmental stewardship. To alleviate this problem, 'top-down', 'one-size-fits-all' strategies have been deployed, but they have often resulted ineffective in addressing the specific needs and aspirations of diverse local communities (Ostrom, 1990). Instead, thanks to its human-centred, strategic and systemic strength (Blomkvist, 2010), the contribution of service design for social innovation is gaining currency and recognition, as a grounded and localised way to address social needs while also creating new social relationships (Murray et al., 2010). This has built momentum

for the service designer to adopt a ‘community-centred design’ approach (Manzini & Meroni, 2012) and activate a ‘community of practice’ (Wenger, 1998), i.e. a group of people driven by shared motivations and goals and engaged in a participatory process of development within a sociocultural context. However, this also poses challenges as it requires the service designer to embrace new methods of community engagement, as well as hybrid forms of organisation (Penin et al., 2009).

Within the heterogeneous service design discipline, the research project presented in this paper is aligned with the evolution of the field and its latest shift towards ‘designing for service’ (Sangiorgi & Prendiville, 2017). This implies an on-going and participatory approach to innovation, focused not on the design of touchpoints, blueprints, or servicescapes, but on the value co-creation system, and the creation of complex sociomaterial outcomes (Kimbell & Blomberg, 2017). Moreover, this research adopts a design anthropological lens (Gunn & Donovan, 2012), and focuses on co-designing ‘collaborative services’ (Jégou & Manzini, 2008), developed by following a ‘social innovation journey’ (Meroni et al., 2017). Service design in this context is therefore moving away from ‘parachuting’ into communities using fixed tools, commoditised into a recipe transferable across contexts. Such toolkits are often separated from the skills of the practitioner (Akama & Prendiville, 2013), who conceptualises blueprints in an overly neat way, overlooking the social life and intangible issues of his/her designs (Blomberg & Darrah, 2014). With this in mind, this research addresses the need for a more situated and embedded approach to designing for service, entailing context sensitivity, elicitation of tacit knowledge, adaptation of methods to local contexts, as well as on-going and collaborative transformation (Sangiorgi & Junginger, 2015). The overall aim of this project was to investigate how service design can be used to activate artisans to join together as a community in order to transition towards a sustainable future.

## 2. Participatory Case Study

Building on the theoretical premises outlined above, an anthropological approach to service design was developed through engagement with a community of textile artisans in Cape Town (South Africa). South Africa was chosen as an exemplary context for co-designing social innovations with communities, inspired by the concept of ‘Ubuntu’ or ‘humanity towards others’, meaning a traditional form of self-reliance and mutual support (M’Rithaa, 2008). This broadly inspires the South African way of thinking and doing, grounded on values of empathy, participation, interactions, sharing, cooperation, and communication. Moreover, South Africa has a long and varied tradition in artisanship, and the government has recently invested in poverty alleviation through numerous initiatives to support artisans (Rhodes, 2011). In particular, Cape Town was chosen as sample of a textile-manufacturing cluster rich in material culture, with a design sector in rapid development (Paul Duncan Media, 2015), which, however, is affected by social inequalities, cultural appropriation issues, market competition and manufacturing challenges (Morris & Reed, 2008).

### 2.1 Methodology

Due to the exploratory purpose of this research, bounded by time and activity, case study was chosen as a qualitative methodology to investigate a contemporary real-life phenomenon in its actual setting and gather socially and culturally rich data (Yin, 2004). Furthermore, due to the emancipatory purpose of this project, the case was studied through a participatory design research approach (Simonsen & Robertson, 2013), consisting of the collaboration and mutual learning between the researcher and multiple participants in order to activate meaningful social innovations. This study encompassed five stages, as outlined in Table 1.

Stages	Objectives	Results
1 (Design Ethnography)	To conduct a scoping activity using methods drawn from ethnography in order to empathically discover the context around a service design intervention	Identified scope for the case study;  Refined plan for data collection;  Contact list of potential study participants.
2 (Storytelling)	To use storytelling in order to map the current state of the art of Cape Town textile artisans	Shared understanding of current state of the art of Cape Town textile artisanship; Photo-story documenting the artisans' current practices; Awareness of holistic sustainability issues.
3 (Sensemaking)	To use sensemaking methods in order to generate meaningful visions for the future	Visions for sustainable futures; Future trends reframed in relation to the artisans' realities; Ideas to achieve sustainable futures.
4 (Co-creation workshop)	To facilitate a co-creation workshop in order to engage artisans with the design of situated service propositions for a sustainable future	Opportunity areas for a service design intervention; Design directions towards a sustainable future; Reframed future direction; Map of stakeholders to support the future direction; Service storyboard to encourage the stakeholders towards the future direction; Social business model canvas outlining the service implementation; Shared values to be embedded into the service innovation.
5 (Roundtable Discussion)	To conduct a roundtable discussion in order to leave a legacy within the local community	Showcase of the outcomes of the project; Action plan for the service implementation; Shared understanding of the designer's role and local legacy.

**Table 1 – The stages of the study.**

### 2.1.1. Multiple Methods of Data Collection

Data was collected through multiple service design and co-design methods meeting the objectives of this research. An initial scoping activity allowed the designer to step into the community and identify a meaningful scope for the case study. Ethnographic methods (Salvador et al., 1999), such as participant observations and unstructured interviews, were used with thirteen stakeholders (i.e. artisans, retailers, educators, members of support organisations) within their work routines and spaces. Throughout this stage, field notes were written, reporting comments and insights while interacting with participants, paying great attention to contextual elements.

Storytelling (Bertolotti et al., 2016) was used as a method to collect the fragments of the artisans' past and current practices and weave them together into compelling narratives. This was conducted through contextual interviews in the workspaces of eight artisans, where materials, tools and environmental assets were regarded as prompts to trigger a comprehensive discussion around the artisans' work routines (Figure 1). A combination of observations and interview questions was used by the researcher, supported by four cards reflecting the four pillars of sustainability, i.e. society, culture, environment, economy (Walker, 2011).





**Figure 1 – Contextual interview with one artisan and cards used to aid the storytelling.**

Sensemaking (Klein et al., 2006) was used as a method to aid each of the eight artisans in exploring ‘what a sustainable future may look like for their businesses’. This encompassed three subsequent activities, supported by adapting tools – ‘framing’, ‘what if...’, ‘ideas generation’ (Stickdorn & Schneider, 2011) – and adopting ‘future trends cards’ specifically designed for the purpose of this study (Figure 2). Respectively, these tools enabled the artisans to frame their visions for a sustainable future, map out what would have happened to their businesses if some future trends occurred, and generate new ideas to inform the co-design of a situated service.



**Figure 2 – Templates and cards used to aid the sensemaking.**

A co-creation workshop (Stickdorn & Schneider, 2011) was conducted with ten textile artisans as an act of collective creativity (Sanders & Stappers, 2008). The purpose of this was to co-design a situated service proposition, with the support of seven tools adapted from various sources (Figure 3). The artisans were invited to collectively identify the key challenges and opportunities to achieve the envisaged sustainable futures. A template adapted from the ‘Frame Your Design Challenge’ tool (IDEO, 2015) was used to aid brainstorming around a design direction to be followed, taking into consideration the target beneficiaries of the innovation, the sociocultural factors shaping the problem, the evidence to support an investment in this direction, and possible solutions to the problem. The artisans then synthesised their diverse ideas into a future direction by using a given template, outlining a title, a brief description and a visualisation of how the innovation could work. In order to support the future direction, a ‘stakeholders map’ tool, inspired by the ‘Platform Design Toolkit 2.0’ (Cicero, 2016), was used to identify target stakeholders and prioritise among them according to their impact level into: (co)managers, (co)producers and (co)consumers of the service. At this point, a service storyboard template, adapted from Corubolo et al. (2016), was used to draw the key actions of the users’ journey, define the main challenges and opportunities, and design service features needed to fulfil them. Drawn from The Young Foundation (2012), a social business model canvas was then used to think and communicate the social impacts and business model behind the service. A manifesto was co-designed in order to outline the key values unifying the community and that needed to be embedded into the process of service innovation.

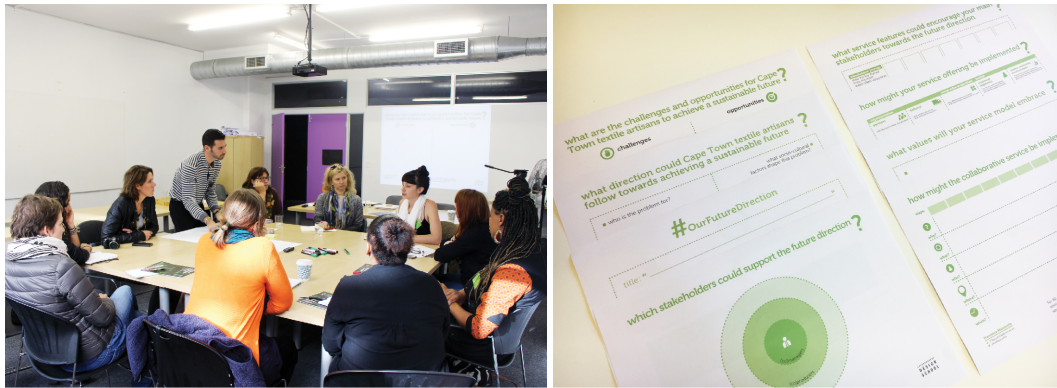


Figure 3 – Co-creation workshop and tools used to aid the co-design.

Finally, before the researcher left the community in Cape Town, a roundtable discussion was conducted as a ‘farewell activity’ (Meroni et al., 2013), encompassing a showcase of the outcomes of the project to a group of thirty-five stakeholders in order to discuss the possible implementation of the outlined service proposition.

### 2.1.2. Thematic Analysis

Throughout the case study, the data was captured in the form of notes posted on the given templates as well as photos and audio recordings, which were then transcribed. The audio transcripts were thematically analysed following a procedure that encompassed data reduction, display and conclusions drawing (Miles & Huberman, 1994).

The data collected through storytelling was analysed by using the coding system in Table 2. *A priori* themes (i.e. culture, society, environment, economy) were derived from the quadruple bottom line of sustainability (Walker, 2011). This led to the identification of sub-themes (i.e. identity, tradition, place, people, skills, materials, tools, making, sustainability, textile design, retail and communication). These were used to structure the findings of this research stage into a photo-book (hereafter called photo-story) documenting the artisans’ narratives.

Theme	Sub-theme	Description
Culture	Identity	Artisan’s profile, motivation, value proposition
	Tradition	Background, history, development
	Place	Cultural values, local identity and aesthetic
Society	People	Role, scale, approach to collaboration
	Skills	Expertise, training, innovation
Environment	Materials	Supplies of fibres/yarns/fabrics
	Tools	Suppliers, equipment, workspace
	Making	Production phases and volumes
	Sustainability	Life cycle, end-of-life, financial sustainability
Economy	Textile Design	Product types, product identity
	Retail	Cost, price, retailers, packaging
	Communication	Target customers, communication channels

Table 2 – Coding system for the analysis of the data collected through storytelling.

As per Table 3, from the analysis of the data collected through the sensemaking sessions the artisans’ visions for the future were derived; these were clustered around the sub-themes of cultural, social, environmental and economic sustainability. Moreover, the data captured through the ‘what if...’ tool was clustered in relation to eight future trends (i.e. redistributed manufacturing, flexible production, circular economy, alternative economies, slow fashion, advanced artisanship, designer entrepreneur, enabling ecosystem) resulting from a previous

study (Mazzarella et al., 2016). These trends were used as *a priori* coding, to then categorise the results into three sub-themes (i.e. now, near future, far future). The ideas for the future generated through the sensemaking sessions were clustered around sub-themes in relation to the future trends, and then prioritised according to the frequency of data.

Theme	Sub-Theme	Description
Vision	Culturally sustainable futures	Artisans' visions for holistically sustainable futures
	Socially sustainable futures	
	Environmentally sustainable futures	
	Economically sustainable futures	
Redistributed Manufacturing		
Flexible Production		
Circular Economy		
Alternative Economies	Now /	Trends reframed in relation to the artisans' current practices or (near/far) future possibilities
Slow Fashion	Near Future /	
Advanced Artisanship	Far Future	
Designer Entrepreneur		
Enabling Ecosystem		
Future Ideas	Making Skills	Ideas for the transitions towards a sustainable future
	Production Process	
	Supply Chain	
	Marketing Strategy	
	Consumer's Behaviour	
	Product Type	
	Business	
	Support System	

Table 3 – Coding system for the analysis of the data collected through sensemaking.

After the co-creation workshop, a process of thematic analysis was conducted using the coding system in Table 4. Themes were derived from the data collected through the templates (i.e. challenges, opportunities, design directions, future direction, stakeholders, service proposition, social business model, values).

Theme	Description
Challenges	Contextual factors hindering the transition towards a sustainable future
Opportunities	Contextual factors enabling the transition towards a sustainable future
Design Directions	Opportunities for reframing the problem into a viable design direction
Future Direction	Direction framed to encourage the transition towards a sustainable future
Stakeholders	Target stakeholders to support the chosen strategy
Service Proposition	Service features to enable the implementation of the future strategy
Social Business Model	Business plan of social enterprise supporting the service implementation
Values	Values shared by the community to assess the sustainability of the service

Table 4 – Coding system for the analysis of the data collected through co-creation.

Finally, Table 5 outlines the themes (i.e. aesthetic, technology, collaboration, promotion, legacy) that emerged from the data collected at the roundtable discussion.



Theme	Description
Aesthetic	'Glocal' style to embed into meaningful textiles
Technology	Tension between traditional handmade and digital technology
Collaboration	Synergies across stakeholders to address collective aims
Promotion	Collective exhibition for disrupting the status quo
Legacy	Local assets to facilitate follow-up actions

Table 5 – Themes derived from the analysis of the data collected at the roundtable discussion.

### 3. Findings

#### 3.1. The Challenging Context Around Textile Artisanal Businesses

Through the initial context immersion, it emerged that Cape Town used to be a textile-manufacturing cluster, but recently most of the production has been outsourced due to economic issues, and only a few fabric manufacturers are still active locally. Therefore, contemporary textile artisans struggle to find suppliers for their collections. On the other hand, resource constraints have mobilised local creativity and triggered artisans to start up businesses around printing on available base cloth in order to personalise and differentiate their textiles, as evidenced in local media (Figure 4).



Figure 4 – Local newspaper article documenting the raise of fashion artisanal businesses.

The context immersion identified deep social inequalities, rooted in the Apartheid, between the minority of white women (who are in a privileged position to start up artisanal businesses) against the majority of black artisans (living and working in 'townships', i.e. South African slums, at the 'bottom of the pyramid' of an unfair socioeconomic system). The scoping activity contributed to unpacking a series of social wicked problems, faced from the perspective of the unemployed (to enter the job market), black people (to overcome social inequalities), white business owners (to grow their businesses), social enterprises (to enhance their social impact) and the government (to improve its service provision). The participants discussed that co-designing a situated service would imply tackling cultural issues (e.g. racial segregation, competitive business mind-sets, consumers' appreciation of the handmade over the digital), a widespread sense of 'lack' (of supplies, manufacturers, customers, information, trust, employment), access (to capital, resources, training, infrastructures) and inefficiencies within the formal sector.

### 3.2. Potential Narratives of Collaboration Across Artisans

The following paragraphs give a brief snapshot of some of the eight artisans participating in the storytelling stage of the study (Figure 5).



Figure 5 – Textile artisans participating in the storytelling study in Cape Town.

Jane Solomon started her enterprise Fabricnation as a textile activist with the vision to shape a better fabric of the nation. Jane enjoys managing her business on her own, but she balances her isolated condition through building closer relationships with her customers, collaborating with graphic designer Jann Cheifitz, and shaping a network of suppliers and other members of the Craft & Design Institute (CDI).

*It is nice to be an independent entrepreneur, but you can feel quite isolated if staying on your own. For me, relationships are important, and collaborations are drawn out of necessity, shaped by myself. [...] Over a period of time, paying on time, being reliable and professional made a huge difference (Artisan).*

Natalie du Toit, designer and manager of Indigi Design, has always been committed to shape a relaxed environment to work in, with regular meetings to openly discuss any issues. Natalie highlighted the importance of surrounding herself with a network of trustworthy people, such as her business mentor and coach, but also other businesses and members of organisations.

*It has taken some time to build relationships within my team, but now I feel that everything is well put together. [...] It is important to have a support system and be in an always-learning place (Artisan).*

Tracy Rushmere manages on her own the business Shine Shine. The designs are developed in collaboration with Heidi Chisholm based in New York, and are produced by one trustworthy seamstress, who does the CMT (i.e. cut make trim) from her home in Cape Town. Tracy used to be a member of the Threadcount collective, a loosely-knit group of local businesses sharing supplies, production management and exhibition costs at the Design Indaba festival.

*The Threadcount collective was a good support system; if I needed information, she [Heather] would have given it to me, and vice versa. We shared whatever we needed (Artisan).*

Skinny LaMinx was funded by Heather Moore who, together with Pearl Thompson, created an in-house team of seamstresses and provided them with a pleasant space to work in. Skinny LaMinx is built upon long-lasting work relationships and a horizontal community, where everybody has ownership and responsibility over her own role and is given space to grow professionally.

*The important side of the business lies in designing and making, but also in being responsible for a lot of other people's livelihoods and having created a space where everybody enjoys working and feels invested in its story, with pride (Artisan).*

Overall, it emerged that the Cape Town's artisanal fabric is interwoven by a variety of independent and social enterprises working with larger communities. Their main challenge is finding local fabric manufacturers, as well as skilled CMTs, because the information is held by individualistic business mind-sets. On the other hand, the artisans identified an opportunity to share their knowledge and collaborate towards open innovation, contributing to making Cape Town become a reference hub for textile-making.

*The biggest challenge is finding people, because it requires a lot of training and mentorship. There are many organisations, non-for-profit and commercial ones, but they need systems and service design. Sharing information, online and for free, would make much sense (Artisan).*

### 3.3. A Collective Vision for Socioeconomic Flourishing

Throughout the sensemaking sessions, the artisans unpacked the concept of sustainability within their context. They expanded the sustainability discourse from conventional economic or environmental concerns to include also social and cultural meaning (Figure 6), in line with the latest understanding of the four pillars of sustainability. The artisans envisaged an opportunity for enhancing collaboration among individuals within their communities, and became motivated to take action towards community wellbeing, without feeling overwhelmed by wider environmental issues.

*For me, sustainability does not refer to cash necessarily, but to a future that keeps me stimulated as an artisan. It means stimulating myself to be happy, but also empowering other people, especially craftswomen, to sustain themselves economically (Artisan).*

The artisans framed their vision for making the local economy flourish in order to contribute to job creation and perpetuate heritage textiles into future generations, through a network of like-minded businesses and a wider support system.



Figure 6 – ‘Sustainable futures’ unpacked by the artisans through sensemaking.

### 3.4. The Co-design of a Community Service Platform

Providing a platform for the artisans to collectively discuss their visions for the future helped diverse businesses acknowledge that they all faced similar challenges. As a consequence, the usual resistance to collaborate and innovate was challenged, and trust relationships among the artisans were nurtured.

Building on the past experience of Threadcount and existing relationships, the artisans proposed reactivating the collective as a support system, in a more inclusive way. Instead of waiting for governmental aid and being reliant on external funding, the artisans recommended encouraging a synergy of ‘bottom-up’ initiatives among like-minded businesses and ‘top-down’ support into a ‘middle-up-down’ approach aimed at community resilience. Grounded on trust relationships, and using accessible digital technologies to enable communication, the collective was meant to grow organically. Therefore, a future strategy was framed around the development of a hybrid (i.e. physical and digital) platform to help textile artisanal businesses organically flourish, locally and internationally. The artisans, joined together as a collective and supported by an administrator, were placed at the core of the system. Other stakeholders (e.g. suppliers, educators, retailers, support organisations, consumers) were also mapped as service providers or users.

*If we get together, we make a force, an agency of textile artisans, to change other businesses that are not practicing in a sustainable way. [...] It is better to invest on long-lasting relationships grounded on good values, with everybody behind us, from top to bottom. [...] This requires a conscious effort, and then we let it grow organically through a ripple effect (Artisan).*

As an output, a collaborative service storyboard (Figure 7) was co-designed with the artisans, identifying their main needs and outlining service features to fulfil them. The proposed service was called ‘Weaving the Threads’, to denote that the platform was based on relationships and cooperation within a community of textile artisans.



**Figure 7 – Storyboard of the ‘Weaving the Threads’ community service platform.**

As a support process prior to setting up the service, the participants highlighted the need for gathering informed consents (e.g. under the Creative Commons open licence) contributing to establishing trust across the artisan community. As a backstage interaction, all the artisans were encouraged to open up their individual business knowledge and share their networks of contacts within the community. This was meant to constitute the basis for setting up, as a touchpoint, an open source database of information throughout the value chain to be accessible via a website and an application. The need for hiring an administrator was discussed to ensure a smooth collaboration across artisans through a middle manager of the community. The artisans suggested also the idea of setting up a blog to collectively showcase the makers behind the products, as a potential solution to the identified lack of consumers’ awareness. The offline dimension of the service proposition entailed quarterly meetings in the artisans’ studios for sharing experiences, as well as thematic events, such as collective exhibitions. They also identified the need for interactions through a shared salesperson at international trade shows in order to establish a ‘glocal’ market. While an activism campaign was proposed to be launched on social media to engage a wider community, annual



committee meetings were recommended as a strategy to discuss any conflicting agendas and ensure that the service innovation followed values shared among the artisans. The proposed model was that of a non-for-profit organisation – supported by crowdfunding and grants – co-creating value in terms of collective knowledge, local job creation, enhanced environmental stewardship, revitalised artisanal heritage and place-making. Although it is arguable that the outlined service proposition is not particularly innovative, the participants acknowledged that this was the solution that made the most sense within their context. In fact, it addressed the pressing need for knowledge sharing and contributed to overcoming the limited provision of services to support artisans, currently receiving only governmental aid. Finally, the artisans co-designed a manifesto as a call for acting responsibly and transparently, building trustworthy relationships and horizontal collaborations. They argued for diversity and individuals’ freedom of expression within a resilient support network, making community assets flourish towards a shared agenda.

### 3.5. Legacies Activated Within the Local Community

Through the roundtable discussion, the service proposition outlined by the artisans was presented to diverse stakeholders; therefore, other issues emerged around its potential implementation. The participants discussed the need for reframing the scope of the community around a core team of artisans bound together by both a ‘glocal’ aesthetic and on a shared business model.

*We have to find an aesthetic and a way of working, which makes us a collective. We can start with the people we want to work with, and then we let it organically grow. It would be a business collective rather than an aesthetic collective, since what would bind us together are business issues (Artisan).*

Through the field research, the key legacies activated within the local community are summarised below:

- Collaborations across businesses were shaped to optimise the use of resources (e.g. updating the platform [www.peek.org.za](http://www.peek.org.za) by including not only artisans but also suppliers and retailers).
- A potential enabler of the implementation of the service platform after the researcher physically exited the community was identified in a lecturer at Cape Peninsula University of Technology (CPUT).
- Online communication is on-going, to explore further collaborations (e.g. organising a hackathon to develop the digital platform).
- Building potential partnerships with British designers was investigated at the London Fashion Week 2016, in collaboration with MERGE ZA, i.e. a travelling showcase of contemporary South African fashion designers (Figure 8).



Figure 8 – Panel debate at MERGE ZA.

## 4. The Roles of the Service Designer

Beyond the contextual findings about Cape Town textile artisanship, the research highlighted the diverse roles the service designer can play in order to activate textile artisan communities to transition towards a sustainable future.

### 4.1. Cultural Insider: Situating Meaningful Interventions Within a Context

The project corroborated the need for the designer to be culturally sensitive to the local context when approaching a community, moving away from ‘parachuting’ into projects that do not grow or develop (Akama & Prendiville, 2013). Adopting a design anthropological approach (Gunn & Donovan, 2012) allowed capturing of contextual sociocultural factors mostly overlooked by ‘top-down’ organisations when designing services and strategies to aid diverse artisans. Going beyond the use of ethnographic methods to serve a merely documentary purpose in initial research stages, the project highlighted the diverse grades of participation of the socially responsible designer, who is summoned to go beyond ‘empathy’ (Cipolla & Bartholo, 2014) and become a ‘cultural insider’ by establishing a dialogical relationship with a community. To get access to participants the researcher sought a ‘gatekeeper’ – also framed by Morelli, 2015 as ‘community provider’ – and activated a human chain of contacts to recruit artisans motivated to take part in the study, making the community organically evolve.

### 4.2. Storyteller: Interweaving Fragments of Past and Present into New Narratives

The design researcher played both the role of a story-listener (Valsecchi et al., 2016) – here with an emphasis on eliciting the artisans’ tacit knowledge – and that of a storyteller (Tassinari et al., 2015), interweaving fragments of past and present practices into new and compelling narratives. Storytelling required establishing a researcher-participant relationship based on trustworthiness, openness and sharing. Four cards were developed to aid the designer in conducting contextual interviews, complemented by observations and photography in order to capture contextual insights, which would be otherwise overlooked in non-contextual interview settings. As an outcome, the intangible stories of the artisans were made tangible, by means of photographs and a diary-like text, in the form of a photo-story (Figure 9). Furthermore, the act of binding the artisans’ narratives together as one whole photo-story contributed to manifesting a shift from individual businesses towards a collective. Finally, in order to overcome the marginalised condition of the artisans, the photo-story was also used as an ‘engagement tool’ (Thorpe et al., 2016) to make the businesses known by a wider audience of stakeholders.



Figure 9 – Photo-story: cover and inner spread.

### 4.3. Sensemaker: Situating Visions for the Future into Local Realities

The project contributed to making a significant introduction of the concept of sensemaking – initially developed in organisational sociology (Weick, 1985) – into the field of service design for social innovation. Instead of adopting a disruptive or speculative approach, ‘designing anthropological futures’ (Smith et al., 2016) allowed overcoming the artisans’

resistance to innovate and building resilience within their heritage practices. The ‘what if...’ and ‘ideas generation’ tools designed for this purpose aided the artisans in mapping potential innovations, shifting from context-free and technical future trends towards situated and human-scale visions for the future. Challenging the passive attitude of the artisans waiting for ‘top-down’ aid, the researcher empowered them to become ‘agents of alternatives’ (Fuad-Luke et al., 2015) with increased awareness of the impact of their collective actions upon the shaping of social innovations. This is manifested in the photos of the participants holding posters framing their own visions for a sustainable future and shared on social media as an activism campaign (Figure 10).



Figure 10 – Artisans holding their own visions for a sustainable future.

#### 4.4. Facilitator: Crafting Situated Services

The fact that the designer was an ‘insider-outsider’ (Calvo, 2017) positively contributed to being perceived not as a competitor but as a facilitator, providing the artisans with a neutral space for addressing common challenges. Gathering people with different agendas together emphasised the political role of the designer (Mazé, 2014), here having to zoom out from specific short-term challenges and elicit opportunity areas across artisans for a long-term vision towards place-making. As a result, the artisans – previously working in an isolated and precarious condition – joined together as a ‘community of practice’ (Wenger, 1998) and outlined a situated service proposition. Figure 11 evidences the empowerment of the artisans, with the designer among them as a member of the collective that he facilitated to bring to life.

Building on Prendiville’s (2015) anthropological perspective on the concept of ‘place’, ‘situated services’ are defined here as services that are rooted in a locale and grounded in personal notions of time, that are tailored to the people using and producing them, embedding their local tacit knowledge and everyday practices within them. Furthermore, a process for ‘crafting’ situated services was developed. This requires the designer to be open to grasp cultural sensibilities, flexible to navigate uncertainties, and inclusive to engage local stakeholders both in the design of service outputs and in the process of co-designing them.





Figure 11 – The designer facilitator within the artisans' collective.

#### 4.5. Activist: Outlining Actionable Routes Towards Sustainable Futures

Going beyond the much-discussed role of facilitator, the role of the researcher in this project can be framed as that of a design activist (Fuad-Luke, 2009). This is not a new role for designers, but here the concept of 'slow activism' was borrowed from Pink (2015) and applied to a design process aimed at enacting cultural sensibility when entering a community and activating a slow process of meaningful and continuous transformation. Moreover, beyond the emphasis on the 'exit strategy' (Meroni et al., 2013) which is crucial in any social innovation projects, here the researcher aimed at activating 'legacies' within the local community. The researcher's focus in this project was not on delivering service outputs that bring closure to the designer's engagement, but on outlining actionable routes towards a sustainable future. Therefore, the outcomes of this process were less formal than commonly fixed service blueprints and more 'work-in-progress' such as the proposition of a service storyboard and a manifesto of values to be embedded into the service innovation process. Furthermore, building on Sangiorgi's (2011) theory of 'transformation design', this project confirmed the need for nourishing an enabling ecosystem based on both external 'mechanisms of involvement' of diverse stakeholders and on internal 'mechanisms of change' around shared values. With this in mind, the roundtable discussion facilitated towards the end of the case study was conceived as an engaging event for activating a 'middle-up-down' (Staszowski, 2010) form of collective management across diverse stakeholders.

## 5. Conclusions

This paper has outlined the diverse roles the service designer can play in order to activate artisans to join together as a community and transition towards a sustainable future. It has presented multiple service design and co-design methods (design ethnography, storytelling, sensemaking, co-creation workshops, and roundtable discussions) that can be adopted and adapted throughout a social innovation process and hopefully applied in other contexts. The paper has highlighted the need for the designer to be sensitive to local cultures and tailor his/her approach to specific contexts in order to craft situated services for sustainable futures. Using a design anthropological approach to entering a textile community in Cape Town allowed giving voice to artisans (who often find themselves in an isolated and precarious condition) and to interweave the fragments of their tacit knowledge into compelling narratives. Such an approach also contributed to empowering the artisans to start thinking about sustainable futures and framing visions meaningful to them. By turning their common challenges into opportunities for the future, the artisans felt driven to take a collective action grounded on values shared among the community. Adopting a 'middle-up-



down' approach (based on synergies between the 'bottom-up' initiatives of artisans and the 'top-down' support of organisations) also emerged as a way to make social innovations sustainable over time. Finally, the case study emphasised the importance for the designer to activate legacies with the local community for the artisans to progressively take ownership over the process of service innovation.

## 5.1. Limitations and Next Steps

In conclusion, there is scope for the design ethnographic activity to be refined with the support of a diagnostic tool aiding the designer's immersion in the context to gather key insights for scoping a meaningful intervention. In view of future work, the 'future trends cards' need to be refined by using simplified keywords and visuals. Iterative stages of prototyping are needed to co-design all the elements of the outlined service proposition. The issue of a 'middle-up-down' ecosystem to sustain social innovations requires further investigation. Finally, the implementation of the service implies time, resources and contextual factors that go beyond the scope of this case study, therefore assessing the impact of the social innovation is left open for future work.

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# The Coconut Innovation framework: An innovation framework focusing on resources

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## Abstract

This paper proposes a new innovation framework – the coconut innovation framework – using empirical data from WANIC Coconut Spirits developed in East Timor, the Philippines, and Laos, as well as drawing from theoretical work highlighted in a literature review. This innovation framework is a practical framework used to increase the probabilities of success of innovation by integrating the resources of developing countries and industrialised countries, creating new businesses, and expanding resources. This framework is composed of three phases. The first is the discovery of resources. After taking stock of your company's existing resources and discovering new resources, you can generate initial ideas to create a new business. The second phase is the integration of resources. By maintaining your company's identity and integrating the resources that you discovered in the first phase, you can design your new business. The third is the expansion of resources. By maintaining your company's identity and expanding the resources which your company and partners have, you can grow your business.

**KEYWORDS:** innovation, SDL, effectuation, framework

## Introduction

As Schumpeter (1934) and Drucker (1985) pointed out, innovation is one of the crucial issues in order for companies and economies to grow sustainably. Although there is much research on innovation type and innovation model (Paul Trott, 2011)(Keeley, 2013), there is less research on packaging the whole process to achieve innovation, and to propose it as a framework. Moreover, there is much less research on proving their concepts of frameworks.

Service Dominant Logic (SDL) is a theory to try to achieve innovation based on the business model proposed by Lusch and Vargo (2014). Under SDL, a company offers new value to their customers by exchanging services repeatedly, which is a process applying a variety of skills and knowledge through a service ecosystem composed of actors that have different

skills and knowledge. The more actors participating in the ecosystem, the stronger the values offered by the company.

The paper published by Vargo and Nambisan (2015) focuses on a new aspect of SDL as a theory for service innovation, and proposes three frameworks. As this paper indicates, SDL can be a much stronger theoretical base to achieve innovation. However, SDL is too abstract for users to create zero to one concepts, and too weak for companies to embed it into their practical activities. Towards these issues, this research can contribute as a framework to bridge the theory and its practice, and to package a design process to generate innovation as well as the tools and methods used in the design process.

Innovations are not only fabricated in industrialised countries but also in developing countries. Reverse Innovation (Govindarajan & Trimble, 2012) is a model used to achieve innovation in developing countries mainly by companies from industrialised countries, transferring them to industrialised countries. Frugal Innovation, in turn, is a model used to achieve innovation in developing countries mainly by local companies with limited resources. However, while these models still work as principles, they remain weak in terms of their practical aspects.

The contribution of this research is to develop an innovation framework to bridge theories and practices overcoming issues which prior works have. For example, this framework aims to develop a service ecosystems by focusing on resources of developing countries and industrialized countries, and integrating them. Thus, the users can achieve innovation utilizing merits which each has. Moreover, this framework aims to develop a repetitive design process in order to expand resources, and package tools and methods for this design process.

The contribution of this research is to develop an innovation framework to bridge theories and practices, overcoming the issues which prior works have displayed. For example, this framework aims to develop service ecosystems by focusing on the resources of developing countries and industrialised countries and integrating them. Thus, the users can achieve innovation utilizing merits which each has. Moreover, this framework aims to develop a repetitive design process to expand resources and package tools, alongside methods for this design process.

## Literature Review

Design Thinking proposed by IDEO, a design consulting firm in the US, is a framework to develop concepts of products or services (Brown, 2008). Design Thinking acquires empathy to customers via fieldwork, and collects data to develop concepts. Also, it generates many ideas through brainstorming, and visualizes and refines the concepts through prototyping. Design Thinking emphasizes diversity, and aims to increase the possibilities to generate innovation by bringing together a variety of specialists to collaborate on a project.

Design Thinking by IDEO was customized for the developing world by IDEO.org which is a subsidiary of IDEO, and published as the HCD Toolkit (IDEO.org., 2015). Most of the tools in this framework are used in the design process of Design Thinking or qualitative research methods, but some of them are customized for usage in the developing world. For example, Holistic Impact Assessment is a tool to indicate the positive and negative effects that solutions may cause considering the social and environmental aspects.

D4S (Diehl & Crul, 2009) by the Design for Sustainability Program at TU Delft IDE and UNEP is a design framework for designing products for emerging markets, new product development, and product service systems. The key feature of D4S is Sustainability. This Sustainability has three meanings – Social, Environmental, and Economic – corresponding

to Sustainability for People, Planet, and Profit. The design process of D4S has four steps: Policy Formulation to define the goals and strategy of projects, Idea Finding, Strict Development, composed of marketing planning, produce design and product development, and Realisation, including manufacturing, distribution and utilisation. Each step contains more detailed sub-steps.

BOP Protocol developed by Simanis and Hart (2008) at Cornell University is a model for Business Co-creation for BOP by multinational companies. The feature of the BOP Protocol is Co-Creation. They advocate change from BOP 1.0, with a model of Selling to the Poor, to BOP 2.0, with a model of Business Co-Venturing, and emphasise Co-Creation as the approach. The BOP protocol has three processes: The Pre Field Process to specify target sites and select a team and local partners, The In Field Process, and Scaling Out. The In Field Process has three sub-processes: Opening up, Building the Ecosystem, Enterprise Creation.

The Market Creation Toolbox (Larsen, Louise, & Flensburg, 2011), developed by BOP Learning Lab at Danish Industry, is a framework to develop business models in developing markets. The key feature of the Market Creation Toolbox is participatory design. The design process of Market Creation Toolbox has seven processes: Rapid Market Assessment, Customer Base and End-Users, Including End Users, Distribution System, Pricing and Financing, Marketing and Communication, and Service and Maintenance.

These innovation frameworks have inherent issues related to structured methods, as pointed out by Radjou, Prabhu, & Ahuja in Jugard Innovation (2012). It is impossible to flexibly adapt them to situations with extremely high uncertainty, which the developing world contains, because they are frameworks based on a linear process. In the case of linear processes, if some premises for value proposition developed in the early stage of design process have been lost in the implementation stage of the design process, the users cannot adapt to this difficulty. Hence, a framework is needed to be implemented which reflects high uncertainty in the developing countries.

Although Design Thinking by IDEO focuses on industrial design and interaction design, design firms in Europe are focusing on service, which is called Service Design Thinking (Stickdorn & Schneider, 2012). Service Design Thinking not only involves customers and users in the design process, but also designs service ecosystems that include all the stakeholders.

SDL is a theory which focuses on service as the basis of an economy in which an actor applies their skills and knowledge for the benefit of other actors. Lusch and Vargo focus on achieving value creation through relationships with partners, which is called the service ecosystem. SDL distinguishes between operand resources which require specialized competences in order to offer values and operant resources which can serve other resources in order to create values; the latter is regarded as a source of competitiveness. Based on SDL, resource integration in the service ecosystem can create values.

Sarasvathy likewise seeks the source of innovation in resources (2008). Sarasvathy tried to find a behavioural logic among expert entrepreneurs through a think-aloud verbal protocol. As a result of tests, she found 5 principles. The 1<sup>st</sup> starts from means and creates something new. The 2<sup>nd</sup> decides an affordable loss, and starts projects. The 3<sup>rd</sup> emphasizes commitment from all stakeholders. The 4<sup>th</sup> uses contingencies. The 5<sup>th</sup> focuses on the aspects that they can control in an unpredictable future. She calls this logic Effectuation. Based on Effectuation, by increasing a number of usable resources including partners, the purpose of projects will be converged, and then achieve innovation.

The innovation framework proposed in this paper uses SDL as a theoretical background, inherits the iteration process which SDL does not consider and the more detailed classification of resources from Effectuation, and develops the whole design process. In

addition, the framework adopts fieldwork, prototyping and testing in the context of Design Thinking and Service Design Thinking, and partnership in the context of Effectuation as a tool to expand resources.

## Case Study – WANIC

The fruit wine fermented from coco water inside a coconut using the coconut shell as a container is called Fresh WANIC. This 7% alcohol beverage retains the flavour of coco water with exhilaration and briskness and freshness (Figure 1). The 7% alcohol content is the same as an average wine, but it is much easier to drink in spite of the alcohol content. In this paper, WANIC describes the product and Wanic the project.



Figure 1. Fresh WANIC

The Wanic project began with fieldwork conducted in East Timor in 2010. The birth of the project dates back to a product design contest held in 2010. The concept of the contest was challenging because participants were asked to conduct fieldwork in East Timor, and design a product to solve the issues of the local people.

The organizers of the contest selected each team member. Our team was composed of a variety of members from different backgrounds, such as a product designer who had experience of designing medical devices, a graduate student who majored in social entrepreneurship and a policy secretary with a medical licence. The author specializes in service design and participated in this contest with a strong interest in social innovation as well as a philosophy that we should offer not money and material goods but knowledge in order to solve issues in the developing world.

We identified coconuts as the resource through our fieldwork in East Timor. In East Timor, the land was devastated by the war for independence that lasted 25 years, and the infrastructure has not been repaired. There are limited resources as they do not have sufficient technology and human resources to use those technologies. However, we found a resource during the fieldwork – a large amount of unsold coconuts that were piled in a truck parked in a street near the coast.

Coconut is a resource which can be used to create a variety of products. For example, the solid endosperm known as Coco meat can be used to produce coconut milk or coconut oil. The soft fibre area of the coconut shell known as the coconut husk can be used for bags or baskets, and the hard hull area can be processed as a medium for hydroponic cultivation called Coco peat after being crushed and heated. A coconut trades for less than 1 USD but can be used as a resource to generate high value added products.

In addition to this resource, we found an issue that the local people lack a cash income. Except for oil, the main industry in East Timor is agriculture, which means that the local people have less opportunity to earn cash. They require the necessary cash in order to invest in education, clothing, food and housing. The creation of new industries is a national issue in East Timor. We conceived the concept of Fresh WANIC by combining the issue of low cash income and coconut as an abundant resource, employing the philosophy, identity, skill and knowledge of each member.

When we designed the customer experience of WANIC, we started to define our customer. The customers of Fresh WANIC are the local people in East Timor who want to increase their cash income. Their issue is shortage of cash income, and we designed the WANIC Toolkit and the recipe for Fresh WANIC, a coconut wine made from coco water, in order to solve this issue.

We targeted wealthy people in industrialized countries as the clients' customers. We supposed that they would not have any interest in Fresh WANIC made from coco water not only because coconut and coco water are so popular and cheap, but they are also accustomed to drinking Tuba, which is made from coconut sap at very low price. On the other hand, we supposed that they have a special interest in Fresh WANIC because coconut is not only a symbol of exoticism for industrialized countries, but also coco water and coconut oil have had a positive impression on their skins or health.

We designed a prototype service ecosystem for Fresh WANIC with such a kind of customer experience. In an ecosystem in the natural world, a variety of actors have connections with one another, making up a system where each depends on another to survive. The service ecosystem is a system which is composed of a variety of actors and where each actor provides a different service in order to offer new value to the customer.

The main actors in the service ecosystem of Fresh WANIC are Fresh WANIC makers, WANIC Toolkit makers and coco firms. WANIC Toolkit makers produce WANIC Toolkits and sell them to Fresh WANIC makers. Fresh WANIC makers buy coconut from coco firms, produce Fresh WANIC using the WANIC toolkit and the recipe, and sell them to restaurants, bars and hotels where there are people from industrialized countries (Figure 2).



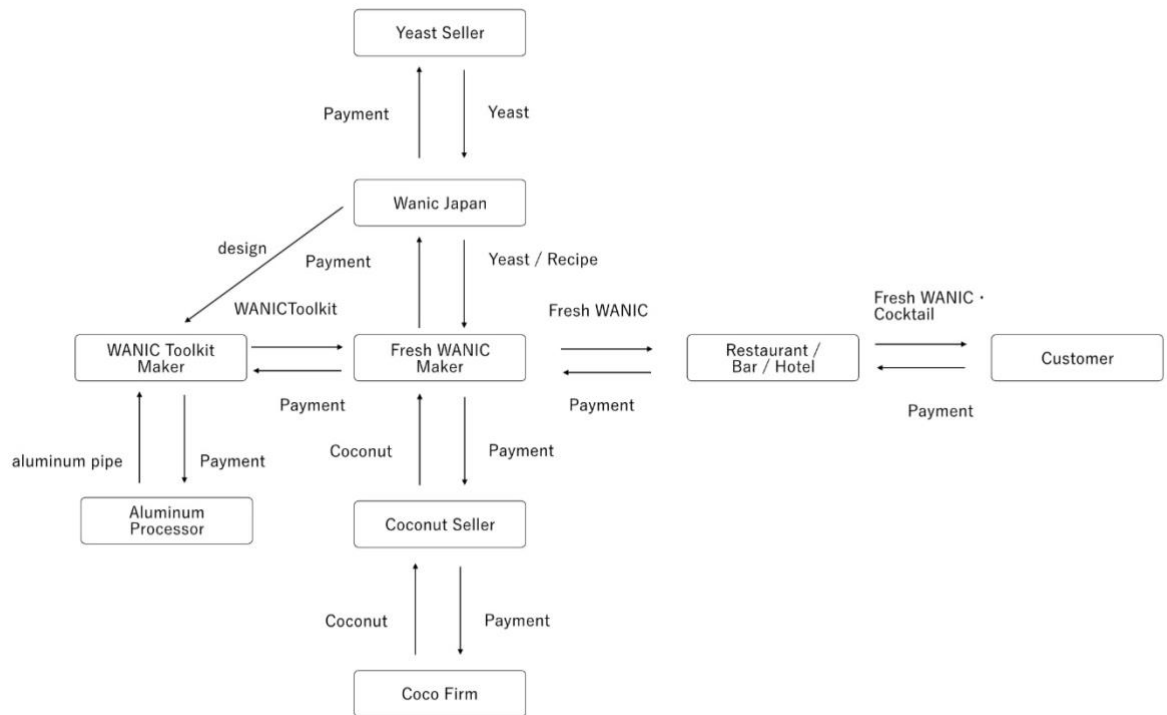


Figure 2. Service ecosystem of Fresh WANIC

Our team Wanic Japan designed a business model for this service ecosystem with the purpose to increase the cash income of the local people. We adopted a model to acquire revenue by publishing the blueprint of the toolkit free for the WANIC Toolkit makers, and selling high quality yeast, which the local people find difficult to obtain.

After designing the prototype of the concept, customer experience, service ecosystem and the business model of the new product in the process above, we tested them on our customers, acquired feedback from them, and revised these prototypes.

The most difficult part during prototyping and testing was the quality of Fresh WANIC. Tuba made from coco sap has a sour and unstable taste that can hardly be described as delicious. Even if Fresh WANIC is the world's first wine made from coconut water, the quality is not so unstable that we cannot deliver excellent customer experience. After we found a new partner, LAODI, a rum producer, we refined the production process with thorough quality management and developed a new product, WANIC Coconut Spirits.

WANIC Coconut Spirits is a new spirit made from coco water. You can taste the slight sweetness and flavour of coconut in the throat. This 42% hard spirit can be sold in Japan (Figure 3).

After developing coconut spirits, we changed our customers from the people FROM industrialized countries to the people IN industrialized countries. The products are shipped from Vientiane where our partner LAODI has a distillery to Tokyo. We aim to develop a partnership with restaurants and bars around Tokyo, and to deliver WANIC via these channels.



Figure 3. WANIC Coconut Spirits 2015

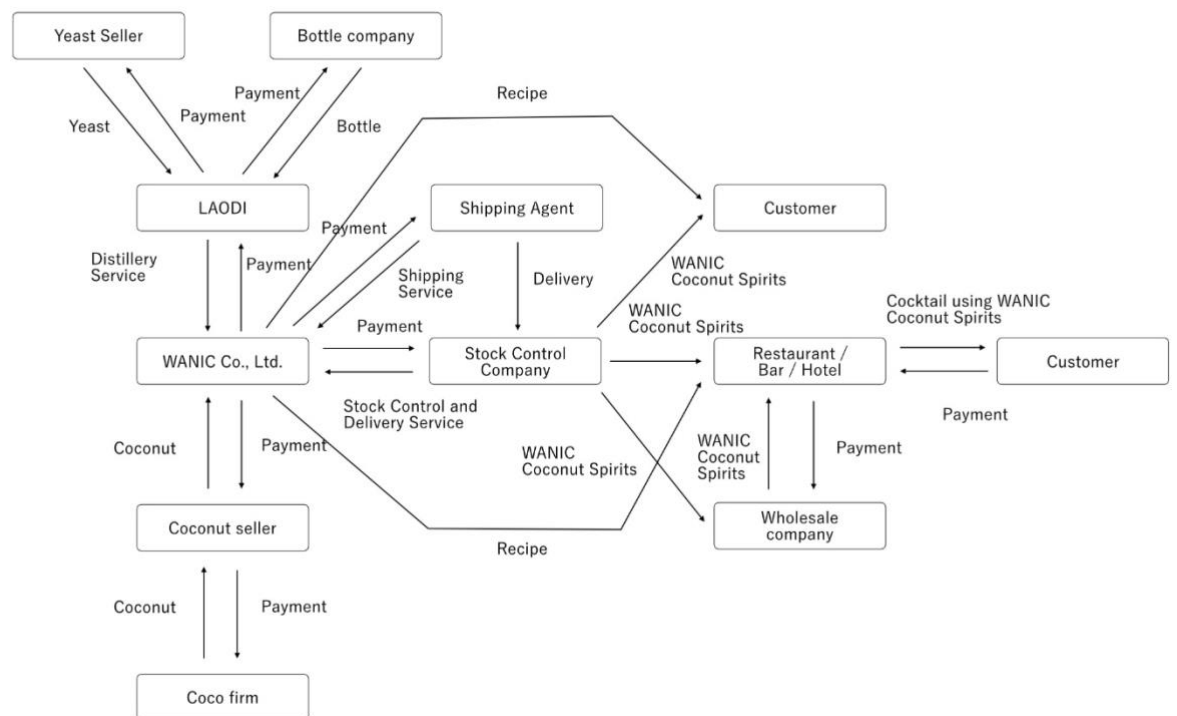


Figure 4. A service ecosystem of WANIC Coconut Spirits in Laos

After developing WANIC Coconut Spirits, we updated our service ecosystem (Figure 4). This service ecosystem comprises the main actors such as Wanic Co., Ltd., coco firms and



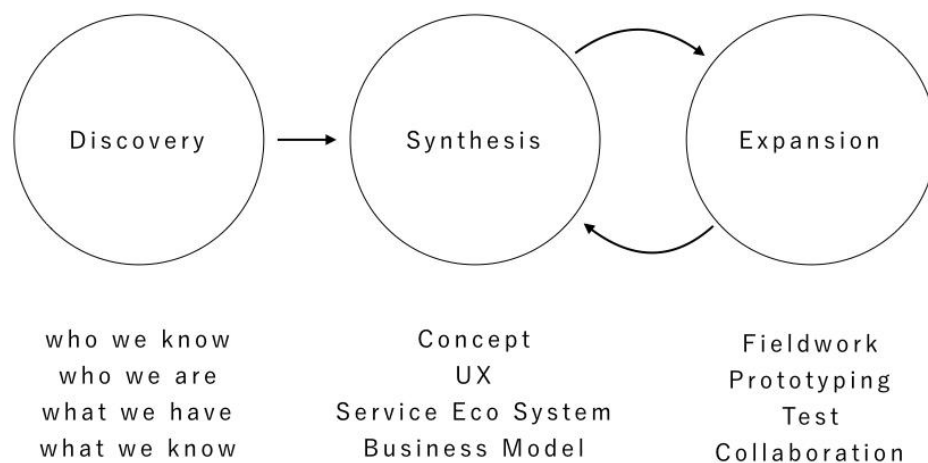
posted several articles to our website using these new resources, and created several ads with them for the ad network.

## The Coconut Innovation Framework

The author proposes an innovation framework based on the background theories in the literature review, and the case studies.

Coconut Innovation is an innovation that a company creates new industries with a variety of resources. First, it takes stock of its own, its partners' and local resources, and discovers new resources via fieldwork. Then, it integrates them, and offers products with new value to their customers. Also, it refines the products, makes them more attractive and increases value by expanding resources through fieldwork, prototyping, testing and partnership.

The theory to create Coconut Innovation draws on the coconut innovation process that is made up of 3 phases, 4 design targets and 4 design tools (Figure 6).



**Figure 6. Coconut Innovation Process**

The 1<sup>st</sup> phase is the discovery of resources. The goal of this phase is to discover resources to design new products to generate Coconut Innovation. The products to generate Coconut Innovation are not created by the inspiration of geniuses. They can be designed by taking stock of current resources, discovering new resources, analysing them step by step, and integrating them. The quality of products strongly depends on the resources which can be integrated. Therefore, it is necessary to discover appropriate resources based on appropriate methods.

The 2<sup>nd</sup> phase is the integration of resources. The goal of this phase is to establish the initial values of 4 design targets to generate Coconut Innovation. Your team has already taken stock of the current resources, and discovered new resources. By integrating all of them as resources and identifying design opportunities, you design the initial values of the concept, customer experience, service ecosystem and business model of new products, which offer new value to customers' issues.

The 3<sup>rd</sup> phase is the expansion of resources. The goal of this phase is to update the 4 design targets, concept, customer experience, service ecosystem and business model, which have been designed after phase 2. Just after phase 2, these 4 design targets only have their initial values. By expanding the resources, you can update them, and then revise the value

proposition to the customers. You can use the 4 design tools to update these 4 design targets.

The 1<sup>st</sup> tool is partnership. Partnership has two functions. The 1<sup>st</sup> is to expand resources that can be used in the value proposing process based on the services that the partners can offer. The 2<sup>nd</sup> is to converge the directions of the new products as the relationships among the partners can work as constraints.

The 2<sup>nd</sup> tool is fieldwork. Not only in the 1<sup>st</sup> phase but also in the 3<sup>rd</sup> phase, you can use fieldwork. In the 3<sup>rd</sup> phase, you have already discovered design opportunities, so the purpose here is different. This is because you discover new resources, which can be used in the value proposing process, and you find contexts where customers feel much more valuable when the customer uses the new products.

The 3<sup>rd</sup> tool is prototyping which has two areas. The 1<sup>st</sup> is to visualize concept and customer experience. By having the concept experienced by the customers, you can decrease uncertainty. The 2<sup>nd</sup> is to design media to deliver the new product to the customers. Via media, you make the customers aware of the products and develop a relationship with the customers.

The 4<sup>th</sup> tool is testing. It is not necessary to design a variety of prototypes with the 3<sup>rd</sup> tool because the values can be created when the customers use the prototypes. The resources obtained during the value co-creation process will function as new resources when teams or partners receive feedback, and then these resources will be used for the next prototypes.

With these 3 phases, you take stock of the current resources and discover new resources, and then integrate them. Next, you design prototypes of the 4 design targets as initial values of the innovation process. Then, you will converge the purpose and generate new business by iterating resource integration and discovery with partners and customers. This is the whole Coconut Innovation process.

## Discovery of Resources

The 1<sup>st</sup> phase of the Coconut Innovation process is the discovery of resources. This phase is composed of 3 steps: taking stock of resources, discovery of resources and organization. Following these three steps, you can establish the initial values of the products to create new business.

### *Taking stock of Resources*

You start by taking stock of your company's and current partners' resources. The resources here are distinguished in 4 sections.

#### a. Who we are

Who we are means what is your philosophy and identity. First, you start to write down your identity and philosophy at the management level or team level. The philosophy and identity written here can function as a constraint condition to proceed your project, and work as conditions to compose the brand of the product that you are designing.

#### b. Who we know

Who we know means partners as operant resources. Partners here stand for companies, customers, experts and channels that will commit to your project in some way. After bringing together the current partners, you can organize operant resources and operand resources that the partners have.

#### c. What we know

What we know means the skills or knowledge as operand resources. You will start to write down your company's skills and knowledge as well as each member's skills and knowledge.

#### d. What we have

What we have means the operant resources including those your partners have. You can include materials, machine tools, products and real properties in these resources. Also, it is important to decide an affordable budget for your projects.

The resources which you list are the initial values for the project. By keeping the initial value on philosophy and identity of your team or company, you can maintain the brand. However, you should expand the other resources to grow your project. By expanding resources, you can not only increase the quality of the value that you offer, but also converge the goal of the project.

### ***Discovery of Resources***

You can use one of the tools, fieldwork, in order to discover resources. Fieldwork here includes three methods, desktop research, observation and interviews. The resources which you want to discover are diverse, and the objectives of fieldwork are also different. Here we will introduce 4 primary objectives of fieldwork, and resources that you should discover.

#### a. Discovery of the research agenda

The 1<sup>st</sup> objective is the discovery of research agendas. The meaning of research agendas are the issues which are listed in particular as research targets for fieldwork among so many phenomena. Discovery of this resource is conducted mainly via desktop research.

#### b. Discovery of design opportunities

The 2<sup>nd</sup> objective is the discovery of design opportunities. Design opportunities mean those that offer new values by designing products. You can discover design opportunities by investigating the targets selected by research agendas. Discovery of this resource is conducted mainly via observation and interview.

#### c. Discovery of operand resources that can be used for the value proposing process.

The 3<sup>rd</sup> objective is the discovery of operand resources which can be used for the value proposing process. By integrating the resources, you can offer new values to design opportunities. The resources here that you can integrate are the operand resources which your company and partners have as well as the operand resources related to design opportunities which you can discover in the fieldwork. Discovery of this resource is conducted mainly through observation.

#### d. Discovery of operant resources that can be used for the value proposing process.

The 4<sup>th</sup> objective is the discovery of operant resources which can be used for the value proposing process. New operant resources especially are needed when the issues that should be solved are apparent after discovering the design opportunities. As new operant resources have not existed in the current network of your company, you have to discover new partners through fieldwork. Discovery of this resource is conducted through observation and interviews.

### ***Organization of Resources***

At the 3<sup>rd</sup> step, you should organize the resources that you can use after discovering the new resources. By comparing the resources which you brought together in the 1<sup>st</sup> step, you should confirm how the resources were expanded. When you organize all the resources, you will integrate the resources, and then develop new concepts to offer a new value proposition in order to create new business.

When you organize the resources, you will put the new resources, which you discovered except for philosophy and identity, into tables by comparing operant resources and operand resources of your company and partners.

#### e. What we should do

What we can do means that the list of ideas of new value proposing with the constraint condition of the operant resources and operand resources, which your company and partner have, while maintaining your philosophy and identity. These ideas are totally different from free ideas that you generate through brainstorming without any constraint conditions. The ideas are generated through inheriting your company's philosophy and identity, and integrating usable resources which you have, so they are logical and inevitable ideas. As long as you can list items for "what we should do", you can move to phase 2.

## **Integration of Resources**

The 2<sup>nd</sup> phase of the Coconut Innovation Process is the integration of resources. The goal of the 2<sup>nd</sup> phase is to establish the initial values of 4 design targets by integrating resources which you brought together and discovered in the 1<sup>st</sup> phase. These 4 design targets are concept, customer experience, service ecosystem and business model. You can design them simultaneously, but it is much easier to design in this order because customer experience premises concept, service ecosystem premises customer experience, and business model premises service ecosystem. Thus, the author introduces them in this order.

### ***Concept Design***

In the case of the design concept of new products to create new business, you should consider it from two viewpoints.

#### **a. Customers' Issues.**

The 1<sup>st</sup> viewpoint is customers' issues. The issues target customers' pains, frustrations and so on. At the initial value of concept, the image of the customer might be vague. However, when you refine the concept, the image of the customer will gradually become more concrete while you expand resources by the participation of potential customers in the design process.

#### **b. Value Proposition by Company**

The 2<sup>nd</sup> viewpoint is value proposition by company. In the SDL theory, value cannot be created only by companies. Only when the customers receive the value proposed by the company, and experience them, will the value be created. This is the standpoint that values can be recognized phenomenologically. Based on this viewpoint, companies are just actors to propose values, and values can only be created with the experiences of customers. Thus, values are co-created by customers and companies.

## ***Customer Experience Design***

After designing the initial value of the concept of new products, you have to refine the concept, and design the customer experience of the product. The tools to design attractive customer experiences are Persona and Story.

#### **a. Persona**

Persona is the model of the customers who will use the products, and are described in the document (Cooper, 2008). By defining the Personas, you can design concrete customer experiences. Namely, you can design stories of what kind of experience you will offer and how customers with specific attributes will react.

#### **b. Story**

In the case of most of the design methods, you will describe the story for customers when you design the story. However, in the case of the Coconut Innovation Framework, you will describe stories with two viewpoints: that of the customers and of the companies. By describing from both sides, you can completely extract a variety of elements, which are

needed when companies offer values, customers receive them, and the value is co-created. The elements will be used to design service ecosystems.

### ***Service Ecosystem Design***

After designing the initial values on customer experience of new products, you will design the service ecosystem in order to deliver customer experience based on the elements listed when you designed customer experiences. The service ecosystem should be designed at 3 levels: micro, meso and macro.

#### **a. Micro System**

The micro system is one where a small number of actors exchange services. For example, you should design a system composed of relationships among companies that offer values and customers who pay for the offering.

#### **b. Meso System**

Meso system is a group of a variety of actors composed of specific approaches to solve issues. Although multiple micro systems make a meso system, the meso system has an influence on each micro system.

#### **c. Macro System**

The macro system is a stable system made up of multiple meso systems. As a meso system has influence on micro systems, a macro system has influence on meso systems.

When you create a new macro system, you will design the culture and society that you want to generate through new products. They must be deeply connected to your team's philosophy and identity. Simultaneously, existing macro systems may have an influence on your team's identity and philosophy.

### ***Business Model Design***

After designing the initial values of a service ecosystem to offer new products, you will design a business model in the final step of this phase. You have already designed the relationship among the actors when you designed a service ecosystem. Based on this relationship, you design a business model about how and where you will generate revenue and profits with 4 steps.

#### **a. Cost**

After implementing prototypes of new products with your partners, you make a list of the necessary costs.

#### **b. Revenue Model**

After designing a service ecosystem and listing the total cost, you have to confirm your revenue model. Through the model, you will be able to predict how much profit you can earn after you launch your products.

#### **c. Market size**

You can estimate market size even if you develop a product in a new category. You need to confirm market size and the future potentiality of your business by specifying compelling data to help the management level of your company to judge the final decision for launching the new business.

#### **d. Business Planning**

Based on cost and revenue models, you design business plans over multiple years. As it is apt to be short of budget during the first and second years, you should plan them on a monthly basis. If you design several patterns of business plans based on the best and worst cases, you can grasp each break-even point according to the speed of expanding your business, and



then you can confirm how long you can spend to collect the initial cost or how much money you need to invest

This phase generates the initial values of concept, customer experience, service ecosystem and business model of new products with constraints of your company or team's philosophy and identity by integrating the resources that you discovered in the 2<sup>nd</sup> phase. You remember that these are just the initial values of the 4 design targets. The goal is to generate new business, and you have to expand your resources and update your means towards the goal.

## **Expansion of Resources**

The final phase of the Coconut Innovation process is the expansion of resources. This phase will have continued until the project ends after you have integrated the resources and established the initial values of the new products. During this phase, you will launch the products. You will update the values of the products by expanding resources after the release.

This phase uses 4 design tools, partnership, fieldwork, prototyping and testing in order to expand your resources. You can use them simultaneously or separately. For example, you will frequently offer prototypes to your customers as well as partners during a fieldwork and conduct testing of the prototypes in order to expand resources.

### ***Partnership***

The 1<sup>st</sup> tool is partnership. Through partnership, you can not only expand resources, but also converge the directions of the products by using the relationship with your partners as constraint conditions. If you do not have any partners, you have no guiding power toward any directions, and uncertainty toward any direction has not changed, which leads to an isotropic state. However, with partners, uncertainty toward a direction will have bias. Here, the author introduces 4 types of partnership.

#### **a. Potential Customers**

You can expand resources by involving potential customers in the design process because they work for value co-creation.

#### **b. Technical Partners**

Technical partners will be needed to transfer your prototype of the products to the launch version. For example, if a company has functions and specifications which your company cannot achieve, or a company has some technology to cut the total cost of the products, you can shorten the whole development time or increase the quality of the products with this kind of company.

#### **c. Design Partners**

Design Partners will be needed when you release the product after implementing the launch version of the product. For example, Design Partners are in charge of the design language such as body, packages, logo, customer experience such as interaction UX, and communication for promotion such as the website and application.

#### **d. Channel Partners**

Channel Partners will need to deliver your product to the customers when you launch your products. This is because you cannot expect sufficient revenue without delivering your products to customers in appropriate ways even if you can design attractive products for customers.

You can expand your partners when you spontaneously try to discover by yourself or your partners' or when candidates of partners suddenly emerge. In any case, it is important to use any opportunities as springboards to take your business forward.

### ***Fieldwork***

The 2<sup>nd</sup> tool is fieldwork. With fieldwork, you can discover resources which you can use for value proposition. In the 1<sup>st</sup> phase, the methods used for fieldwork and the kind of resources that you should collect have been mentioned, but in this phase, the main objective is the discovery of operand resources and operant resources that can be used for the value proposing process.

### ***Prototyping***

The 3<sup>rd</sup> tool is prototyping. With prototyping, customers can experience the values proposed by companies. On the other hand, you can confirm whether your company has the skills and knowledge for value proposition in your company by trying to create the state where the customers can experience the values. If your company finds that it has these skills and knowledge, you can then update them via prototyping. Also, prototyping is strongly connected to the 4<sup>th</sup> tool, testing, and is a prior condition of test.

#### a. Functional Prototype

#### b. Design Prototype

#### c. Contextual Prototype

There are a variety of targets for prototyping. First, you will design 3 prototypes to test concept, customer experience, service ecosystem and business model. Functional Prototype tests functions or the feasibility of the products. Design Prototype tests the appearance of the products. Contextual Prototype tests the context where the products will be used.

#### d. Media to deliver stories of products

#### e. Media for the customer experience in store

#### f. Media to develop a sustainable relationship with customers

In addition, the media to deliver the products to customers will also be targets for prototyping. When you design the media, you will design 3 types of media. Media to deliver stories of products are used in the phase when customers do not recognize and have not experienced the new products visually. Media for customer experience in store are used in the phase when customers recognize the products in store visually within 3 to 7 seconds. Media to develop a sustainable relationship with customers are used to develop a relationship to produce profits continuously by companies and customers who purchase the products.

It is not sufficient to design 6 prototypes to expand resources, but necessary to combine them with the next tool, testing. With testing, you will verify the hypothesis on these prototypes, acquire new knowledge, and implement new prototypes based on the resources.

### ***Test***

The 4<sup>th</sup> tool is Testing. Customers will experience the value offered by companies via testing, participate in the value co-creation process, and give feedback to the companies. On the other hand, the companies can update skills and knowledge related to the value proposition by acquiring feedback from the customers.

#### a. Concept and Customer Experience

In order to test the hypothesis related to the concept and customer experience, you will offer 3 prototypes, functional, design and contextual prototypes to the customers, users and experts, and obtain feedback. The feedback can be used as resources to refine the concept and customer experience.

#### b. Service Ecosystem and Business Model

In order to test the hypothesis related to the service ecosystem and business model, you will deliver the new products to your customers, implement the whole process of customer

experience, analyse the phenomenon there, and obtain feedback from customers. As a result, it will turn out that specific skills and knowledge are insufficient, costs are too great, or some processes could be made more efficient. This feedback can be used for resources to refine the service ecosystem and business model.

#### c. Media

In order to test the hypothesis related to the 3 media to deliver the attractiveness of the products, you will analyse the behaviour of the customers on these media, and obtain feedback. For example, it occurs that there are some issues that page views cannot achieve sufficient quantity, some products in store are not appealing to customers, or engagement on social media are not increased. This feedback can be used as resources to refine each media.

By expanding the resources of your company with these 4 tools, you can update the concept, customer experience, service ecosystem and business model of new products from the initial value. The most important point is to keep the initial value of identity and philosophy of your company during the refinement process. The identity and philosophy which you identified in the 1<sup>st</sup> phase is the basis of your company's brand. You cannot earn trust from your customer if you frequently change identity and philosophy. You can alter the product range, but should not easily alter the identity and philosophy of the product.

## Conclusions

This paper developed a practical innovation framework – the coconut innovation framework – by integrating the resources of developing countries and industrialised countries, creating new businesses, and expanding resources. This framework is composed of the coconut innovation process with three phases, four design targets designed through the process, and four tools used during the process.

Although this framework uses resources in developing countries, the target of application is not limited to developing countries. WANIC as a case study used resources in the developing countries, but this framework can improve probabilities for innovation success by initiating resources around actors, integrating a variety of resources, creating a new business, and finally expanding available resources. In this paper, the author only introduced one empirical case study, due to space and word-count limits. However, one case study about financial web services, which the author has developed in Japan – one of the industrialised countries – initialised resources which only actors in the industrialised countries have, and could be used for empirical data to develop this framework.

The author will continue to work on other projects in order to achieve more innovations focusing on resources using this innovation framework. In parallel, the author will spread this framework via the internet as an open source in order to gain further proof of the concept.

## Acknowledgements

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# Municipality as a platform: the case of Manifattura Milano

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## Abstract

The City of Milan, like other big cities on a global level, is experiencing the transition from the Third to the Fourth Industrial Revolution. After a process that in just a few decades has seen an industrial urban economy transform into a post-industrial economy based on services, the emerging paradigm of the Fourth Industrial Revolution leads the City of Milan to rethink its economies by bringing the material production of goods back to the center of their interests. To facilitate this transition, the Municipality of Milan has launched a multi-year program of urban policies that take the name of Manifattura Milano. It is an action aims to facilitate the formation of a new urban manufacturing community, to support the development of an open ecosystem of places and services for the materialization of goods, and to stimulate the integration of technological, social and design-driven innovation. Manifattura Milano thus becomes an action with which a Municipality puts itself at the service of a transformative process, transforming itself into an inclusive and enabling *policy-for-making* platform.

**KEYWORDS:** policy for making, Fourth Industrial Revolution, (new) urban manufacturing

## From cities as stages to cities as experimental platforms

*Creative, Smart, Sharing, Inclusive, Open, Resilient, Digital, Maker, Circular, Productive, Fab.*

In recent years, all these *labels* have been associated with the "City" and the "cities" (in particular the European ones) thanks to experimental and research projects that stimulate the transformation of contemporary urban contexts combining technological innovation, social innovation, sustainable development. These initiatives, often co-developed by networks of cities, have sediment pilots and demos working to increase an urban lab culture aimed at activating and involving institutions, citizens and businesses across the board, stimulating them to co-design innovation initiatives.

Milan, like other global cities, has been increasingly involved in many of these initiatives, experiencing first-hand the transition to the so-called Fourth Industrial Revolution. It is a transition that in a few decades has seen an urban industrial economy transform into a post-industrial service-based economy. The new emerging paradigm of the Fourth Industrial

Revolution is now challenging the City of Milan (and other cities) to bring again the material production of goods at the center of its interests.

*But what exactly does it mean to produce in the city today?* There is a big challenge that lies in many contemporary politics agendas and research contexts: how to reconcile a model of advanced, democratic and equitable development, with the progressive affirmation of a vision of social, economic and environmental sustainability.

In the last decade, in some global cities, has started a (re)birth and (re)localization of manufacturing activities. This phenomenon has been initially called *Small Urban Manufacturing* (Byron and Nistry, 2011; Lester et al, 2013) is now becoming mainstream. It includes a heterogeneous group of individuals interested in production such as growers, hackers, makers, designer-craftsmen, DIY people, crafters, craftivists, and fabrication units such as micro-breweries, mini-factories, mobile food units, micro-farms, makerspaces, hackerspaces, manufacturing hubs *bi-tech* and *biotech* start-ups. These forms of materialization of goods see the urban population as a potential localized market, which see *on demand* and *taylor made* manufacturing as an alternative to the mass production, see in the democratization of design and manufacturing tools (and technologies) a social process of re-access to the means of production. (Bianchini and Maffei, 2013). A phenomenon, the latter in particular, that can find a further evolutionary thrust with the vision of "Industry 4.0", a concentration of economic and fiscal devices and measures that favour investments in robotic and computational technologies, consultancy and training in workers and businesses.

Testimonies of this process are cities such as New York, Chicago, Detroit, San Francisco, Amsterdam, Barcelona, Paris, Boston, Toulouse, Shenzhen, and Santiago where a new generation of urban manufacturing operators is trying to create economic development and new jobs thanks to the meeting and the contamination between technologies, crafts, start-ups, design and making. Chicago, Detroit, San Francisco work on developing local and national alliances of urban manufacturers by setting up collaborative services that support companies dealing with logistics, distribution, shared purchasing of raw materials, promotion. Food, design, 3D printing, new manufacturing and industrial areas recovered as Brooklyn Navy Yard represent for New York a strategic asset of the urban economy<sup>1</sup>. Shenzhen offers a distributed system of electronics and hardware micro-manufacturers<sup>2</sup>, Paris works on the development of crafts studios and incubators in the city center and push to localize the "industries of the future" in the suburbs. London stimulates the re-zoning of innovative forms of production centered on a mix craftsmanship, making and manufacturing 4.0 thanks to emerging initiatives like MakerMile<sup>3</sup>. Finally, Barcelona is aggregating an international network of cities interested in developing forms of circular economy developing a global initiative named Fab City<sup>4</sup>.

## Manifattura Milano

Starting from EXPO 2015, the City of Milan has progressively regenerated the activism of its institutions, companies, universities, creative professionals and citizens becoming a vibrant context that support the rise of communities of innovators active in the social, economic, technological, creative and cultural fields. These communities are aggregating themselves around hybrid social and experimental spaces, distributed in the city.

Nowadays, Milan has over more than one hundred co-working spaces, ten Fab Labs and makerspaces, incubators and business accelerators, cultural and creative hubs. It is an emerging ecosystem to which are added the universities, more and more committed to opening up their heritage of structures and skills to the city, businesses, professionals and

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<sup>1</sup> See [https://nycfuture.org/pdf/Making\\_It\\_Here\\_July\\_2016.pdf](https://nycfuture.org/pdf/Making_It_Here_July_2016.pdf)

<sup>2</sup> See [www.seedstudio.com/document/pdf/Shenzhen%20Map%20for%20Makers.pdf](http://www.seedstudio.com/document/pdf/Shenzhen%20Map%20for%20Makers.pdf)

<sup>3</sup> See [makermile.cc/vid/](http://makermile.cc/vid/)

<sup>4</sup> See [Fab.city](http://Fab.city)

citizens. In Milan, this new innovation ecosystem is not only structuring but is also being structured to design, prototype and test initiatives, products and services on an urban scale in different sectors: agri-food, manufacturing, digital technologies, energy, healthcare.

In recent years, the City of Milan has in fact been configured itself as a platform that has activated, collaborated, supported or participated a set of initiatives: incentives in favor of Fab Labs and makerspaces, establishment of a qualified list of Fab Labs, initiatives of matching between Fab Labs and companies, creation of urban labs and hubs (Mhuma, Smart City Lab), research projects and innovation on an urban scale (OpenCare<sup>5</sup>, OpenAgri), projects for the development of digital skills in young people (Mi Generation Lab<sup>6</sup>). All these initiatives configure a urban platform that aggregates and integrates policies, actors, places and institutions around the theme of new manufacturing. This is the concept of Manifattura Milano, a policy program that promotes the development of urban manufacturing and new crafts, starting from the manufacturing and artisan roots of the city and from the comparison with similar initiatives in other European cities. Manifattura Milano has been connected on the existing urban productive system: Milan is the first Italian city for manufacturing consistency - over 36,000 companies, 350,000 jobs and 13,000 craftsmen engaged in manufacturing (25% of total turnover generated in the city) and number of manufacturing startups.

Manifattura Milano defines the vision and the set of policy projects to stimulate the growth of the urban manufacturing ecosystem. It works to improve the ability of the city to attract economic activities also increasing the role of Milan internationally; it works to combine innovation, inclusion and sustainability to generate job opportunities (especially for young people) and stimulate the rebirth of the suburbs; finally, it works to regenerate mature productive sectors and supporting the parallel emergence of future economies based on digital manufacturing. Manifattura Milano was set up in 2017 through a co-design process that involved companies and their associations, universities and research centers, makerspaces and coworking in the development of a six-pillars strategy: *studies and research, communication, laboratories and services, reuse of disused urban spaces, investment support, education and training*. The set-up of the policy program was based on three activities: 1) *Desk*, in terms of collecting data, case studies and analysis of research policies; 2) *Live*, in terms of organizing focus groups and bilateral meetings with the different protagonists of culture and the urban and international manufacturing scene<sup>7</sup>; 3) *Online*, in terms of establishing relationships with the community of citizens and companies.

The preparation and approval of Manifattura Milano in 2017 saw the sudden organization of a public launch event in BASE Milano, a new symbolic cultural urban open space. During this event, local and national policymakers interact with the urban manufacturing communities in order to introduce and sharing vision and activities of the policy program, its logic of development and the timing of implementation. Cristina Tajani, assessor for production activities of the Municipality of Milan, said during the presentation of Manifattura Milano: *"We used to think the city as a place where deindustrialization is managed and governed, while today we want to be promoters of a process of reconvertig unproductive spaces in production places"*. The first major initiative was the first edition of the ManifatturaMilanoCamp (March 17, 2018), an opportunity to converge and aggregate three communities linked to digital manufacturing projects very connected internally but poorly connected externally: the community of start-ups that realize projects, products and services with high technological content for Industry 4.0; the community of crafts and manufacturing SMEs present mainly in the hinterland that innovate their production processes combining traditional know-how and new technologies; finally, the vibrant "urban" community of designers, makers, artisans, Fab Labs, coworking and self-producers. At Camp, for the first time, these three community were together in the same place. They met and shared their experiences creating a big

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<sup>5</sup> See [opencare.cc](http://opencare.cc)

<sup>6</sup> See [www.migeneration.it](http://www.migeneration.it)

<sup>7</sup> Over 50 subjects involved in meetings: universities, training centers, foundations, trade associations, trade unions, Fab Labs and makerspaces, experts and influencers.

networking event that saw the participation of 112 speakers from 88 different organizations, organized in 18 thematic sessions.

Manifattura Milano constitutes the first embryo of a manufacturing ecosystem connected with the city and its manifold services able to generate a dynamic alignment between the local demand for and supply of products and productive capacity (also of services)

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## *Track 6: Experiencing and shaping*

The spatial experience of human beings is rooted in architecture and urban planning and finds its exploratory focus in the spatial design discipline, where the transformation and manipulation of a given space deals not only with its perception and transit, but also with the system of actions and interactions that take place in it. Spatial design frequently encounters the redefinition of contemporary life parameters and discloses the new configurations of a changing society: the physical realm enables interactions among people and enhances a sense of shared ownership and the engagement of people with contexts. That is why the design of public and private spaces meets the relational nature of services, in a mutual influence that affects the creation of meaningful social environments.

The track seeks to explore the relationship between service design and the design of physical environments. The main aim is to examine how the systemic logic of service design and its peculiar focus on interactions influence the shaping of spaces, in private as well as in public contexts. Specific issues regard:

- the contribution of service design to the theoretical and operational toolkit of spatial design;
- the respective positioning of service design and spatial design in education and practice, and collaboration between the different practitioners;
- the potential of service design to facilitate the direct involvement of stakeholders (including citizens) in the design of the spaces, and how this can contribute to strengthening long-term relationships between people and places;
- the quality of the experience in the space.

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## “Experiencing and shaping”: The relations between spatial and service design

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### Introduction

This paper explores the relationship between service design and the design of physical environments through the contributions received in “Experiencing and shaping” track at the “ServDes.2018 Proof of Concept” Conference. The main aim of the track is to examine how the systemic logic of service design and its peculiar focus on interactions influence the shaping of spaces, while at the same time exploring how spatial design could shape places according to the different actions occurring within them, mainly due to services taking place there. Mutual influences relate both to the experiences the users could have in the spaces and in using services, and at the same time with the shapes of spaces where services happen.

Although the track topic deals with a barely explored aspect of service design, various contributions have framed an interesting panorama of the current situation. The twelve articles selected have been gathered into three main clusters concerned with: framing a theoretical background, experimental educational activities and applied research.

**KEYWORDS:** experiencing, shaping, spatial design, service design, design research

### Introduction

The spatial experience of human beings is rooted in architecture and urban planning and finds its exploratory focus in the spatial design discipline, where the transformation and manipulation of a given space deals not only with its perception and transit, but also with the system of actions and interactions that take place in it. Spatial design frequently encounters the redefinition of contemporary life parameters and discloses the new configurations of a changing society: the physical realm enables interactions among people and enhances a sense of shared ownership and the engagement of people with contexts. That is why the design of public and private spaces meets the relational nature of services, in a mutual influence that affects the creation of meaningful social environments.

When Spatial Design meets Service design (and vice versa), a wide range of settings are set up, dealing with urban planning, workplaces, retail, private interior spaces, public services and infrastructures. In this range of settings, spaces *host* relational entities and vice versa, services *take place* in physical environments and *determine* tangible outcomes.

The “Experiencing and shaping” track at the “ServDes.2018 Proof of Concept” Conference seeks to explore the relationship between service design and the design of physical environments as a first attempt at a proof of concept concerning a relationship that has not yet been investigated in depth and lacks a wide set of academic references, but which on the other hand benefits from some educational activities mainly carried out in real contexts. The main aim of the track is to examine how the systemic logic of service design and its peculiar focus on interactions influence the shaping of spaces, in private as well as in public contexts, while at the same time exploring how spatial design could shape places according to the different actions occurring within them, mainly due to services taking place there. Mutual influences relate both to the experiences the users could have in the spaces and in using services, and at the same time with the shapes of spaces where services happen.

Experiences are here intended as actions to engage users in a personal and memorable way (Pine & Gilmore, 2011), while shapes refer to a system of technologies, materials, spatial components of a natural or artificial environment. Whereas experiences are usually identified through service actions, shapes are more closely-linked to the definition of the spaces themselves. This track tries to explore how services taking place in spaces, could affect the shapes and how the shapes of an environment could influence the characteristics of a service.

Contributors were invited to investigate specific issues:

- the role of service design in the theoretical and operational features of spatial design;
- the respective positioning of service design and spatial design in education and practice, and collaboration between the different practitioners;
- the potential of service design to facilitate the direct involvement of several stakeholders in the design of the spaces, and how this can contribute to strengthen long-term relationships between people and places;
- the quality of experience in the space.

The track has been introduced with some open questions to start the debate: what is the connection between spaces and services in the design discipline? How is the design of spaces and places influenced by the use of service tools? How does UX design cross the spatial design discipline? Can service design increase the engagement of stakeholders in the design of spaces?

These questions brought out the state of the art of the relationship between Service and Spatial design. The existing lack of exploration of this relationship limits the role of space in a service approach to “where something happens” with no further additions, instead of being a component of the system to be designed. At the same time there is still no consolidated background on how spatial designers are including service design in their design process and results. We may say that we are face to face with a new field in the design discipline, one which has a transdisciplinary aspect due to the increasing comparison of disciplines.

The contributions in this track propose several different interpretations of “experiencing and shaping” in the service design field. They highlight the enriching plurality of voices and expressions that characterize this debate among scholars, researchers and practitioners. At the same time, they establish new theoretical connections that prompt the pursuit of new research and design activities towards the integration of Service Design and Spatial Design. Although the track topic deals with a barely explored aspect of service design, various contributions have framed an interesting panorama of the current situation.

The twelve articles selected have been gathered into three main clusters concerned with:

- framing a theoretical background;
- experimental educational activities;
- applied research.

Most of the papers fit the first two groups, while the third type has a smaller number of contributions and can be placed between theoretical and applied research. In addition, the articles dealing with educational activities help to frame the current situation and to

investigate the academic institutions in which the relationship between spaces and services is explored. We can certainly say that the interaction of these two disciplines outlines a landscape of constantly evolving design opportunities and that future scenarios are promising and rich.

## Framing A Theoretical Background

In the positioning paper, "Service+Spatial design: introducing the fundamentals of a transdisciplinary approach", the authors, Davide Fassi, Laura Galluzzo and Annalinda De Rosa, define the relationship between Spatial and Service Design, trace the theoretical genesis of the two disciplines, analyse the contact points and overlap between the different approaches and imagine future developments in the direction of a transdisciplinary approach that is not limited to the overlapping of the two disciplines. This paper starts by assuming that services take place in spaces and services generate spaces.

Therefore, the guiding questions concern: how spaces can influence, can generate, can be set up for and be used through service, how services can influence, can generate, can be set up for and be used through space; how service design processes can add value to space projects and vice-versa.

Moreover, the authors define the Service + Spatial fundamentals through a comparative theoretical framework based on the qualitative dimension, and in which the two disciplines face different but complementary aspects:

- environmental dimension (dialectical / unfolded)
- temporal dimension (abstract - endless time of memory / experiential - limited time of use)
- social dimension (symbolic, relational) (Fassi, Galluzzo, De Rosa, 2018)

This qualitative comparison aims at framing the Service + Spatial nature as dialectical, archetypal and phenomenological.

Further, the paper highlights five findings, in a first attempt to frame a theoretical background to the topic.

In his paper, "Traces as service evidence", Spyros Bofylatos talks about physical evidence in Service Design, particularly in the context of service design for social innovation. Here, traces are perceived as an essential aspect of services because the service experience exists as a choreography of people, things and processes. (Bofylatos, 2018)

According to the author, these traces connect the present with the past and guide the service and its users in the future. Such trajectories are not designed, but the designer can set favourable conditions for them to emerge, thanks to the use of tacit knowledge.

Tacit knowledge provides a way towards a new "restoring narrative unity" (Walker 2017) fostering a more meaningful material culture and unlocking the redirective potential of design. Especially in the context of service design for social innovation, due to its transformative position and distributed character, tacit knowledge seems like a necessary consideration. (Bofylatos, 2018)

Shana Agid and Yoko Akama in their paper, "Dance of designing: Rethinking position, relation and movement in service design", underline the importance of dynamic relationships in service design and, above all, how the most contradictory and less predictable aspects are not currently held in consideration when using fixed and stable tools such as the journey map.

Instead of drawing inspirations from systems engineering and architectural blueprints with lines already laden with precision and prediction, what if we looked to notations in music, dance and performance? (Agid and Akama, 2018)

The authors suggest a new type of map that also focuses on the sensible aspects – those things that can be heard and perceived – the unexpected experiences which place people at the centre of service design. Using such tools is to reveal conflict, serendipity, cultural assumptions, missed connections, or false promises, rather than hide or disguise them under more desirable experiences (Agid and Akama, 2018).

In both these last two papers, great attention is placed on the unfixed knowledge, the experience, the tacit knowledge and, in general, the processes of alterations. In framing a theoretical background, use of tools is one of the issues to be investigated and the “Walkthrough” models, mainly used in service design process, are the focus in the following two papers. Desktop walkthrough is a design tool that uses a collaboratively-built miniature environment that allows participants to interact with abstract concepts such as service processes and flows.

It is the perfect mix of tangible and immaterial service qualities and portrays in a complete manner the interactions taking place during the performance of the service itself. We could say that the Desktop walkthrough is the most appropriate tool to deal with the issues addressed in this track and, in particular, with the relationship between the service and the spatial dimension.

In their paper, “Facilitating in Service Design using Desktop Walkthroughs”, Johan Blomkvist and Fredrik Wahlman claim that with new territories for design come new (opportunities and) challenges – and with them, new tools that help designers deal with new situations (Blomkvist and Wahlman, 2018). In particular, according to the authors the Desktop walkthrough tool is used as a service design tool to facilitate collaborative design activities, but a deeper knowledge of motivations and considerations about its value is lacking as there is no specific literature. The paper therefore aims to fill this gap by offering a better understanding of its role as a co-design tool from the perspective of facilitation. Its use has been explored from several points of view: those of the facilitators, the design student, the researcher, the in-house service designer and the consultant. (Blomkvist and Wahlman, 2018). The authors also try to assess how successful, or otherwise, the tool could be for utilitarian purposes, or in relation to marketing and education issues, underlining its lack of perspective from the participant point of view.

An innovative way to redesign this tool is presented in the paper, “VR Service Walkthrough: A Virtual Reality-based Method for Service Prototyping”. The author proposes a new service prototyping method: a service walkthrough as a virtual simulation of the service journey, showing how the service unfolds over space and time. Costas Boletsis describes the new tool as follows: the method allows designers to explore, evaluate, and communicate service concepts in a holistic way, capturing the service as a whole, while it enables service users to immerse themselves in the virtual, prototyping environment, interact with service components in virtual form, and experience the service journey in VR (Boletsis, 2018). He also presents an application of the new tool to a location-based Audio Tour Guide Service, together with the results obtained.

## Experimental educational activities

The educational and teaching fields are the main topic of two papers dealing with innovative approaches in service and spatial design in university courses.

In the paper, “Space and service design into educational practice”, Nansi Van Geetsom describes how the “Interior & Service Design Course” at Thomas More University of Applied Sciences in Mechelen, Belgium was established starting from a research of the local market needs. She writes: “the concrete and ongoing demand from the local society has created the urge for a new design specialization and a new approach: Interior/Space & Service Design. And as society and therefore design disciplines keep evolving, education needs to evolve too in order to prepare future-proof designers” (Van Geetsom, 2018). As mentioned in the previous paragraph, an integrated approach combining space and service design is lacking (Felix, E., 2011), although many examples in design practice show that they are inseparable. In the “Interior & Service Design Course” “the design of the space is not the end but the start of a continuous interaction with people using that space. Therefore, the aspirant designer should learn how to create a space as a system by identifying the services and defining the interactions between people, space, objects and communication tools.

Spatial design and service design are used to create better experiences. (Van Geetsom, 2018)". While this author focuses on how educational activities in spatial and service design could be innovative and explore the contemporary needs of companies and clients, the following paper shows how design studios at academic level could be run to translate these inputs into practice.

In their paper, "Design Thinking for Interior and Spatial Design: A Case Study within Politecnico di Milano", Ngoc Pham and Davide Fassi present the approach, development and output of two design studios at the Politecnico di Milano, which addressed different areas of concern but were underpinned by a shared approach. They used service design tools and methods to implement spatial design solutions, and focused on how spaces for education could be temporarily reshaped to answer the students' needs to develop design solutions.

These cases are interesting because within the School and Department of Design at the Politecnico di Milano, the POLIMI DESIS Lab has been developing some innovative interdisciplinary programs, crossing the area of Interior and Spatial design with Service design, through design thinking and user- and community-centred design. An interesting approach of their analysis is explained through maps showing classroom layouts, with the purpose of understanding (students and teachers) how an educational space could be reshaped by the needs of the users. For example, in the "Final Design studio", a clear view is given of how the classroom was transformed, highlighting the following settings: from lectures to feedbacks, from lectures to presentations, from traditional classroom to active classroom, from teacher-centred learning to student-centred learning. (Pham and Fassi, 2018)

## Applied research

The third cluster includes papers dealing with applied research, such as experimentations in the field of spatial and service solutions. The paper, "Service Design Methods and Tools as Support to the Participatory Definition of the Meta-design Brief of a Contemporary Integrated Campus", focuses on the definition of tailor-made methods and tools merging the contribution of Service and Spatial Design for the meta-design development of the new scientific campus at the "Università degli Studi di Milano", to be built on the former Milano Expo 2015 site. The authors present an applied research that focuses on the learning spaces for future campuses.

The relations between the two disciplines highlight how the Service Design tools help the researcher to define a set of principles, guidelines, and reference rules capable of generating the layout for an integrated campus at a later stage. If a campus is a network of connections, relationships and interactions between individuals and groups (Amelar, 2016), the authors state that this network should be facilitated by the spatial context in which they take place. (Camocini, Collina, Daglio, Mazzarello, Trapani, 2018)

In the paper, "Designing Spaces and Services: an Experimental Project for Student Dormitories: Collective Experiences, Connected Lives and Linked Places", student residences are considered as physical touchpoints to activate interaction between people. In most university campuses and schools, the dormitory area as a whole can be considered an urban hub through which synergistic relations take place between the student residential complex and the neighbourhood, and vice versa. (Collina, Di Sabatino, Galluzzo, Mastrantoni, 2018).

The authors describe an experimental teaching project for a student residential building in Milan, Italy; through this applied project the paper presents possible relationships between spatial (environment and experience design) and service design. (Collina, Di Sabatino, Galluzzo, Mastrantoni, 2018)

In both the previous two papers the research process is described as a fundamental aspect of the project presented; both projects adopt a human centred design approach and use co-design tools to define the actions and characteristics of the output with the local

communities. The groups of users in these places dedicated to learning and research are heterogeneous, some belong to the university community, while others are citizens from the neighbourhood where the facilities are located. The goal of both research projects is to involve the different populations and develop the design output with them and not for them. An original use of service design tools in the development both of the spaces and services is here presented. The inclusion of spatial features in those tools generally used by service design (i.e. user journey, storyboard etc.) allow a cross between the processes. Adding to and enriching the storyboards and user journeys with more spatial details will transform them into useful tools for representing the environment, and its flows, its uses and its functions. (Collina, Di Sabatino, Galluzzo, Mastrantoni, 2018).

Continuing the design experiments in several fields of application, the authors, Giuliano Simonelli, Francesco Scullica, Elena Elgani and Vanessa Monna, ask a specific research question that gives the paper its title: "Can co-working spaces be built bottom-up?" If technological development potentially enables people to work anywhere in the world, (...) the irony is that there is no space anywhere designed for such work. Co-working can be considered the leading example of a workspace as a service (Boyd, 2014). From a service design point of view, it is interesting to observe that co-working is in fact a package of services including, in terms of space, the container itself and, in terms of content, targeted facilities and equipment. This means that co-working is a distributed system of people, spaces, goods, and processes. (Simonelli, Scullica, Elgani, Monna, 2018)

The paper, "Engagement strategies within co-making environments bridging spatial and organisational design", also examines the possibility of involving co-making-space users in a more structured way, through an app, in order to characterize, personalize and then enrich the spaces and services with different points of view and visions.

Ricardo Saint-Clair has observed and applied several research methods to investigate 18 prominent maker spaces, located in five cities in Europe, and try to answer the questions: to what extent does the interior design of a space make people more collaborative and innovative? What are the settings and platforms that may affect the way people feel, behave and interact?

The empirical study navigates the blurry boundaries of spatial design and organisational design, and the dynamic strategies employed to unleash the patterns and congruencies of these adaptive environments, assuring the engagement and participation of the population researched. (Saint-Clair, 2018)

It is interesting to note that even though they are relatively new spaces, neither maker spaces nor fablabs are characterized by impactful relations between space design and services.

In many ways, buildings and interiors have not been designed to keep pace with the speed of digital technologies, especially when we analyse the workspace and how new ways of working and social interacting are influenced by the interior landscape. (Saint-Clair, 2018)

The aim of the paper, "Service Design Principles for organizational well-being: improving the employee experience through Design Thinking", is to link Service Design and Design Thinking to well-being in workplaces and propose a set of design principles that can be adopted by both designers and managers responsible for organizational services to improve employees' well-being. In the research phase, the data collected were organized into three main categories: spaces, interactions and relationships, services and work-life balance. Thus, in this case, both services and spaces are involved in the definition of seven design principles. These suggest the key features that organizational services must have to produce positive effects on well-being.

The design principles can help not only to design better services, but also to feature better experience of interaction with spaces. The authors suggest that there are different elements in the realm of spaces, interactions and services that are interconnected and characterize the experience of people within an organization. (Di Norcia, Bertolotti and Vignoli, 2018).

## Conclusions

The last few years of practice across spatial, service and experience design has been significant for a number of reasons. There has been an avalanche of public discourse and debate about the relationship between service, space and experience, alongside its adoption by organisations and designers from multiple backgrounds.

This upsurge in design work and discourse connecting experience to space seems almost to supersede service design or spatial design as an exclusive pursuit. There is now a crossover of practice and a transdisciplinarity of approaches, which not only mirrors the complexity of design challenges themselves, but also the escalating convergences of the world around us: smartphones becoming much more than just phones, for example, or living spaces where one lives *and* works.

When one considers service design on its own, helpfully defined by Wikipedia as ‘the activity of planning and organizing people, infrastructure, communication and material components of a service in order to improve its quality and the interaction between the service provider and its customers.’ one recognises the need to shift focus.

Space is not mentioned in this definition, nor is experience. Service design here is described as an organising approach, akin to engineering, to iron out frustrations, increase efficiencies, quicken processes. It is of course more than this, yet as one sees with Design Thinking, it is so widespread and supposedly so embedded in all design that it no longer carries much definitive meaning.

The experience of space (Lina Bo Bardi describes architecture/spaces as ‘not existing’ until one enters and ‘experiences’ it) is contained in itself so to speak: one can try to imagine it, model it or evoke it, but it needs at some point to be human scale, to be itself. We compensate for this in the design of space through models, drawings, VR, prototypes and any means possible, but these are all ‘stand ins’ for the thing itself. The experience of space is such a complex amalgamation of memory, imagination, physiology, sound, light, touch, and smell that it is very hard to appropriate.

To understand the value of converging service and space design one needs to acknowledge that once space is designed and built, no matter how it was conceived or approached, once it exists and is occupied, an ongoing relationship between the ‘user’ and the ‘space’ is created. This simple idea challenges a lot of architectural thinking and brings spatial design practice alongside service design. Thinking of a user of space, and designing for a community of users, suddenly enlivens spaces towards a human dimension that adds to the whole, rather than compromising the designer’s vision. If one accepts this limit of complete and cohesive thinking, acknowledging that to predetermine how a space is felt, understood and used is not only impossible, but undesirable, one steps off the pedestal of the master builder. Conversely too, if the service designer can assume the user point of view and acknowledge that it is impossible to imagine all parts of their journey, and to exhaust all possibilities of what they may want, need or desire at any one moment, he/she will again arrive at a similar point: the need to step back and stop designing.

Service flows, service blueprints, user journeys, all these elements become clear and effective when understood in spatial terms, not just on the page, but as a way to understand and communicate them and their impact: to enact them in space. Space contains them and their purpose. At the same time, the attributes of architecture, such as volume, rhythm, height or material, become more exhilarating when conceived as a way of enabling a service, providing a platform that facilitates the creation of personal experiences.

## Conclusions and Further Challenges

As described in the last paragraphs, there are three main clusters that emerge from the twelve papers presented in this track. While a theoretical background has been explored by detailing a transdisciplinary field (De Rosa, Fassi, Galluzzo 2018) and the importance of the service legacy (Bofylatis, 2018), a range of alternatives in the use of tools has been presented to support this emerging interest in Service and Spatial Design (Agid and Akama, 2018), (Blomkvist and Wahlman, 2018), (Boletsis, 2018).



When the theory is applied to education, the fields of exploration are diverse but converge in a common design language (Van Geetsom, 2018) (Pham and Fassi, 2018). At the same time, the theoretical background is supported by several practices exploring different applications: including university campuses (Camocini, Collina, Daglio, Mazzarello, Trapani, 2018), student residential complexes (Collina, Di Sabatino, Galluzzo, Mastrantoni, 2018), co-working places (Simonelli, Scullica, Elgani, Monna, 2018), maker spaces (Di Norcia, Bertolotti and Vignoli, 2018) and private companies (Saint-Clair, 2018).

The relationship between Spatial Design and Service Design has been investigated in depth by creating one of the first attempts to establish academic literature in this field. This step is useful to start a discussion about the future of this relationship that could include:

- the creation of a transdisciplinary approach in need of specific tools and methodology;
- the establishment of a new professional figure who will deal with shaping the environments hosting services and designing experiencing connected to spatial dimensions;
- a new design language that will draw on existing ones (from service and spatial design) to create an innovative way to approach, visualize, tell, prototype and build innovative design output in the field of Spatial and Service design;
- a research area able to observe the evolution of these two disciplines and their connection with the professional, educational and market realms, and able to explore a dialogue with other disciplines.

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# Service design methods and tools as support to the participatory definition of the meta-design brief of a contemporary integrated campus

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## Abstract

Service Design can contribute to Spatial Design not only through data collection from the involved stakeholders and their demands analysis but also through the improvement of methods and tools to engage final users, to trigger interactions among them, to stimulate ways of conceiving and creating new living and working lifestyles and social environments. An especially challenging task emerges from the enhancement of programs and facilities particularly affected by transformations and new configurations of learning and research environments. This paper focuses on the definition of tailor-made methods and tools merging the contribution of Service and Spatial Design for the meta-design development of the new scientific campus of the Università degli Studi di Milano to be built on the former Milano Expo 2015 site.

**KEYWORDS:** participatory design, community engagement, co-design, capability development, human experience sense-making, multidisciplinary research, learning & teaching environments, higher education facilities, meta-design

## Introduction

### Background

Service designers are usually in charge of gathering information during co-design workshops with users and various stakeholders so to tailor the design of viable and sustainable services to the emerged needs and desires. Service Design methods take the side of the real users with their hopes and worries: working closely with all stakeholders is a fundamental axiom of the practice. Specific tools can help visualizing and illustrating flows of people, resources, goods, and knowledge within a given system, so to ensure it's functioning as smoothly as possible. Of course, the visual language must be clear and understandable, to be reviewed

and discussed by non-designers in participatory settings (Van Berkel & Bos, 1999). Interactions, relations, and activities are valued more than established typologies of objects and places. Therefore, built-in habits and chronic practices are often deconstructed and questioned, leading to the generation of new solutions that can potentially reshape behaviors, products, places and their arrangements, and eventually transform society. On the other hand, in a participatory framework, designers, donning the hat of the facilitator who helps others to be creative, encourage the involvement of end-users and other stakeholders as co-designers. A side gain of this approach is that co-designers will be proud and take ownership of the process, facilitating an implementation sustainable in the long-term (Sanders, 2013). What follows is an account of how Service Design methods and tools have been used to define the set of principles, guidelines, and reference rules capable of generating, at a later stage, the layout for an integrated campus of the Università degli Studi di Milano on the former Expo 2015 site. The starting assumption is that a campus is first and foremost a web of connections, relationships and interactions between individuals and groups (Amelar, 2016) that should be eased by the spatial context in which they take place.

The plan of transferring the science faculties of the Università degli Studi di Milano to the new site raised the challenge to envision spaces suitable for current and future forms of interdisciplinary collaboration in research, teaching & learning practices. The Politecnico di Milano has been involved from the outset as the chief consultant to investigate high-level project requirements, desires, and needs for a coherent and efficient organization of the different activities. The outcome was not meant to be translated directly into a preliminary architectural concept of the Campus. Instead, the assignment was about setting both quantitative and qualitative parameters related to spaces and activities as well as to their relationships (Collina, 2005). At a later stage, an organized set of information should be passed onto architectural firms and developers participating to the international competition for the master plan and architectural proposal, in such a fashion to leave room for a flexible interpretation and innovative typological and technological solutions.

The general plan for the Expo 2015 site conversion, managed by Arexpo SpA, aspired to achieve an integrated redesign of the strategic area through the establishment of a “Science, Knowledge and Innovation Park” in line with the vocation of 2015 Universal Exposition to research, education, and sustainable development. For this reason, scientific and technological research institutions, both private and public, were invited to join the design of a vibrant and mutually stimulating environment for collaborative studies and crossbreeding interactions. The scientific faculties and departments of the Università degli Studi di Milano, often scattered in existing buildings no longer up to standard, were in need of renovation to update research infrastructures and laboratories. Therefore, it seemed a valuable opportunity for a radical renewal not only of the spaces and their relationships but also of innovative research and education practices.

The primary goal of the new campus project is to provide the physical infrastructure for cutting-edge scientific innovation and discovery as well as for interactions within and beyond the campus boundaries. Hence, the name of the project “Science for Citizens” underlines the pivotal role of the university to enhance the welfare and health of the whole the society (Chatterton, 2000) thanks to the continuous dissemination of research results, and suggests the idea of a campus with no borders, open and integrated to the city.

A scientific collaboration agreement between the Università degli Studi di Milano and the Politecnico di Milano has been signed to follow up with the following actions:

- to foster base and advanced research;
- to establish strategic partnerships with worldwide academic and industrial partners;
- to develop new interdisciplinary research pathways in response to emerging societal challenges;
- to provide a research-led tertiary education.

In the “Results” section of this paper, we present the outcome of the first phase of the research: a preliminary version of a guidelines booklet (Università degli Studi di Milano, 2017), an urban scale diagram, and concept explorations of the campus layout in the former Expo 2015 site.

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The second phase, which is currently ongoing, will result in a revised version of the booklet based on the activities carried out during the co-creative workshops with the campus' users and a relationship diagram. Finally, we conclude the paper describing in greater detail the envisaged future steps and possible developments of the research.

## Research aims

The objective of the research is to investigate how Service Design methods and tools can contribute to the participatory definition of the meta-design brief of a contemporary integrated campus.

### Research objectives

The research aim has been articulated in the following goals:

- Reviewing existing design methods and tools with a specific focus on three areas:
  - Strategic Design: specific methods and tools capable of tracing a middle pathway between spaces and services, a sort of third culture suitable to capture the most relevant interactions, whether already in place or desired, to inform the set of spatial guidelines.
  - Participatory Design: co-design frameworks to gain experiential insights and highlight critical issues about daily practices and behavioral patterns in university campuses;
  - Spatial Analysis: methods and tools to achieve an in-depth understanding of the settlement's physical requirements so to achieve rationalization and efficiency;
- Designing and developing tailored design tools to be used during the co-design workshops with the primary users and stakeholders.
- Conducting the co-design workshops.
- Understanding and evaluating the participant experience of co-design as non-professional designers.

The desired outcome of this hybrid service/spatial design approach is to overcome the present physical separation between faculties and researchers, which has generated over the years rigid disciplinary silos, frequently leading to self-referential, narrow-minded attitudes, possibly detrimental for innovation and research advancements.

## Methodology, Methods and data collecting

The objective of the research is to investigate how Service Design methods and tools can contribute to the participatory definition of the meta-design brief of a contemporary integrated campus.

### Constructivist approach

In this project, we used a constructivist approach according to which reality is socially co-constructed, and its meaning is the product of the constant interaction between participants' understanding and sense. Previous experiences and knowledge are always at play in filtering the information selected for the development of new concepts and shifts in personal ideas, and points of view are possible and desirable thanks to these interactions. Making judgments explicit is crucial when shaping a complex artifact like "an integrated campus," which is by no means an objective category of the natural world. Designers and participants are engaged

in a continuous process of exploration and bilateral negotiation to determine how the meaning's hierarchy is constructed. Without an explicit agreement about the conceptual architecture, in fact, a productive communication is impossible, and all sorts of arguments can generate at any stage. If in a constructivist approach knowledge is produced through actions and interactions, then the encounter between the facilitators and the participants can be seen as an opportunity for knowledge construction that is meaningful and valid. The use of innovative Service Design tools, as a method of gathering and discussing qualitative information related in this case to highly complex and specialized spaces and equipment, allowed for interactive conversations oriented toward concepts' exploration from different angles and backgrounds (Baule et al. 2007). It also created a safe environment for participants to express themselves in their unique propositions. Through intentionally designed tools, even unexpected ideas were welcomed and discussed, providing valuable in-depth uncensored insights. Unprecedented scenarios of potential participation in joint research, learning or teaching activities emerged during the workshops from personal experiences and individual ideas of the participants.

## Recruitments and Participants

Since the beginning, the design team adopted a user-centered method, which led to the definition of different categories of research participants: one Rector and one General Manager, 13 Chairs of the Departments and their 13 delegates, 3 Property Managers, two members of the technical staff, and 14 students were involved.

According to institutional procedures, they were initially summoned by the Property Managers on behalf of the Rector and General Manager and for the following meetings by the design team directly by email.

## Quantitative and Qualitative data collection

One of the initial tasks was to review the surface indexes and ratios of the existing fragmented and obsolete campus to achieve the servant spaces rationalization in the current facilities, often proliferated over the years without integrated planning. A benchmark analysis was carried out on the standards of gross floor area per student in the most recent and innovative scientific campuses worldwide. That initial information drove the team to the conclusion that the foreseen criteria for the new complex should be more compact and rationalized to ensure sustainable maintenance costs over the next decades.

The research team engaged participants from a broad spectrum of categories in an iterative process of data gathering, analysis and comparison at the end of which the participants should have been able to distance themselves from the current constraints and start imagining future scenarios with a new mindset.

Distinctive data gathering techniques have been used to obtain information from the different demographics. Quantitative data collection was carried out through surveys and questionnaires while the collection of qualitative data was handled through interviews, focus groups, ethnographic observations and various other tools designed on purpose like, for instance, a set of cards.

The ultimate goal of this activity was to look at the design context through the eyes of the primary stakeholders, to verify the initial project hypotheses and to collate all the information into the meta-design brief of a contemporary integrated campus.

In the preliminary stage of the research, the Executive Team of the Università degli Studi di Milano commissioned a benchmarking to collect the first set of quantitative data related to the science faculties of the future campus. Starting from these figures, the team of architects and designers from the Politecnico di Milano launched an exploratory activity of the existing campus faculties to verify the data and integrate them with qualitative ones.

In the following stage, activities of interpretation, interaction, and comparison were implemented in collaboration with the Property Management team to fully understand the relationship between the different functions of the current campus and the future space requirements, including the issues generated by the buildings decay.

The Department Chairs and their delegates appeared as the main interlocutors for their ability to provide the figures - even though fragmented and in progress - in the most relevant thematic areas of the project: departmental laboratories, didactic laboratories, and didactic classrooms. Forms, developed on purpose, were presented and explained during a joint meeting and then distributed to the Chairs to be completed autonomously with the aid of the department staff.

The research team moved then to a zoomed-in analysis of the different core functions of the campus for which a stronger engagement of the final users of the spaces was highly desirable. The complexity of the system, which comprised people and logistics fluxes from departments as diverse as biology, food science, pharmacology, chemistry, geology, physics, mathematics and information technology, was even enhanced by the dramatic changes caused by the advancements in learning and research methodologies to the spatial design of higher education facilities.

Two kinds of workshop activities were conducted: the first aimed at including students in the design process, the second, more complex, at involving the academic staff in the process of collaborative design.

Students' representatives were gathered in two meetings: during the first, the research team explained the planned activity and their role of spokespeople and intermediaries between the Politecnico research group and the enrolled students. They also asked the participants to fill in diaries to gather more detailed information (Fig. 1). Also, a password-protected Pinterest board was set up to collect pictures of the best case studies of worldwide learning spaces suggested by Erasmus colleagues, along with a visual narrative, to be told through images and shots, of unsolved issues in their experience as students.

The second meeting was called to collect and discuss the information. While the students' representatives had responsibly accomplished the assignment of filling in the notebooks with suggestions also gathered during informal talks with colleagues of different courses, the social media channel revealed unsuccessful probably due to the complicated process of authentication.

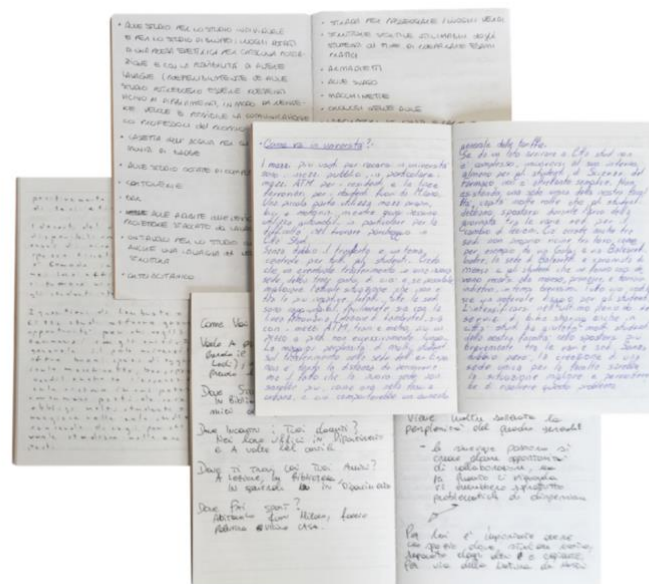


Figure 1 – Sample of the diary notes filled out by the students' representative.

The diaries' notes were then discussed, classified and interpreted during a plenary session with the Politecnico team (Fig. 2).

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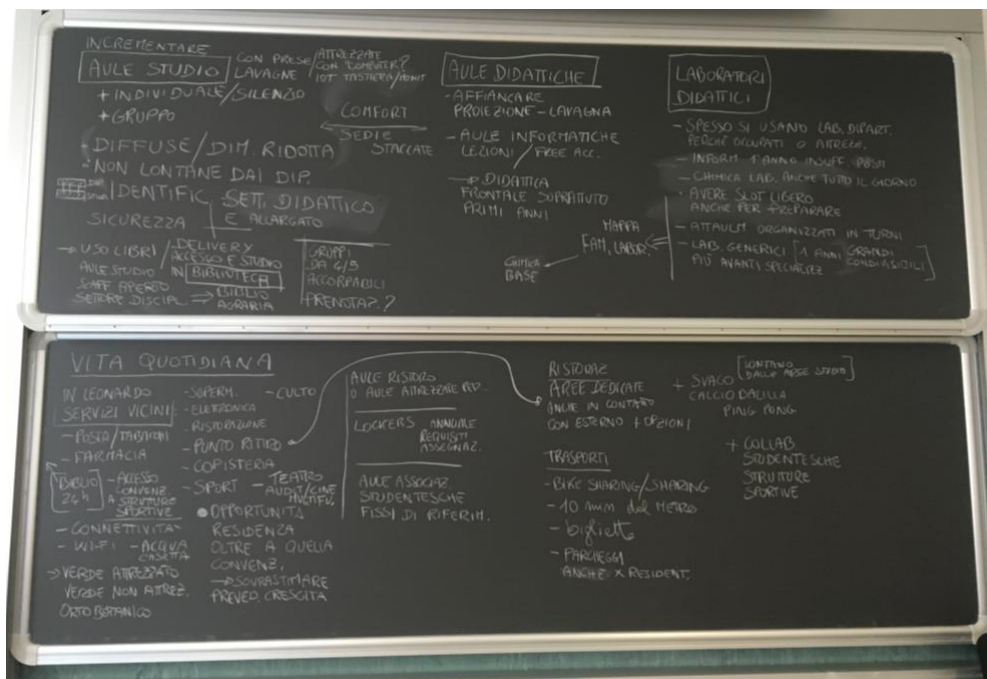


Figure 2 – The plenary session to discuss, classify, and interpret the diaries' contents.

Further qualitative data collection was accomplished through a process of Ethnographic observation of participants in their work context.

Finally, a more detailed account of the cards' method used by the academic staff is given in the following section, due to their relevance in the context of the Service Design discipline.

## Cards

The workshop activities planned to involve the academic staff in the design process were organized in four consecutive weeks before the summer holidays. Chairs and appointed representatives from more than one department were invited to focus groups according to the existing or possible multidisciplinary collaborations (Kelsey & Labov, 2013). The general purpose, in fact, was to have them working and reasoning not only on the characteristics of the different laboratories and ancillary related spaces but also on the facilities and services potentially shared among various departments.

The card deck tool has been a support to facilitate interactions and trigger unprecedented conversations between different departments' members (Sanders et al. 2010). Participants were invited to look beyond their current state, creating future scenarios able to shift deep-seated habits and behaviors toward multidisciplinary interactions (Sennett, 2012). The workshops aimed to get an overview not limited to the characteristics of the different spaces but also of the level of adjacency or separation between them. Also, the tool provided the chance to switch roles: non-designers became "professionals of the everyday experience" (Meroni, 2007) with the aid of the Politecnico team members as facilitators; vice versa, designers could step in the shoes of science researchers and professors (Sleeswijk Visser et al. 2005). The card deck tool is not an innovative tool per se: IDEO launched a very successful deck of method cards (IDEO, 2003) to be used during co-creation workshops to trigger suggestions through signs, images, and questions or to generate new ideas from general insights.

The pack designed for this project though introduces an unprecedented integration of synthetic quantitative and qualitative information in the same format (Fig. 3).



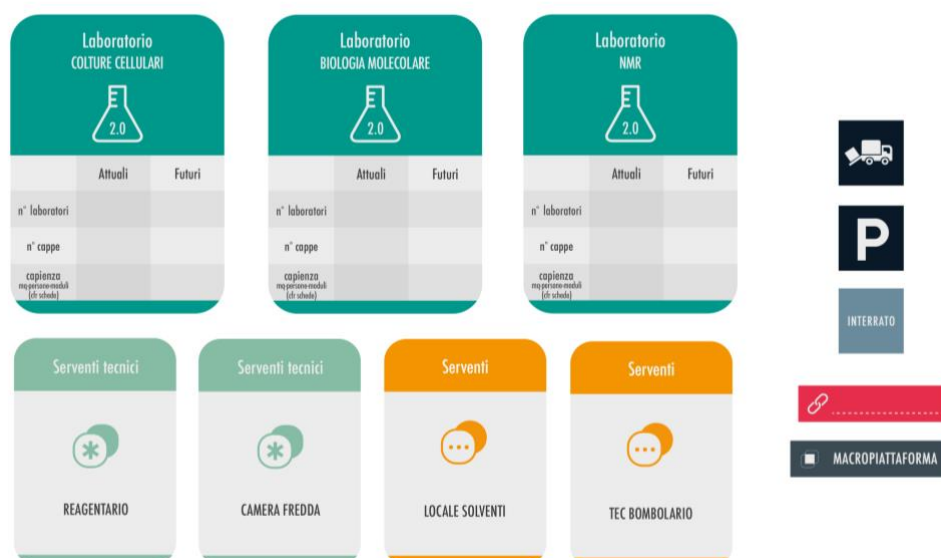


Figure 3 – Sample of the color-coded cards

Three types of spaces are represented through distinctive kinds of cards: research laboratories are color-coded as dark green, ancillary working spaces are light green when nearby the lab, orange if shared by the laboratories of the same level or building.

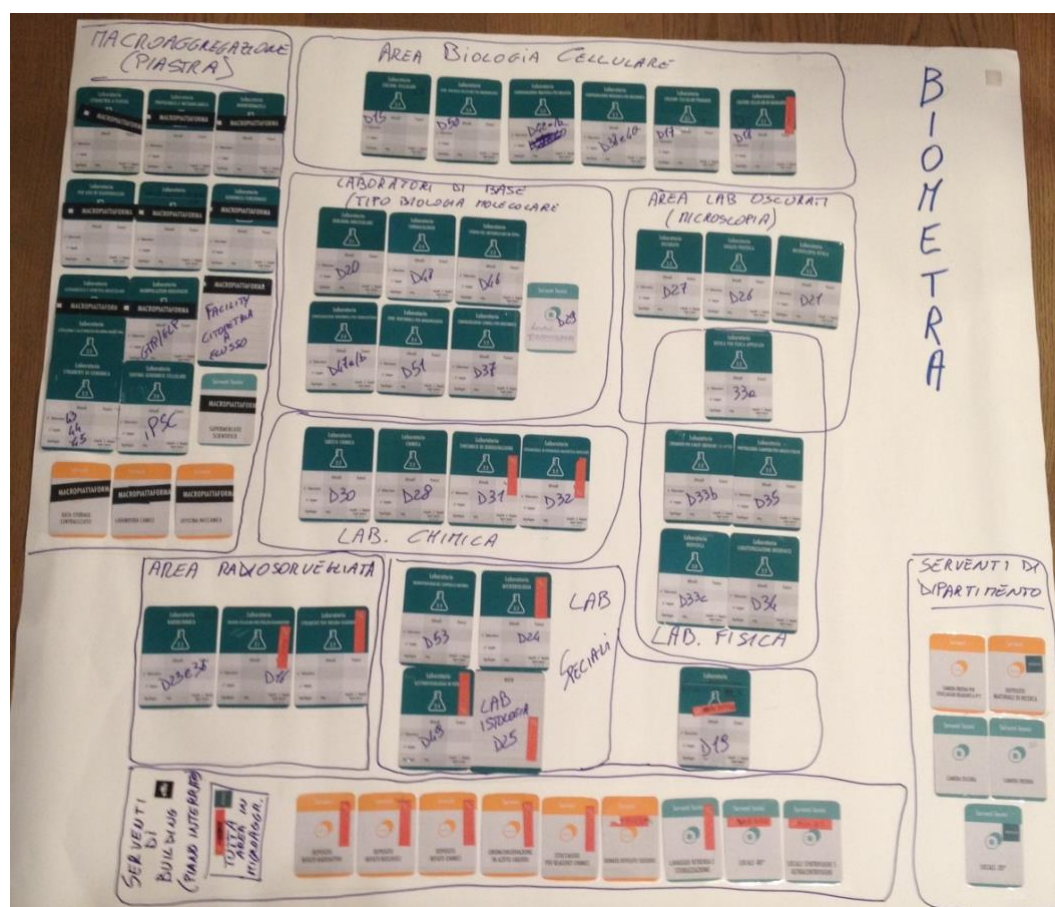


Figure 4 – The color-coded cards clustered by the workshop participants

Each participatory workshop started with a quick preliminary introduction, to give simple instructions and samples of the expected activities. The clustering of the cards into families was then completed during workshops organized autonomously by each department in the following 3-4 weeks. Eventually, a strategic conversation between departments considered similar (and therefore convened at the same time) was started to check some of these could be shared.

Before the beginning of the workshops, a check of the completeness of the card deck led to the decision of providing blank cards for editing or adding new desired spaces in real time. Also, appropriate stickers (Fig. 3) have been distributed to add further indications about the possible location of the area at the underground level, requirements for specific logistics accessibility (e.g., parking facilities), and the degree of potential sharing at the departmental, faculty or campus level.

## Results

We provide here a chronological account of the research development that is represented in the timeline below (Fig. 5) with the relative outputs.

The first phase, from February to April 2017, resulted in the completion of the first version of the meta-design tool describing the general concept of the campus, and its physical and social relations with the city. The guidelines were, in fact, to be included in the competition documents for the Arexpo SpA public tender concerning the master planning and development of the broader Expo 2015 Area. This very first edition involved only to a limited extent the actual stakeholders from the Università degli Studi di Milano. It was developed mainly through interviews with specialized international designers and deans, a bibliographical research on the current global debate about higher education facilities, and contemporary innovative case studies.

Furthermore, a first set of forms created on purpose was distributed to the Chairs to gather the preliminary quantitative data related to the academic staff, their mobility habits and the surfaces of research and educational spaces. The fill-in process carried out autonomously in the following weeks was completed by the Departments' Chairs, and the documents were delivered by the end of March.

At the same time, an architectural firm that was assigned with the task of testing the feasibility of the new campus program developed three different areas of the former Expo 2015 site exploring different possible layouts.

A first meeting with the Chairs and the Academic Senate was organized to present and approve the first document.

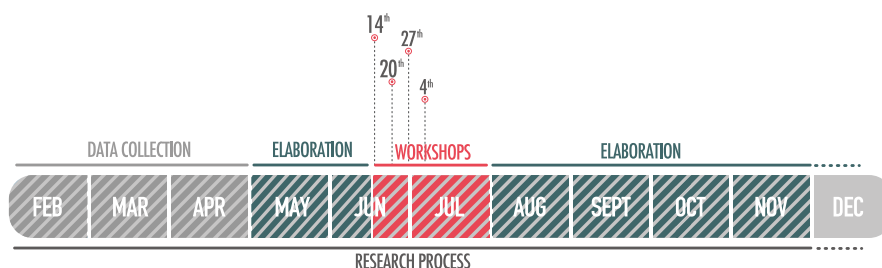


Figure 5 – The Project Timeline

The second phase, which started in May 2017 and is still in progress, will produce the second version of the meta-design tool with the definitive set of requirements for the development of the preliminary design of the campus. During this period the workshops were organized for the application of the cards tool as well as for the presentation of new sets of forms

developed on purpose were distributed to the Chairs to collect new quantitative data concerning the research spaces. The booklet will also include a diagram representing the spatial organization, the shared activities, and services, and the spatial relationships among the buildings (e.g., the degree of adjacency, location above or below the ground, required infrastructure, etc.) that emerged from the workshops and the bibliographic research conducted.

## Outcome analysis

The results achieved through the second phase of the research development, albeit still ongoing, look promising for the participative approach adopted. The initial goals of rationalising the servant spaces of the existing fragmented research facilities, pursuing and enhancing multidisciplinary approaches and a cross-fertilization in research programmes were reached through the card game tool that triggered a new mindset and innovative projects in the university research staff, even activating “adversarial collaborations” (Kahneman, 2011). The department representatives, though initially baffled but also amused by the apparently childish game, soon acknowledged the potential benefit of using the tool to make tacit knowledge explicit, shared, and negotiated. The open discussion and rethinking of the research methods and practices led to the establishment of new partnerships and activities that can take advantage of the equipment’s concentration in a macro-platform characterized by highly specialized areas.

## Discussion and next steps

From the benchmark activity conducted on the worldwide standards of gross floor area per student emerged the necessity to develop a coherent system of interconnected services mutually reinforcing through collaborative practices. In the next steps, we are going to collect best practices of university campuses’ services combined in networks with the aim of generating a scenario framework for the project.

Through on-field research, the cases collected should be a mix of various characteristics, e.g., service models capable of breaking the discipline silos and fostering multidisciplinary interactions; substituting the ownership of goods with the access to the relative function; being accessible to citizens on evenings, weekends and holidays to avoid the “gated campus” effect.

The data collected will be analyzed and used to build an integrated scenario for the new campus where services can overlap, amalgamate and share resources to create a robust symbiotic network.

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# Service design principles for organizational well-being: Improving the employee experience through design thinking

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## Abstract

The aim of this paper is to link Service Design to organizational well-being and propose a set of design principles that can be adopted by both designers and managers responsible for the design of organizational services that aim at improving employees' well-being. Through a qualitative study, we conducted a cross-context analysis of well-being initiatives developed in three companies operating in different industries. By applying a science-based design perspective approach, we were able to derive a set of seven design principles. We highlight the importance of including these principles in the process of designing services in organizational contexts using Design Thinking, in particular services oriented to employees' well-being, as well as considering their application in broader contexts in which services may play a crucial role.

**KEYWORDS:** service design, design thinking, organizational wellbeing, employee experience

## Introduction

One of the most important issue for managers and scholars alike is how to enable people to express the maximum of their potential in the work environment and, at the same time, make their contribution compatible with a rich and rewarding personal life. In more specific terms, this issue is often articulated as the importance to pay attention to employees' well-being as well as their ability to manage the interface between work and other areas of life. The existence of conflict perceptions between these two areas can, in fact, lead to severe reductions in individual well-being from multiple points of view: at the individual level (increased depression, burnout, and physical stress symptoms), the family sphere (reduced satisfaction within family and life in general), the work environment (reduced performance, satisfaction at work and increased turnover). In a recent report by Deloitte (Trends, 2016)

based upon the responses of 7,000 executives from 130 countries, 92% of the HR Senior Managers and Directors have mentioned as top priority the need to re-think and re-design their organizations to improve employees' well-being. Such evidence makes it very important for companies to understand fully what people's needs are and to investigate those elements of the organizational context that more than others affect the state of well-being.

Furthermore, 79% of the CEO's and HR Directors consider a priority the integration of Design Thinking in people management. Design Thinking in fact refers to a human-centered approach to innovation and problem solving that puts the people and their needs at the forefront of the design process. According to this approach, organizations should consider employees as their "humans", around which they can frame the right problems and design the right solutions. The idea is to think in terms of employee experience, enriched by the constant search for concrete needs rather than ideal, general and hypothesized ones.

Despite these calls, the integration of design thinking approach into the design of well-being initiatives is still in its infancy. Our paper aims to address this gap.

We know the value of initiatives devoted to increase employees' wellbeing is undeniable as demonstrated by a recent McKinsey and Company study (Rizzi, et al. 2013), which shows how the value perceived by employees in relation to corporate welfare programs can even exceed the 70% of the company's costs involved to create them. However, these initiatives, even in the case of *flexible benefits* that allow employees to choose from a set of services promoted by the organization, are often carried out in a standardized way, based on *categories* of conventional and predefined needs (e.g. workplace childcare). We claim that there is an opportunity to design services that are in relation to the specific organizational context, addressing needs that are employees centered and more suited for the particular context individuals live and work in. By adopting standard solutions, well-being remains only a hope rather than a designed outcome.

When we use the term services in organizations, we refer to *core* services (linked to the transformation of input into output) and *non-core* services (e.g. facility services or non-monetary benefits). For the purpose of this study we concentrate on *non-core* services and distinguish them as 1) facility services (e.g. everything that concerns the work environment like cleaning, air-conditioning, office layout etc.) and 2) individuals services related to non-monetary benefits that an organization offers to the employees (e.g. flexible working hours, insurance programs, discounts, training opportunities, laundry, childcare etc.). In this paper we want to provide to designers that operates in the organizational contexts a way to explicitly consider well-being as one of the outcome of their designed services, through a set of design principles that connect people's needs to the context-person relation rather than promoting standard categories of services. Through a qualitative study conducted in three organizations operating in different industries, we applied a science-based design perspective approach to understand how organizational well-being is perceived by employees today and how human-centered design could contribute to improve the workplace experience. The data collected allowed us to define seven design principles that explicitly consider (organizational) well-being since the very beginning of the design process to inform and guide the different design choices. The Design Principles can be used in any Service Design project that uses a Design Thinking approach after the problem definition, to shape the solution that can be brought in the organizational context. Therefore our innovative results open multiple opportunities for intervention in designing services and experiences.

## Approach

Well-being is a popular notion in today's society and it has been studied by several streams of literature like for instance, psychology, management, and transformative service design.

These streams however, developed in parallel and rarely met.

Despite the several attempts of scholars to define well-being, it still remains a blurred and intangible notion, as it is affected in a complex way by multiple subjective and objective



factors. The psychological state and the cognitive sense of satisfaction with life seems to be of primary importance to influence one's well-being. A person's physical health, personal beliefs, social relationships, life conditions (e.g. wealth, safe context) and the relationship to the environment are other fundamental variables that characterize well-being. Recently, Dodge et al. (2007) provided a definition of stable well-being as something that occurs when individuals have the psychological, social and physical resources they need to meet a particular psychological, social and/or physical challenge. When individuals have more challenges than resources, the see-saw dips, along with their wellbeing, and vice-versa (Dodge et al., 2007).

Taking this definition as a starting point for our research, we draw on the model proposed by Rath and Harter (2010a, 2010b). The authors theorize well-being as composed by five elements: Career, Social, Financial, Physical and Community. These elements can suit the purpose of the study and frame the boundaries of our inquiry. We deliberately excluded the element of Financial Well-being (and other monetary aspects) to focus on the elements more challenging and interesting from a design perspective.

Considering the latest discussion in transformative service research (TSR), which represents research that focuses on creating “uplifting changes” aimed at improving the lives of individuals (both consumers and employees), families, communities, society, and the ecosystem more broadly (Anderson et al. 2013), we aim to create a link between different literatures (psychology, management and design) that are still hardly connected and thus contribute more to the TSR, by exploring the relationship between service design and well-being.

To do that we adopted a science-based design perspective currently emerging in organizational (Romme, 2003; van Aken and Romme, 2009) and management research (Van Aken, 2005) with the aim to reduce the gap between managerial practice and academic research (Baden-Fuller, 2008; Heracleous and DeVoge, 1998). Design involves human beings using knowledge to create what should and could be, while science develops knowledge about what already is (Simon, 1996). A science-based design approach connects the emerging body of research to the pragmatic, action-oriented knowledge of managers (Romme, 2003). Research and practice are linked by means of needs and design principles that can be grounded in research to create solutions to be subsequently tried out and implemented in practice (Romme and Endenburg, 2006).

Following the science-based design perspective, we describe the different steps used to conduct the study and define the design principles. We will then briefly introduce a pilot case study in which the design principles were applied using Design Thinking with the result of a service concept to improve a digital system used in a large organization operating in the Infrastructures and Cities, Energy, Healthcare, and IT industry.

Given that Service Design represents a human-centered, creative, iterative approach to the creation of new services (Blomkvist, Holmlid, and Segelström, 2010) and that services affect our lives and our well-being as individuals, employees, families, and communities (Anderson & Ostrom, 2015), we argue that designers should deliberately consider well-being as a target in their service design process. Designing a service with well-being in mind means bringing to a full extent its function - also main tenet - of being human-centered. Thus, we suggest that when conducting design research, well-being should be considered as much as needs and problems are. With this perspective, a gap emerges between the intention of designing needs-based solutions that eventually affect well-being and the explicit consideration of it throughout the entire process.

By combining qualitative and design research techniques we conducted an explorative study into five main stages following a science-based design perspective (fig.1).

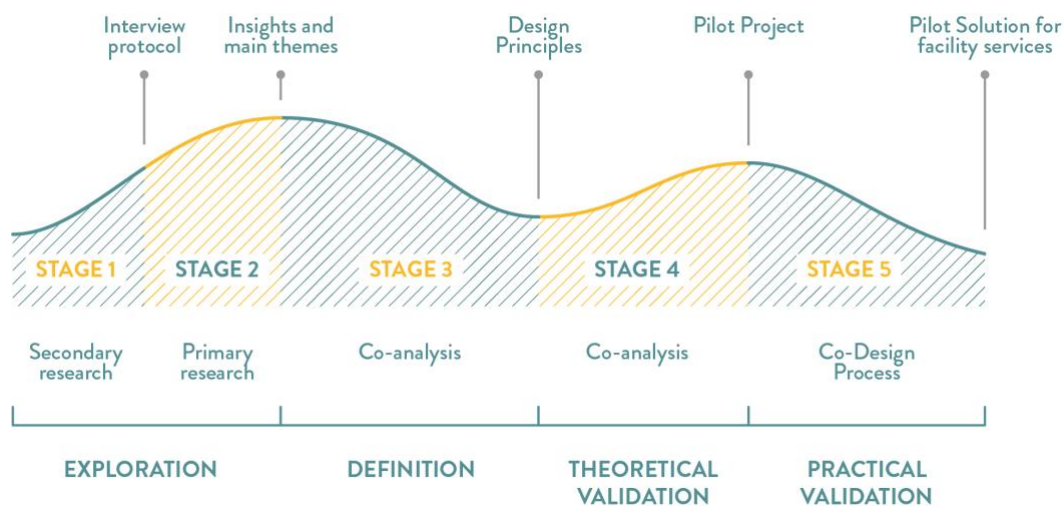


Figure 1 – Science-based design perspective process used for this study

The first stage of secondary research was followed by a second stage of need-finding in which we used qualitative research methods to investigate which working factors (e.g. safety, technology, physical environment, etc.) as well as non-working factors (e.g. community issues, family and social tensions, etc.) influence well-being and how. We conducted three case studies and performed 60 individual semi-structured interviews involving people at different stages of their career such as Junior employees, Senior employees and Managers. The case studies involved organizations in the manufacturing, consulting and insurance industry. The data collected were organized into three main categories: spaces, interactions and relationships, services and work-life balance.

In the third stage of co-analysis and initial synthesis we mapped the recurring factors considered to be meaningful by our informants and identified the main patterns, interdependences, themes and insights related to well-being. The approach used for the creation of the insights was abductive sense making and reframing (Kolko, 2010). This stage was not sequential, rather, it was iterative throughout the second stage. This process led to the development of a set of seven design principle. A first preliminary validation of these principles was conducted with a scientific committee composed by HR managers and University professors on the topic of organizational management and well-being. This fourth stage let us explore which potential organization could be contacted to practically validate the design principles and with what kind of pilot project.

A fifth stage was orchestrated to test the design principles on the field with a pilot project conducted with an organization operating in the Infrastructures and Cities, Energy, Healthcare, and IT industry. This pilot project focused on the first of the two categories of services in organizational contexts related to well-being identified for this study: facility services. The project involved a Design Thinking process and some selected methods. As follows, we will describe in detail the different stages.

## Stage one – Secondary Research

The literature on well-being has proposed various models to articulate what is meant by well-being and what are the dimensions that describe it (Wright & Huang, 2012; Ashkanasy, Ayoko & Jehn, 2014; Nieuwenhuis et al., 2014; Elsbach & Pratt 2007; Dodge et al. 2012; Van De Voorde et al., 2012; Grant et al., 2007; Gruber et al. 2015; Sturges, 2012; Rath and Harther, 2010a). Rath and Harter (2010a, 2010b) describe well-being as a combination of our passion for what we do every day, the quality of our relationships, the security of our economic situation, our physical health and our pride in contributing to the communities we belong to. The fundamental concept of discussion is the complex interdependences between the different aspects of our lives and how all of them should be taken into account when we



evaluate our own status of well-being. Tosi and Pilati (2011) describe well-being and organizational health as those conditions within an organization that promote, maintain and improve the physical, psychological and social well-being of people. Accordingly, organizations try to enhance employee well-being in various ways, ranging from professional development to healthcare benefits and free employee assistance programs. For the purpose of our research, we clustered the categories that scholars and professionals were referring in their studies in three macro-categories (fig.2) of reference:

- **Spaces:** how and to what extent the physical space of the workplace affects the well-being of individuals and groups, what initiatives are being taken to safeguard the physical health of people in different places and non-places (Augé, 1992) and what kind of experience people have in different contexts.
- **Interactions and Relationships:** how important these aspects are and how they affect the perception of well-being, what role does technology play (both in its collaborative dimension and in the support and coordination of services) and how different socialization moments can be promoted or managed by the organization.
- **Services and Work-life Balance:** how are current services responsive to the needs of people and what opportunities are there for improving working life as well as the balance between private life and work.

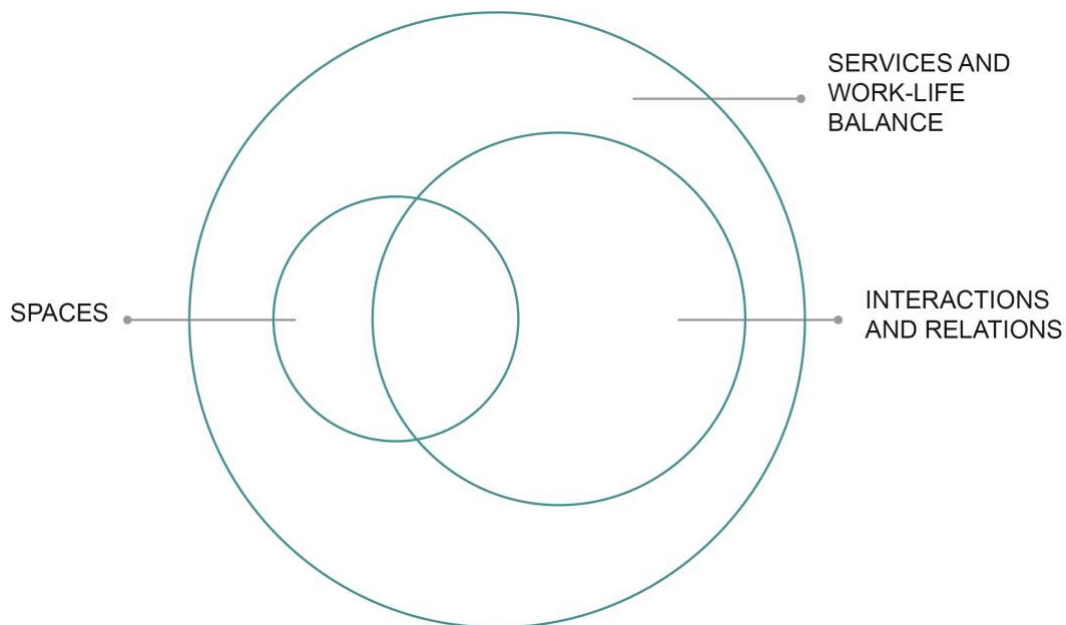


Figure 2 – Macro-categories investigated in this study

The categories should not be considered as mutually exclusive, in fact they can have areas of interdependencies that influence one another in variable measure depending on a certain context.

## Stage two – Primary Research

We conducted from November 2015 to March of 2017 three case studies in three organizations operating, respectively, in the insurance, consulting and mechatronic industry. Case studies too similar would have limited the ability to identify recurring needs, behaviors, and patterns that do not depend on the type of work or industry or organization. The Insurance company is a leading global company with franchised offices in 60 countries. We conducted our study in one Italian franchise. The consulting company is a knowledge intensive firm specialized in the design of data warehouse management, big data analytics,

business intelligence, and performance management. When we collected our data, it was undergoing a period of intensive expansion and it was awarded certifications for the quality of work conditions. Finally, the mechatronic company is a leader in the design and creation of advanced mechatronic systems for power transmission in agricultural and industrial machines. It has six production plants across two continents and we conducted our study in the main production plant.

We selected our informants in the three companies with the help of the organizations' HR managers, to have a wide collection of information on all internal points of view that reflect different behavioral patterns. In general, professional role have been divided into three distinct profiles such as junior employees (0-5 years of experience in the industry), senior employees (5-30+ years of experience in the industry) and Managers.

We conducted 60 individual semi-structured interviews (20 for each case study) at each organizations' site. Interviews lasted between one and two hours, according to the informants' level of involvement. Interviews were recorded and transcribed verbatim. The interviews involved 35 men and 25 women, with experiences within organizations ranging from a few months up to 37 years old. More specifically, beyond having multiple conversations with the top management of each company, we interviewed 20 employees in the insurance company, 10 employees working in staff positions and 10 production workers in the main plant in the mechatronic company and 20 consultants in various career stages at the consulting company. Consistent with the principles of qualitative research (Strauss and Corbin, 1990), protocols have evolved to accommodate and analyze topics that have emerged as relevant during the field research. The concept of human-centered design is fully applied at this stage in which the focus moves completely on people by observing them, actively listening to them, and empathizing with them to be able to interpret their thoughts, quotes, and emotions. The importance of this phase is to make unexpressed needs emerge, stimulating an open and collaborative conversation in order to catch interesting insights, or research hints that often arise thanks to the interpretation between what the person said and what the interviewer observed.

We grouped different insights across the case studies into recurring themes and reorganized them on the basis of the three macro-categories identified in the first stage. During the interviews, some other topics that could not be traced back to the three categories emerged spontaneously. These have been investigated and grouped separately. On the following pages, we summarize [table 1,2,3] the different categories, themes and insights which highlight all the elements that:

- have been mentioned by the informants as more relevant to their well-being;
- help maintain a good organizational climate;
- represent emerging needs as well as some critical aspects that suggest opportunities of improvement.

Similarly to the previous macro-categories, the different themes should not be seen as if they were independent. There are, in fact, interdependencies between the various components that together affect well-being. The themes do not rule out the importance of other aspects and other unquoted good practices that are already in use in organizational contexts. They simply reflect those implicit, explicit and latent needs that are most relevant to people, within the organizations explored in this research.

Each theme incorporates those key concepts that inspired one or more design principles.

themes	OPEN SPACE AMBIVALENTS ASPECTS	ENVIRONMENTAL FACTORS	
sub themes	-	CLIMATIZATION AND HEALTHY AIR	CLEANLINESS OF THE ENVIRONMENTS
insights	<ul style="list-style-type: none"> <li>• People prefer to work side by side rather than by distance</li> <li>• Breaks and distractions become critical when there are no rules that define the behavior of individuals in the different spaces</li> <li>• People need spaces for more formal or private conversations</li> </ul>	<ul style="list-style-type: none"> <li>• People perceive the same temperature differently</li> <li>• Air conditioning does not solve the problem of unhealthy air</li> </ul>	<ul style="list-style-type: none"> <li>• Cleaning services must be invisible and at the same time visible</li> </ul>
main quote	<i>"In the open space you do not feel isolated, does a lot of team, lets you circulate ideas, knowledge, is very enjoyable when work does not require extreme concentration"</i> Interview, 18/12/2015	-	<i>"There is a problem because on our floor the cleaning staff arrives at 5pm, we are in the rush hour at 5pm so she can not clean the desk because we are working"</i> Interview, 18/12/2015
design principle inspired	Design Principle n. 2, 4	Design Principle n. 2	Design Principle n. 2, 3, 4

Table 1 – Macro-category a) Spaces

themes	AWARENESS, COMMUNICATION AND FEEDBACK	KNOWLEDGE SHARING	POSITIVE CLIMATE AND SOCIALIZING	CREATIVE SOLUTIONS
insights	<ul style="list-style-type: none"> <li>• People want to be more involved in the choices that affect the different aspects of their work</li> <li>• There is the need to increase, with clear information, the awareness of the available benefits</li> </ul>	<ul style="list-style-type: none"> <li>• It is needed a management of the trade-off among the activities that generate value in the long term and results in the short term (e.g. financial, more immediate)</li> <li>• Physical interaction among people should be encouraged compared to the digital one</li> </ul>	<ul style="list-style-type: none"> <li>• It is important to socialize with different group of people</li> </ul>	<ul style="list-style-type: none"> <li>• People need spaces and moments in which to express their creative potential</li> </ul>
main quote	<i>"We knew this was done for us, but without asking us what we needed"</i> Interview, 14/12/2015	<i>The problem is that tension that sometimes is created because we are paid for hours [...] so the company on one hand encourages these moments, on the other creates a little pressure to limit them [...] an indirect pressure, in some ways a little cultural"</i> Interview, 4/12/2015	<i>"You risk losing an identity if you lose the habit of having even unstructured sharing moments"</i> Interview, 18/12/2015	<i>"To me it is very important to have mental time to diverge, so to find ideas, to find the most innovative part [...] is fundamental to the state of work wellness"</i> Interview, 4/12/2015
design principle inspired	Design Principle n. 1, 2, 4	Design Principle n. 1, 2, 4	Design Principle n. 1, 2, 3, 4	Design Principle n. 1, 4

Table 2 – Macro-category b) Interactions and relations

themes	FAMILY	WELLNESS	TIME
insights	<ul style="list-style-type: none"> <li>• People need to feel trust to who will help them in managing extra-job activities</li> </ul>	<ul style="list-style-type: none"> <li>• People need "easy access" to those services that help maintain an ideal physical well-being</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible hours can have a negative impact if they are not "controlled"</li> <li>• People need to act on different personal and social identities</li> </ul>
main quote	<p>"I think if the service was activated by the organization the people in charge would be reliable people [...] at least it must be a person I know"</p> <p>Interview, 11/02/2016</p>	<p>"There would be something that will allow you to make a healthier snack"</p> <p>Interview, 18/12/2015</p>	<p>"If you go out at 6pm, you feel that this thing is not well seen into the team, because now it seems to have become more normal to stay more"</p> <p>Interview, 6/12/2015</p> <p>"It's not that I want to have a business service that takes away your dirty shirts, that's not what I want. I do not want to end up on the weekend doing everything"</p> <p>Interview, 4/12/2015</p>
design principle inspired	Design Principle n. 1, 2, 3, 6	Design Principle n. 1, 2, 4, 7	Design Principle n. 1, 2, 4, 5

Table 3 – Macro-category c) Services and work-life balance

### Stage three – Definition

Starting from the map of needs, the most significant insights and the most recurring themes, we organized a first co-analysis workshop of the data collected to validate and define the design principles. We shared the information gathered from the research and the method used with the participants and asked them to review the transcribed interviews that we conducted. This first step was useful to set a basic level of shared empathy with the informants and possibly identify new insight from different multiple perspectives. Management and organizational behavior experts, project managers and service designers were involved in this activity. The discussion allowed us to deepen the concepts emerged from the field, analyze them from different points of view and select the most interesting one by using the dot voting technique. We identified 9 themes and 16 insights based on what the informants depicted to be as more meaningful to their well-being (Table 1,2,3). During this workshop, we isolated key ideas and revealed the connection between key elements that let us develop 7 design principles that define the important aspects to consider when designing services for well-being that will be discussed in the results section below.

### Stage four – Theoretical Validation

Following this first workshop, we organized a panel of discussion with a Scientific Committee, specifically set up at the beginning of the research project, to implement a first validation of the design principles at a theoretical level. The involvement of practitioners operating in the field of space design, behavioral architects, services designers and corporate organization, has contributed to highlight the importance of some key concepts and better define the design principle that could be used as complementary to those already existing in the service design discipline. Enriched by the important feedbacks gathered in this stage, we evaluated different organizations and possible pilot projects that could be carried on to apply the design principles and evaluate their impact in the design process.

## Stage five – Practical Validation

We conducted a first pilot project to validate the use of the design principles and the effects they can have on a design process. The pilot project was about involving an organization, in this case operating in the Infrastructures and Cities, Energy, Healthcare, and IT industry, using a design thinking approach (fig.3) to explore and address possible issues negatively impacting well-being in the workplace. We used qualitative research methods such as semi-structured interviews and observations on two different branches of the organization in two different cities to identify employees' needs. We interviewed 11 people, among employees and managers and conducted 16 hours of observation in the two different workplaces. The most relevant needs identified were clustered based on their connection to the seven design principles of well-being.

Using the design principles since the beginning of the design process helped the team to quickly frame the scope of the research, define the area of intervention and create a coherent service concept that addresses specific issues related to employees' well-being. The study took into account the needs and issues that were more relevant for this context and identified facility services as the main area of interest to investigate. In fact, the aspect of individuals services related to non-monetary benefits was already well served. The figure 3 shows more in detail the tools used throughout the design process.

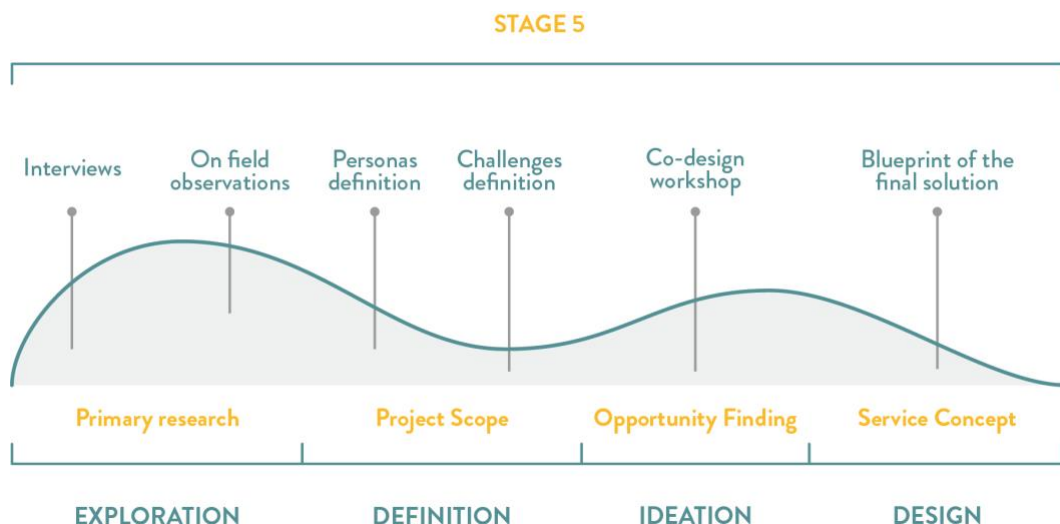


Figure 3 – Design Thinking process used in the fifth stage of the study

## Results

Based on the insights and data analysis we developed a set of 7 design principles that can extend the opportunities to enhance people well-being in organizations. We found that a number of factors characterize the employee well-being experience, thus we grouped the most relevant emerged from the interviews into 8 representative needs (consideration, trust, conflicts reduction, satisfaction, sense of belonging, stress relief, gratitude, personal and social identity) that can be satisfied when applying the design principles to the service design process. To make the principles as more actionable as possible, we indicate how each of them can positively affect one or more needs. These principles should be seen as complementary to those that guide already the service design process (Stickdorn, Schneider, Lawrence, 2011).

## The Design Principles

Below we discuss the seven design principles that suggest the key features that organizational services must have to produce positive effects on well-being. This should represent a guide for those who design or are responsible for the choices that concern facility and other organizational services (e.g. HR Managers, Real Estate Managers, CEOs, etc...). The design principles represent a first answer to the question:

### **How might we design services and experiences that create well-being for people within organizations?**

In the discipline of design, principles are concepts or statements used to organize and guide any choices that affect the content or message of a certain project. The design principles describe the most important elements to be considered to generate different solutions and help maintain a good consistency between the different iterative phases. The way these principles are applied determines the success of a design solution.

**We argue that the fact that a service can generate well-being must not be accidental, but rather must be the result of conscious and intentional choices.**

#### **Design Principle n.1: Understand needs, engage in the choices**

Giving people the opportunity to be involved in the ideation of services, initiatives and tools, means taking more conscious choices that consider real needs and positively impact well-being. The level of co-design should vary depending on the problem an organization is dealing with and may require different levels of involvement for the employees. The important aspect is to communicate the various implementation phases of a certain project, whether related to facility or people, and to return feedbacks that would justify the organization's final choices.

Satisfied needs and positive impact: increase in the sense of consideration by the organization; strengthening the trust in management; conflicts reduction; increase in satisfaction; increase in the sense of belonging.

#### **Design Principle n.2: Communicate and create awareness**

Communicating clearly the information, the values and the results that pertain to various service initiatives, is crucial. In fact if a service meant for employees is poorly communicated may have adverse effects rather than positive ones (e.g. it may result in a underutilization of the service or even discourage the employee participation in co-design activities). Awareness, designed as a component of a service, can also explicitly address the promotion of good behavioral habits directly related to the physical well-being of people (e.g. healthy nutrition, posture, prevention campaigns, etc...).

Satisfied needs and positive impact: increase in the sense of consideration by the organization; strengthening the trust in management; increase in satisfaction; increase in the sense of belonging; stress relief.

#### **Design Principle n.3: Anticipate expectations**

It is important to know what are the expectations of people not to disappoint them and to plan accordingly to overcome such expectations.

Satisfied needs and positive impact: increase in satisfaction; increase in the sense of gratitude.

#### **Design Principle n.4: Encouraging human interaction**

It is important to develop relationships in and out of the work environment. The services designed within an organization should facilitate the interactions among people and consider this a priority even when digital touchpoints are part of the employee experience.

Satisfied needs and positive impact: conflicts reduction; increase in the sense of belonging.

#### **Design Principle n.5: Adapting over time**

Designing for the entire service life cycle, that is taking into account the changing factors that may occur over time: (a) the experience of use that the service produces, (b) the individual priorities, and (c) the individual and group expectations. Closely related to this aspect is the design of systems to monitor the intensity of use of the services over time.

Satisfied needs and positive impact: increase in the sense of consideration by the organization; strengthening the trust in management; conflicts reduction; increase in satisfaction; increase in the sense of belonging.

#### **Design Principle n.6: Consider the variable preferences of people**

When designing services, it is necessary to consider the need for people to delegate some services in certain circumstances and, on the contrary, to maintain some ownership and an active role in managing them, in others. Preferences may vary depending on the service and context. The proposal of a service should give the employee the opportunity to choose whether to use the service and when.

Satisfied needs and positive impact: increase in the sense of consideration by the organization; increase in satisfaction; strengthens personal and social identity.

#### **Design Principle n.7: Differentiate the accessibility to services**

Services should be easily accessible in terms of costs, time of access and personal needs. It is important to understand how the same service can meet the same need through different modality of delivery (e.g. a convention with a particular gym rather than using the corporate gym).

Satisfied needs and positive impact: increase in the sense of consideration by the organization; strengthening the trust in management; conflicts reduction; increase in satisfaction; increase in the sense of belonging; stress relief.

We have defined design principles that can help not only to design better services, but also configure better moments of interaction and spaces. The design principles suggest that there are different elements in these three areas (spaces, interactions, services) that are interconnected and characterize the experience of people within an organization.

### **Concluding remarks**

In this research, we have explored the most influential factors affecting well-being in organizations by analyzing three different case studies.

The most important contribution is that we highlight opportunities for the Service Design discipline to improve the impact of human-centered solutions and the importance of

creating a new paradigm that takes well-being as central objective in the disciplines of design that aim to enhance experiences in the workplace. The argument is that an ‘excellent’ experience is one that aims to improve people well-being besides satisfying basic needs and solving functional problems.

The results of our study are particularly relevant in today’s organizational contexts characterized by increased complexities. The focus to improving people well-being has changed and is constantly evolving. Expectations of well-being and job satisfaction are inevitably changing in time, too. The working population is currently composed of five generations that bring with them different values and different preferences. This has also influenced the offer of incentives and benefits that have become increasingly flexible until reaching a *tailor-made* dimension (Clavarino, 2015). It is therefore critical that, within the company’s welfare policies, a particular consideration should be given to well-being in the short and in the long term. Designing for well-being means to remember that

*what is motivating at a given moment becomes then a hygienic factor. One factor, therefore, that if not present creates dissatisfaction, but that if it is present it is no longer able to generate the same initial motivation. In some ways, well-being must be considered in relation to its life cycle. (Anonymous, 2016, interview)*

Finding a balance between life and work, it means having an awareness of how to manage both spheres independently and responsibly. The organization plays a key role in creating and supporting a culture of mutual trust that can grow over time.

*Cultural values should be rooted on a fundamental concept: life at work and private life must have the same dignity. (Anonymous, 2016, interview)*

The design principles for well-being that we propose are one of the tools that can be adopted by an organization that follows a Design Thinking approach to reach these goals. It is also equally important, as mentioned before, to initiate continuous iteration processes to monitor the services developed and to understand the effects on well-being over time. Lean and flexible approaches such as Design Thinking can therefore be a valuable support for decisions not only regarding product, service, and process innovation, but also for incentives and reward systems (both monetary and non-monetary benefits). They can represent a key strategic lever for businesses that intend to increase the organizational well-being with mutual benefit over the short as well as the long term.

Despite the contributions that our design principles offer to literature, our research is not without limitations. During the pilot project we conducted, we could not really measure the impact that the design principles could have on the employee experience of the organization as the final solution remained at a conceptual level. Even if when conducting the primary research we gathered a large amount of consensus from both managers and employees that the proposed solution would improve the physical, psychological and relational well-being within the organization, we are conscious that further investigations and iterations on the application of the design principles for well-being is needed.

We suggest that there are a number of interesting research questions inspired by our study. Some examples include: How can we measure the impact of Service Design in organizational well-being? What would it take to design for short term versus long term well-being? What other implications Design Thinking and Service Design have on well-being beyond organizational context? What other factors should we consider?

We invite future research to involve HR, psychology, management and design scholars to approach the topic of designing organizational well-being in a more holistic fashion, to achieve a better understanding of how organizations, managers and designers can address new challenges while improving the quality of life in organizational contexts.



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# Designing spaces and services. An experimental project for student dormitories: Collective experiences, connected lives and linked places

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## Abstract

This paper describes an experimental teaching project for a student dormitory building in Milan, Italy; and through this applied project the paper presents possible relationships between spatial (environment and experience design) and service design. A human-centered design process was used, exploring the potential of creativity and design thinking while co-creating with the actual people involved in the project – the dormitory students, staff, and the local community members. The process and the methodology used were very important, especially the co-design activities: the dorm, in fact, was designed by the PSSD students in the studio for the students and with the students of the dorm. The dormitory, as a part, like most university campuses and schools, as a whole, can be considered an urban hub through which synergistic relations take place between the structure of the dorm and the neighbourhood and vice versa. Six interesting scenarios designed by students that explore the sense of community hub and a place of social cohesion are included.

**KEYWORDS:** service design, spatial design, co-design, design education, community hub

## Introduction

Design today faces complex problems and situations. It has a holistic approach (Buchanan, 1992), and therefore, more and more seemingly separate areas of intervention are overlapping and intersecting. Design is changing from a single craft-oriented discipline into one that is more robust and multidisciplinary, connected with social environments, products, services, systems and brands (Friedman, 2002; Muratovski, 2010). Disciplines such as the design of spaces and services often require interactions in the various stages of the project. Service Design, which always combines the design of tangible and intangible aspects (Meroni & Sangiorgi, 2011), in a hyper-connected, digital and ephemeral world like ours, needs more and more tangible, secure, stable, and physical aspects. A clear example of this strong need

for dialogue is the increasingly widespread need for digital services to intersect physical space, as in the case of Amazon delivery sites, for example.

On the other hand, Environmental Design, especially in the design of public spaces, requires a strong user and use definition; especially with more faceted and changing functions, and with built relationships needed to be defined. An architecture that extends or exceeds its building limits transforms to produce energy of intangible qualities that change over time. (Branzi, 2006)

Every day, the relationship between these two disciplines becomes more fundamental, productive and important. Overlap and integration between the tools used by both disciplines is also important in the design process, including in the education context. Adding and enriching the storyboards and user journeys (tools adopted by service design approach) with more spatial details will transform them as useful tools for representing the environment, and its flows, its uses and its functions.

Also the use of co-design tools can help the relationship between spatial and service design approaches. “Co-design offers a flexible portfolio of soft system methodologies which ensure that the voices of the key actors and stakeholders are heard and integrated into the system being designed. This participation in the design process is essential to maximise the satisfaction of all parties involved in service use or provision.” (Fuad-Luke, 2012)

Additionally, “co-designing our services could be the next critical evolution of service design to ensure the sustained integration of human and natural ecologies for our cities” (Fuad-Luke, 2012).

## The Students' Dorm as a Place of Social Cohesion

In this process of interplay between the two design fields, as mentioned in the introduction, a special role is found in the public interior and exterior spaces. In fact, there are aggregators of different functions that can be considered as fulcrums for inner neighbourhoods and urban areas. In particular, university campuses, schools, and student residences can be considered as urban hubs through which synergistic relations take place between and within the space-service concerned, and the surrounding urban areas.

Student dorms can be considered as community hubs, as inclusive locations open to different social groups and urban populations. They can host services and activities related to daily life (training, work, etc.), but above all they can be places with great flexibility in terms of scheduling and access; they can be places that remain open, active, and vibrant in different time zones, and can become a living reference point in the territory.

Focusing on schools, campuses and university residences, understood as portions of cities that traditionally relate to a practice of well-defined users (students, faculty and staff), today means trying to develop a model of action and integration in a context that can innovate not only the image, but also the activities, of the campuses themselves in the city.

If we talk about powerful relationships between the residence and the surrounding area, we can definitely identify different types of beneficiaries: first of all, the university students who benefit from the opportunity to develop social relations between them and the local community to access resources and services, and that can be promoted by the students themselves in synergy with the actors of the local community.

The other group of beneficiaries are the residents of the neighbourhoods who will find in the neighbourhood the opportunity to access resources (tangible and intangible) that are not present or are poorly represented in the area - such as new services, functions, and activities offered by the dorms and also open to the neighbourhood; plus new educational and cultural skills – and the opportunity to develop trust and exchange relationships that will enhance the social cohesion and empowerment of the local community. Particularly when the residences are located in peripheral, fragile and/or problematic areas in the city, it becomes essential to offer the activation and development of new services and public utility activities and the creation of new socio-cultural structures and services with the aim of reducing the situations of social isolation through the creation of aggregate and attractive structures, environments, and experiences.

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Specifically, in this case, we reference community hubs in the process of transforming abandoned or underused spaces into multifunctional places that host culture and creativity activities. These are regenerated spaces and structures that share some common features: they are inclusive locations open to different urban populations; they are flexible in terms of use and activities by providing answers to different needs; they are flexible in scheduling and accessibility which transforms these sites into landmarks for the local neighbourhood; they are places and services often born from co-design and co-management by local communities, residents of neighbourhoods, public and private associations and bodies; they are engaging local communities and places of generation of new social practices; and they are places that propose themselves as social aggregators, but also as promoters of new job opportunities, and generators of new economies.

The activities offered by community hubs can be multiple and related to different fields: culture and creativity; support for families; technology; communication; leisure and sport, education and training; art; work and new businesses; sustainable consumption, etc.

## Environmental and Experience Studio: an Educational Trial

How can place, space and experience be potent and memorable components of a comprehensive service and system design approach? That is the basic question that was asked to the students of a Service Design and Environmental Design studio (by Prof. Luisa Collina, Prof. Peter Di Sabatino, Prof. Laura Galluzzo, with Ilaria Bollati, Claudia Mastrantoni, Vanessa Monna as Teaching Assistants) at Politecnico di Milano – with its specific focus explored how PSSD and Environment and Experience Design can merge. The studio engaged an international mix of 38 students, including Turkey, Bulgaria, Italy, Thailand, Greece, India, Iran, Colombia, Austria, China, Egypt, Serbia, Spain, Germany, Mexico, Peru, Portugal, Scotland and Malaysia. The students were divided into 11 working groups, creating an interdisciplinary mix of thinkers, makers and doers that also mixed students were from different educational background, such as interiors, product, communication, sustainable design, engineering and architecture.

The studio worked with the existing - and yet to exist - products, services, systems, environments, and experiences at the 'given context' (the dormitory building and its context) in a sort of prototypical manner with a particular focus on public and communal spaces, way-finding, and overall communications / media.

*It is not enough to see architecture; you must experience it. You must observe how it was designed for a special purpose and how it was attuned to the entire concept and rhythm of a specific era.... Seeing demands a certain activity on the part of the spectator. It is not enough passively to let a picture form itself on the retina of the eye. The retina is like a movie screen on which a continuously changing stream of pictures appears but the mind behind the eye is conscious of only very few of them (Rasmussen, 1964).*

The studio explored and practiced the design of environments and experiences as leading components of a comprehensive product/system/service design proposal. The importance of place and space was therefore critical to understand, to manipulate and to create. To do so all the students tried to see space, feel space, and imagine space, as well as see and understand the scale and sense of the environment, and to have the ability to manipulate or create space.

The triad of Space / Object / Surface is fundamental to us as humans, and certainly to us as designers, strong familiarity, understanding and ability in all three areas are vital for creative excellence, innovation and experimentation.

The studio developed familiarity, understanding and ability in a variety of ways, and through a variety of processes and tools. Readings, lectures, in-situ visits, case studies, prototyping, and iterative design work was combined with photography, video, sketching, diagramming,

writing, drawing and modeling. Each group of students visited and documented the site, observed and imagined possibilities, engaged the various constituents, and created comprehensive proposals in relation to the existing and potential environments and experiences at the dorm in terms of a normative Product/Service/System design approach and deliverables combined with attention to spatial and experiential design. Additionally, communication strategies of varying types and at various scales were very important to the project, and each group studied and developed a work in this area.

One of the main focus of the studio was to have the opportunity to explore how the dorms, and their context, form a sort of network amongst themselves, with the institutions, and with the city trying to understand how might “Collective Experiences”, “Connected Lives” and “Linked Places” really have meaning, and how they might manifest in design.

## The Co-Design Role. A residence for themselves: students that design for students with students

A human-centered design process was used, taking the potential of creativity and design thinking while co-creating with the people involved in the project. The studio’s actors try to offer techniques, methods, tips, and worksheets to guide participants (specifically students, staff and local communities members connected to the dorm), through a process that gives a voice to the dorm’s community and allows their desires to guide the creation and implementation of solutions. This is not always a linear process but it is rather always made by three main phases, starting from the *Exploration*, going through the *Ideation* phase and creating a “*Prototipation*.” The main aspect is to underline and build empathy with this dorm community and generate a chance to design a feasible new service-environmental solution that can be tested and placed in the context.

The first stage – Exploration – aims at the identification of a significant objective and its possible development in relation to the given context. The method used is the *Community Driven Discovery*: interacting with real experts on the dormitory topic (students, staff, architects, community members, etc.) - people who have the best insights to start building the *Design Challenge*. In this phase, the design process considers the recruiting members of the community as a primary researcher, translator and key informant for the project. The study of the given context through the meeting with the various stakeholders identifying spaces, available services and the general existing atmosphere generated by the environment, helped to create an analysis of *Strengths*, *Weaknesses*, *Opportunities* and *Threats* (SWOT analysis). This helped to begin an outline of strategic action. Different techniques were used for an in-depth research about the insights like *Interviews*, *Shadowings* and *Fly on the wall* techniques.

The second stage the Ideation part took place during the two days of on-site, co-design sessions. The facilitators were the studio’s students. One of the strengths was the multicultural / diverse nature of the project teams, with different nationalities, disciplinary and educational background. The method of group-based interviews, especially when diverse, can be a valuable way to learn about a community quickly. Group interviews can be good for learning about community life and dynamics, understanding general community issues, and giving everyone in a community the chance to voice their views (IDEO.org). The environment was divided into big activities, such as “Speed dating” groups, “Interviewing” groups and “Shadowing” groups. The co-design session was able to gather more than 100 participants from the dormitory and engage them in different activities with the main goal of understanding who they are, their problems, desires and feelings towards their living space as well as their ideas for improvement. The activities by the students and with the students also included “Hotpot”, “Express yourself wall”, “Feelings board” and a “Word game”. The data generated during this activity was highly relevant, and it was the foundation for most of the studio projects.



Figure 1 – An example of the “family posters” created during the Studio not only to promote the co-design session but also to create the first engagement and touch point with the dorm’s community.

Sometimes users can play co-creating roles throughout the design process, i.e. become co-designers, but not always. It depends on the level of expertise, passion, and creativity of the user and designer, and other issues and constraints. All people are creative, and can help to inform, but not all people become designers. Four levels of creativity can be seen in people's lives: doing, adapting, making and creating (Sanders, 2006). Perhaps people with a high level of passion and knowledge in certain domains, and who are invited to participate directly in the design process can certainly become co-designers (Sanders & Stappers, 2008). In any case, design process is, or should be, inclusive, and hence all can contribute.

In the case of the project and process, the student designers don't passively receive the knowledge from the stakeholders, but may also really have empathy with their student colleagues, and understand their needs and thoughts because they may be (or have been) users of this dormitory life too - and as service designers, they are able to recognize the strengths and weaknesses of the insights. Using the “in context immersion” method, meeting people where they live, work and socialize, and immersing themselves, reveal unexpected opportunities. They are researcher that bring knowledge from the theories, and develop more knowledge through observation and interviews (Sanders & Stappers 2008).

So, in this co-design session the roles get mixed up: the participants who will eventually be served through the design process are given the position of “expert of experience”, and play an important role in knowledge development, idea generation and concept development. In generating insights, the researcher supports the “expert of experience” by providing tools for ideation and expression.

## A Selection of Six Different Scenarios of Use foreseen by Students

The last phase of the studio had the specific focus on exploring how environment and experience design can merge by prototyping ideas born during the research phase and the co-design session. As mentioned, the design of environments, especially in the design of public spaces, benefits from a strong and detailed use and user definition. Different methods and hybrid tools can be mixed up creating frameworks to highlight key relationships and develop the strategy (e.g. journey map, relational map, customer journey map, storyboards, etc.)

A journey map can help to visualize a process from the beginning to the end; it's a linear process and easily allows you to imagine an entire flow of an experience. During the ideation



phase, all the student designers developed much information to be organized, and through the hybrid tools everyone was able to visualize patterns, understand the perspective of the constituents, and finally unpack the context they're working within.

Below, in figure 2, we can see a customers' journey map outlined by students of the studio, describing a typical critical moment "the arrival of a new student" in the dorm. The map is supported by characters and actors, an emotional graph which describes the feelings of the new student (customer) at the time, and all the pros & cons in the precise touch point, space, moment of the journey. In particular, here in the diagram, we can see the moment of the "arrival of a new student" at the Dorm, how does he/she feel seeing the structure from the outside and if she/he, for example, are able to reach easily the building.

The first touch-point between the students and staff is perhaps the main starting point of the most developed project in the studio. One of the best studio outcomes is the "welcome kit" designed by the students with city maps, social engagement gadgets, souvenirs, rules, and paperwork... that can help the new dorm arrival to "feel at home" and to create their first steps in the experience / journey.

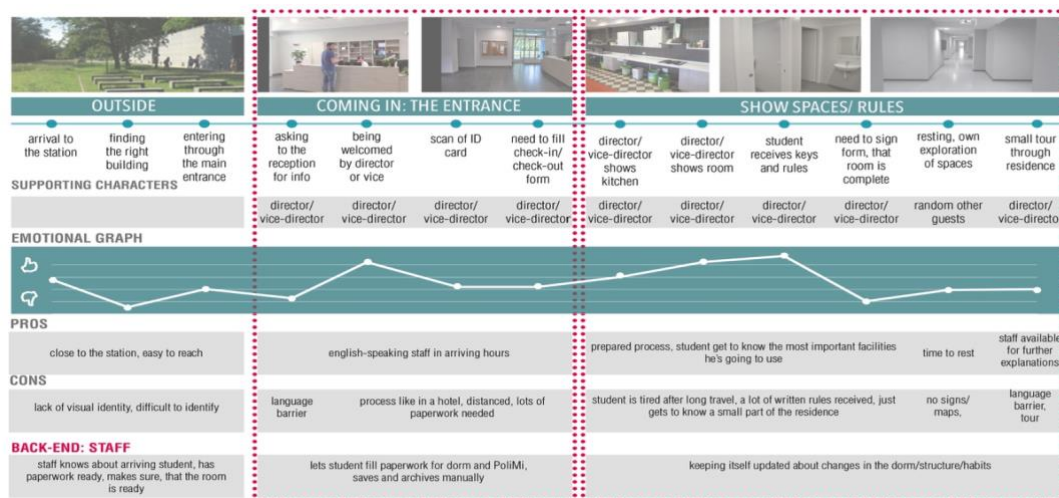


Figure 2 – One of the Customer / User Journey Maps developed during the Ideation phase of the Studio. "A Place to Meet", project by: Camilla Fraboni, Felicitas Schmittinger, Paula Soler, Cristina Tamburello.

Many different scenarios of use and experience have been developed while trying to address the main intentions of the studio, which included delivering at least one affective communication channel, one innovative service, a new environmental communication, and one new spatial proposal. This paper has selected six different scenarios proposed by students to demonstrate the different outputs generated from the research. The first project underlines the potential of the garden and the entrance of the building as a gathering point for activity and socialization with the neighbourhood. As stressed, the key point of this paper, and of the studio was to examine the dorm as a possible place for social cohesion. The second proposal emphasizes the sense of belonging to campus life, while generating sports activities to foster a sense of school spirit and instill a sense of community. The third student project highlights interior multi-functional spaces through an intense analysis and SWOT process.

The fourth example describes a digital board as an innovative service to create and share events, while also connecting people inside and outside the dorm.

The fifth proposal is a "memento project" that is made with the aim of recording experiences through an object.

And the last selection, as mentioned above, contains a "welcome kit" as a "gift" to the new arrivals at the dorm which can help them to move forward in the first steps of this new experience.

- The garden area as a filter between the dormitory and the neighbourhood:  
**“Multitone - Cultural Hub”** is a project (developed by: Gea Sasso, Serena Chillè, Sook Yin Fong, Rita Faia) located in the garden and in the auditorium, using the reception as a welcome and information point. The hub hosts a set of activities: a “Seasonal Festive Market” that allows for cultural exchange and ensures all the students far from their home feel less lonely during festivities; a “Monthly Market” for swapping and selling that translates cultural exchange into goods; “Programmed Film Weekends” with screenings during the weekends where neighbours and students can enjoy cinematographic pieces together; and “Open Class” where anyone can take advantage of the space and propose their own classes. All activities are planned to be managed by the student desk at the reception, and centralized in the platform where it is possible to buy tickets, consult the agenda, connect with other members of the Hub, and share ideas.

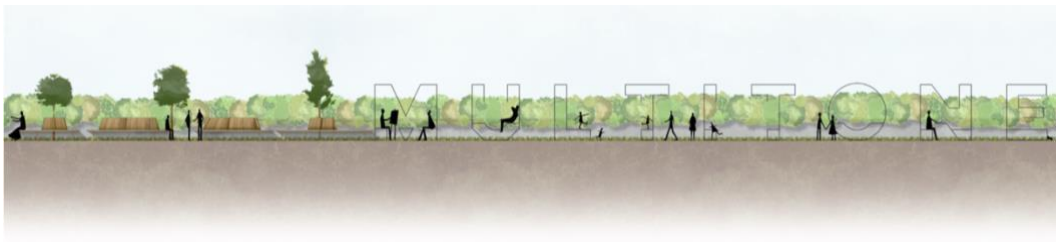


Figure 3 – Frontal View of a part of the “Multitone – Cultural Hub” project.

- Creating a sense of belonging and enhancing the participation of campus life in the dorm: **“Team Dorms Cup”** project (developed by: Giulia Balboni, Samuil Botev, Marianna Carbone, Anrui Xu ) talks about the internal dorm community which is composed by all residents. The aim of the community is to involve people in active participation in campus life. In order to make everyone feel part of the community, and to avoid different levels of involvement, the idea is that everybody who joins the dorm automatically starts belonging to the Team from the very first moment. The aim is to build strong relations among students, making it more satisfied to live in the dorm and to be proud of it.
- Multifunctional spaces are seen as places of Social Engagement: **“Ikos – Spaces for everyone”** project (developed by: Martina Hopfner, Doaa Mohamed Refaat, Anna Virginia Rigillo, Beatriz Rincon Pozuelo) represents the idea of making social engagement suitable for everyone, to feel the context of space according to intimacy and mood, and to be able to create different levels of interaction.



Figure 4 – A “Social Engagement – Multifunctional space” inside the “Ikos – spaces for everyone” project.

- Innovative Service to connect events, activities and spaces with people: **“The Online Board”** developed in the project called “X Newton” (by, Dimitrios Chatzichristos, Simone Chiani, Marisel Santa Ramos, Luca Tajè) is an online service created especially for dorm residents. It serves the combination of spaces and activities, and lets people use them to invite people, create events, promote activities, offer courses/services, and create a big inner network of connections.
- A flexible common ground towards creating shared experiences and the idea of “recording memories” with the **“Memento – Symbolic Artefact”** developed in the project called “Our Newton” (by: Martin Andreev, Sean Fegan, Giulia Capriotti, Maddalena Mazzocchi) is focused on the idea to record and document memories within the community, a memento is gifted to each resident at the end of their stay. This memento is shaped by the individuals engagement with other residents on the online platform.



Figure 5 – “Memento – Symbolic Artefact” prototype.

- To create a sense of belonging and to foster a sense of school spirit: **“Welcome Kit”** is a useful analogic innovative service developed in the project called “Welcome Home” (by: Sebastiano Gobbo, Clara Marcolin, Ao Shen, Susana Soto Bustamante) that helps the new arrivals at the dorm to move through the first steps in this new experience. It contains a guide map of the city, a language guide, and some souvenirs to personalize the environments, some objects for the school, and a personalized mug. The welcome kit is to be considered as a filter between the staff and the students as a first touch point of the entire dormitory experience.



Figure 6 – “Welcome Kit” prototype.

Finally, all the scenarios and outputs delivered have the same components in common: to propose improvements and relevance, to increase the efficiency and impact of the various spaces, to create comfort issues, to build engagement, to increase awareness and impact, and to investigate communication.

## Conclusions

These last scenarios illustrate how positive the relations between the community hub and the urban environment could be, particularly in the case of a university residence and the dynamics that can be establish with the neighbourhood.

The positive synergies that are created between different populations, as we have seen, can help to change peripheral areas (and not only) by avoiding dangerous processes of gentrification and favouring a collaborative bottom-up process, and to do this there is no better tool than co-design processes.

As we have seen, co-designing the space-service in question allows a close collaboration between all stakeholders in the design development process together with a variety of professionals having hybrid design/research skills. The participants will come from diverse backgrounds, and with many types of cultures: disciplinary culture, corporate culture, ethnic culture, worldview, mind-set, etc. (Sanders & Stappers, 2008).

In the future, we can imagine an evolution of the tools and processes that allow co-design: “One of the major challenges in planning and architecture today is the communication gap between the design team, the different levels of ‘user groups’ and the wide array of specialized consultants to the process. In the future, the new co-design languages that support and facilitate the many varieties of cross-cultural communication will become highly appreciated” (Sanders & Stappers, 2008). We can also imagine an evolution of the tools that promote an integrated synergy between spatial design and design for services.

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# Can coworking spaces be built bottom-up?

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## Abstract

Coworking is moving beyond its childhood years, and, as it's growing up, it's facing new challenges. Some questions are sparking, such as: how can coworking spaces retain their users? Is coworking involving the actual amount of users who it is saying to engage? Does the coworking movement affect cities and neighbourhoods? Can coworking spaces be built bottom-up?

The paper starts with an analysis of the nature of paradigms of contemporary work, fertile terrain for the creation of coworking spaces, which are analyzed according to their characteristics in terms of people, spaces, goods, and processes. The analysis highlights a series of information that leads us to suggest that, yes, coworking spaces could actually be built bottom-up and that this process would bring great benefits to them, especially from the point of view of the community of people within and around them.

**KEYWORDS:** coworking spaces, hybrid spaces, bottom-up, community, space quality

## 1. Framework

### Work is changing

Great paradigms such as Sharing Economy, Digital Disruption, Urbanization, and Globalisation deeply and irreversibly permeated and changed the whole society, because all human systems are interconnected on a worldwide physical and digital scale, as a result of growing exchange flows which have sped up following technological development.

One of the human systems affected by this change is certainly work and its workforce.

In particular, in this moment work is experiencing its "Second Post-Fordism" phase, characterized by urban-based networked knowledge (Bonomi, 2015). In contrast to the Fordist era, characterized by the mass-production and consumption of goods, delivered by the "Heavy Economy" (Bonomi, 2015), the Second Post-Fordism leads to a "Light Economy", which is able, in a sustainable way, to adapt to an increasingly diverse and fast-changing demand.

The Second Post-Fordism is mainly animated by knowledge workers. These workers include "all workers involved in the chain of producing and distributing knowledge products"



(Mosco, McKercher, 2007), so, generally speaking, they comprise all white-collar workers. Knowledge workers make a great use of the latest technologies, so technological development enables them to work potentially from anywhere in the world. The irony of being able to work anywhere is that there isn't anywhere designed for people who can work anywhere, so a movement formed around that and that is the coworking movement (Bacigalupo, 2014).

So: what is coworking?

## 2.Coworking spaces

### 2.1 Coworking: workspace as a service

The word "coworking" could be referred to different formats, as it's subject to constant renegotiation by its community of practitioners, the coworkers (sometimes referred to as "residents"). All these formats share the hybrid dimension of both its spaces and its community of people. We argue that coworking could be described as a new work style, combining the best features of an office environment, its camaraderie and the access to useful tools required by knowledge workers.

Coworking can be considered the leading example of a workspace as a service (Boyd, 2014). From a service design point of view, it's interesting to observe that coworking is, in fact, a package of services, including, in terms of space, the container itself, and in terms of content, target-aimed amenities. We could, in this sense, talk about coworking spaces as workspaces as a service. This means that coworking is a distributed system of people, spaces, goods, and processes.

The first coworking space, the "San Francisco Coworking Space" at Spiral Muse, was opened in 2005 by Brad Neuberg: he didn't want to lose the community and structure given by a traditional office's community, but, at the same time, he wanted the freedom and the ability to control his own life. Working at home means being flexible and autonomous, but also working alone. People often lose human interaction, suffer professional loneliness and bad habits, reaching a point in which work-life balance is ruined. Neuberg started his own coworking space and invited people to join him, so the very first community of coworkers was born in a spontaneous way.

When the coworking movement started to spread, it was just an "edge" phenomenon: there were few coworking spaces all over the world, mainly hosting a web-friendly community. These spaces' hosts and residents were inspired and relayed on a collection of core values (collaboration, openness, community, accessibility, and sustainability) in order to open new spaces. Coworking spaces were mainly animated by individuals or small groups of people developing their life projects, finding other people supporting and contaminating their ideas. There wasn't any kind of industry, nor conferences or seminars regarding the movement, to speak of.

A dozen of years later, coworking has certainly become mainstream: people are coworking on every continent, companies are trying to emulate coworking spaces, some coworking spaces started their own franchising.

Coworking has become, without a doubt, an industry.

### 2.2 What are the features of the coworking industry?

#### 2.2.1 Coworking is addressed to freelancers.

Coworking spaces accommodate work practices that are typical for mobile, project-based, freelance and self-employed work (as found in the cultural and creative industries), which could be carried out “anywhere” with a computer and Internet access (Merkel, 2015). These workers value their work as meaningful and make it the call of their life. They find in coworking spaces what they need: in contrast to a typical office environment, coworkers are usually not employed by the same organization, so they don’t feel the pressure of competition or the need of faking their true self; they can find a supportive and motivational diverse multi-disciplinary community; and, finally, they have complete control of their job both in terms of schedule, rhythm and most suitable workspace related to their tasks. Even though they value autonomy, they look for some form of structure in their professional life: paradoxically, some limited form of structure enables an optimal degree of control for independent workers (Harvard Business Review, 2014).

These workers are looking for spaces able to meet their needs: they are in demand of specific services or they are business people who travel a lot and look for a network of spaces they already know of and where they feel at ease.

These people's needs shape the spaces, the services and the scale of coworking spaces: places that act on the local or the neighbourhood’s scale arise from the response to collective acupunctural needs, embodied by the initiative of individuals or small groups of people. Urban-scale spaces emerge from more structured ideas, resulting from the action of private and/or public actors. These spaces’ contents are commonly related to culture in all its aspects and sustainability. Lastly, spaces with a national and international resonance are mainly closely related to business projects, as they are addressed to business customers who travel a lot and feel the need to find space they already know and to which they can access.

### 2.2.2 Extended community.

*“The term “coworking” is often misunderstood. A network of sharing desks or rental offices lacks the crucial feature that an initiative must possess to be defined as coworking: community enrichment.”*  
(Cristina Tajani, Assessor of Labor Policy, Production Activities, Commerce and Human Resources of the Municipality of Milan)

In 2012 Spinuzzi talked about coworking spaces as just flexible shared office spaces for creative professional “working alone together”. Five years later, we suggest that one of the indispensable factors for the success of a coworking space is the building of an extended community that lives within and around it. Coworking promotes a collective, community-based approach to the organization of cultural and creative work. They can, therefore, be regarded as a new form of urban social infrastructure enabling contacts and collaborations between people, ideas and connecting places (Merkel, 2015).

An important aspect of the community of people that is created within and around coworking spaces is the creation, at different scales, of enabling environments for disseminating and exchanging of “tacit knowledge” (Pacchi, 2015).

Hence, “just by belonging to a local community, an insider will have access to the shared knowledge among members of similar but distant communities” (Capdevila, 2014, p. 2).

### 2.2.3 Diverse synergy.

Coworking spaces’ community is mainly composed of freelancers, who don’t have a common employer. Then, what keeps these communities of people together? In short: the different synergy that is created within these spaces.

*“There’s a temptation in our networked age to think that ideas can be developed by email and iChat. That’s crazy. Creativity comes from spontaneous meetings, from random discussions. You run into someone, you ask what they’re doing, you say ‘wow,’ and soon you’re cooking up all sorts of ideas.”*  
(Steve Jobs)

Sharing, belonging, reciprocity, and trust are the main features coworking spaces communities relate to. Residents also embrace openness to new people, new ideas,



innovation, and other communities. Professionals meeting and their mutual exchange of knowledge and experience lead to many synergic effects (Kubátová, 2014), that don't rely on the sameness of its members, but on the diversity of people with different skills and knowledge, that are willing to share and collaborate. Individuality and freedom of expression and action are not suppressed, but this synergy celebrates the heterogeneity of its members and their actions (Rus, Orel, 2015).

#### **2.2.4 Open Innovation.**

Coworking spaces often refer to open innovation circuits in the context of the creativity-based knowledge economy.

Open innovation could be understood as a systematic encouragement towards the exploration, the integration and the exploitation of internal and external sources for innovative opportunities through multiple channels. Capdevila (2014) argues that the physical environment and the community within coworking spaces can facilitate the implementation of different collaborative practices among co-located economic agents. Hence, coworking spaces might be great open innovation intermediaries, especially within the context of creative industries, that “include all enterprises and self-employed persons whose economic activities focus on the production, dissemination, and intermediation of artistic and cultural products or services.” (von Streit, Lange, 2013).

#### **2.2.5 Hybrid Spaces.**

First of all: where are coworking spaces located?

The interesting thing about coworking spaces is that they often occupy regenerated industrial spaces in historically industrial districts, which are, therefore, re-converted into creative and innovation-driven districts.

These urban areas are revived and renewed also thanks to coworking spaces settlement in large unused and neglected spaces.

In the creative atmosphere model, the creative class tends, at least in part, to replace the working class in the places of traditional development of modern industry (Bertacchini, Santagata, 2012). Thus, the places of material production of Heavy Economy become those of the production and consumption of intangible knowledge.

Some desk analysis on the city of Milan, Italy, showed that there are coworking spaces also in more central urban areas, and they have peculiar features:

- they might be very small coworking spaces, characterized by the provision of very specific services. Therefore, they address a very specific target, often motivated by their own life projects. These spaces are generally set up in single apartments, sometimes apartments connected together by a common corridor;
- they might be very big coworking spaces, which, thanks to their economic sustainability, are able to maintain very high rental costs in prestigious locations.

Coworking spaces refer to different typologies of interiors, such as the coffee shop, the home office, and the traditional office. Their landscape is the result of the evolution of the traditional office in relation to “the changing nature of work (from a service to knowledge to creative industry), new flexible work styles, the distributed and virtual workforce, and globalization and merging of cultures” (Oseland, 2009). Thus, office interiors had to help workers with the complexity of their work and the degree of autonomy required by their tasks. As work gets more complex, it requires teamwork: so, it involves more workers and, thus, they need more flexible workstations. The flexibility of these spaces can take different shapes: workstations could be used by more people at different times or more people at the same time. Some workstations are set up with flexible objects that can be adapted to the needs of different people (for example, some scientific studies show that working at the laptop while standing is healthier than sitting).

Coworking spaces could be considered a “Club office” (Duffy, 1997), as the environment is both highly autonomous and highly interactive. Occupancy pattern is intermittent over the span of the 24 hours. In this kind of landscape transactional knowledge is emphasized and people thrive on the networks established in these spaces.

Carlo Ratti, who designed Talent Garden Calabiana Campus in Milan, well summarized this idea: "The culture of sharing ideas is not so different from that of sharing material assets."

As already said, coworking spaces can be considered a system of services involving people, spaces, goods, and processes. In terms of space, some coworking spaces occupy an entire area and provide aisles with different functions within itself, others are part of bigger projects, such as hubs or physical platforms: in this cases, coworking spaces are one of the services provided and are accompanied by others, and together they follow the project's mission.

In both cases, the "basic services" package, which tends not to be very different from one space to another, is generally constituted by the actual coworking area. Here we can find three types of workspaces: collective spaces, where most people often share large tables, individual spaces, and more traditional meeting rooms.

Beyond this area, multiple collective spaces with hybridized functions are offered: there are dedicated aisles or accessory services for specific kind of work, relax, leisure and well-being. In the case of coworking spaces belonging to larger projects, it's interesting to analyze the offered services and their spaces. The presence of multiple services ensures economic sustainability to the system (Levels, 2017).

Among the spaces and services that are related to the working sphere, we find fab labs, incubation and consultancy services for emerging start-ups, learning programs, and libraries. There are also hospitality-oriented services: lots of spaces offer a bar, cafeteria or bistrot space. Others, often smaller and informal, offer the possibility to use a shared kitchen among all residents. Bigger spaces might even offer a hostel service.

Other services that could be found in coworking spaces are dedicated to wellbeing and leisure: from green spaces used for yoga and physical exercises, to real gyms or swimming pools, and, finally, nurseries and children labs.

## Coworking spaces quality

One of the most important things in terms of quality is that a coworking space (and/or the platform it lives in) must guarantee different levels of intimacy in the system of its spaces: from spaces open to the public to less accessible common areas, to private areas.

One of the great differences between a traditional office and a coworking space is that the former is still heavily tied to the 70s office model. We have already mentioned the landscape in the traditional office: summed up with the idea of a battery of tables inside a closed box, it leads to a series of behaviours of the users who live it. The most obvious behaviour is that it seems that people can talk about work just in the proximity of their desks or, if lucky, the office coffee machine. These ideological barriers block change within the offices; in contrast, the coworking spaces, which have a more recent and less bounded origin, partly succeed in overcoming this behaviour, bringing work on the sofas, in an open space, around a plant, during a happy hour.

In traditional offices, the dimension of physical well-being is rather neglected: in this sense, we can speak of both the ergonomic aspect, the sensory one, and movement. Coworking spaces have begun to explore some of these potentials. For example, mid-long rented workstations are actually equipped with ergonomic chairs, able to respond to the needs of a person sitting for many hours. Movement begins to enter into the logic of coworking spaces too: occupying an open-space creates more movement within the community, which moves to its liking within the space. Movement, however, is still little encouraged, if compared, for instance, with Michele De Lucchi's "Passeggiata" ("Walk", "Stroll"), which exemplifies a new way of conceiving the office, a gym for the mind, where the areas of sharing and meeting are more important to the workplace (Gugliotta, 2015), where creativity and physical well-being feed on each other and create synergies among residents. Some coworking spaces

encourage the idea of walking through playful environmental communication graphics. Other, more spacious spaces, offer yoga lessons and gyms. Even coworking spaces still have to develop a better sensory dimension. For example, the lighting system is often not really efficient and does not respond well to spaces' different functions and human circadian rhythms. Noise seems to be another problem for coworking spaces: collective areas are perpetually animated by the talk of people discussing to one another, on the phone, on Skype. In this context it becomes difficult to find silent spaces: a silent room or soundproof booths could help in this regard. Other micro-services could improve air quality within the spaces or even hydrothermal wellbeing, others could make the spaces more comfortable: for example, the bathroom area is often neglected, but its quality could be increased with small services. They could be provided with actually usable showers, shelves for the support of bags, tricks, objects, and lockers for personal objects. The relationship between indoor and outdoor spaces could also be improved: on the one hand, to communicate more with actors outside the space, on the other, so that workers are not perpetually surrounded by an artificial landscape. In general, the area dedicated to wellbeing could be more relevant within coworking spaces, because wellbeing permeates all lifestyles thanks to the spaces quality.

### 3. Can coworking spaces be built bottom-up?

#### 3.1 Insights

We have so far described the framework within which coworking spaces emerge, and we have defined and analyzed the characteristics of their system of people, spaces, and services.

Here are the most interesting insights:

- coworking spaces are mainly addressed to knowledge workers, often freelancers;
- spaces live and change around the communities that are formed within and around them, so creating a stable community is crucial and strategic;
- spaces create an active and interesting economic system within and around themselves;
- spaces are themselves a service;
- the package of services within the spaces is defined by the space managers, and it is consistent with their vision, mission, and the target they want to address;
- the package of services offered can be further refined, particularly in relation to the quality of the spaces;
- coworking spaces franchising exists, and this shows that it is possible to obtain a replicable and scalable formula in multiple spaces. This formula is made up of guidelines that are repeated (repeatable and scalable) in all spaces, which are shaped by the offered services.

#### 3.2 Service design and coworking

Applying the principles of service design, we are led to argue the acquired insights. While a lot is being discussed regarding the way coworking affects our ways of working, it is also time to reflect upon the way it impacts cities and local neighbourhoods, and what its urban heritage is. It's necessary to look beyond what's happening inside a place and consider its local influence.

As we've already discussed, coworking spaces are a phenomenon of an emerging economy, which is able to knit technologies and people together, allowing processes of self-determination, expression and interconnection (Zuboff, Maxmin, 2002; Von Hippel, 2005; Inghilleri, 2003).

Meroni and Sangiorgi highlight how this economy “appears to be founded on three pillars:

- its social character, strongly linked with the phenomena of social innovation;
- its environmental reorientation, leading to a green revolution and to a renewed territorial linkage;
- its technological innovation, supported by an unprecedented technological breakthrough.” (Meroni, Sangiorgi, 2011)

Thus, the production of value is related not only to an economic sphere but also to social and environmental issues. In particular, as a consequence of the complexity of the new artifacts and of the hybrid and interdisciplinary nature of work (Manzini 2011, Ramirez 1999), the emerging economy is characterized by a collaborative nature, which makes the active participation of people in generating value relevant, and qualifies this economy as a “co-production economy” (Von Hippel, 2005). Production for the masses has been replaced by production by the masses (Meroni, Sangiorgi, 2011).

Coworking spaces seem to be the right places where this kind of economy can emerge; but, speaking the truth, some coworking spaces struggle to attract people from the outside because citizens simply do not know these spaces. There is the chance, that coworking spaces are likely to become exclusive places for certain types of users, leaving behind not-knowledge workers and those who do not have access to technology.

This situation is strongly linked to the topic of democratizing innovation (von Hippel, 2005). Von Hippel argues that information and means of production have democratized innovation, because they broadened the number of people who are capable to innovate. Unfortunately, the people attracted and engaged are normally part of a small elite of “lead-users” or domain experts (Meroni, Sangiorgi, 2011).

So, how can coworking spaces start to interact with a wider and more diverse community?

On the one hand, if we think of existing coworking spaces, there is most likely room for inviting others in and generating more diversity in the space. Café areas and conference rooms are an obvious place to start. So, a starting point for democratizing innovation could be “opening-up spaces for questions and possibilities (rather than seeing innovation purely as producing novelty products to be marketed)” (Björgvinsson, Ehn, Hillgren, 2010).

On the other hand, this situation seems to suggest an interesting opportunity for building these spaces with a bottom-approach: why not allow coworkers to co-design their spaces and services?

Bottom-up design, with its own rules and behaviours, self-imposed by local communities, gives social value to spaces and increases their quality, making the spaces crucial entities that institutional policies and local authorities could effectively support to promote a sustainable local development (Meroni, Sangiorgi, 2011). This open and democratic approach leads to innovation and healthy competition, as the whole society has access to the knowledge and information of multiple organisations and markets.

This opportunity is connected to the original soul of coworking spaces: they might be a bottom-up solution to the recession and structural changes in urban labour markets, and they also attempt at renegotiating urban Commons in a process of negotiating shared spaces, resources and values (Ferguson, 2014). Similar to the artistic interventions that reclaim and reappropriate urban spaces as “sites for active and democratic engagement”(Ferguson, 2014), coworking might be interpreted as an emancipatory practice challenging the current neoliberal politics of individualization (Lazzarato, 2009). As a collective, community-based approach to the organization of cultural and creative work, it might provide an alternative space for the free flow of ideas, while enabling support networks. Thus, coworking might not just be about working “alone together” or “alongside each other” in a flexible and affordable office space (Merkel, 2015).

Is it, therefore, possible to build coworking from the bottom-up? According to what we have said, yes, it is possible.

### 3.3 How?

Through co-creative and participatory design approaches, designers from the global headquarters or from one of the local design centres would work directly with people in their own communities to build a shared understanding of their needs and context of living, creating locally relevant products and services (Meroni, Sangiorgi, 2011). As we already said, coworkers shape the spaces, the services and the scale of coworking spaces.

For what we know, there haven't been any example of coworking spaces built entirely with a bottom-up approach, so far. Despite this, we can mention some initiatives: some coworking spaces offer free spots to refugees, allowing accelerator programs to enter the local economy. Others offer initiatives and training programs for unemployed people. At a time where most jobs come from one's network, it would also make sense from a job centre's perspective to partner with coworking spaces. Some coworking spaces are very active in the territory, claiming the historical identity of often neglected neighbourhoods.

In the city of Milan, we can mention Piano C, a coworking space which focuses on mothers (without limiting the access to other people), offering baby-sitting services, but also training programs for starting new businesses or returning back to work after a hiatus. Even if this space wasn't built with a bottom-up approach, the values of the organizational team meet the needs of a broader community. Another example in Milan is Mare Culturale Urbano ("Urban Cultural Sea"), which coordinates temporary artistic residences that interact with social innovation, in order to generate contents that have a strong impact on the territories for which they were designed. Italian and international experts are invited to take care of the artistic production.

Outside of the coworking realm, living labs could be an interesting innovative environment to take as a best practice: they "are situated in real-world environments, are user-driven, and collaborate with research organizations, companies, and public and civic sectors with the aim to collaboratively develop new services and products. Living labs emerged as a response to innovation environments that were too closed, which often resulted in failure to innovate, partly because of limited and late interaction with potential markets (Stålbröst 2008)" (Björgvinsson, Ehn, Hillgren, 2010).

In general, we suggest that, in order to build coworking spaces with a bottom-up perspective, coworking hosts should:

- understand the identity of the neighbourhood they're interested in for the establishment of their space;
- involve the neighbourhood's stakeholders;
- have the support of a designer, facilitating multidisciplinary design processes, triggering a dialogue among people and organisations, envisioning and defining new, more community-oriented, platforms and tools needed to enable and encourage participation (Cottam, Leadbeater, 2004).

We also propose the adoption of participatory design tools, not using its traditional approach, but rather employing what Cottam and Leadbeater call the "co-creation" model (2004), where users are seen as the biggest resources of the system. This model uses distributed resources (know-how, tools and expertise) and collaborative modes of delivery, and implies the participation of users in 'the design and delivery of services, working with professionals and front-line staff to devise effective solutions' (Cottam, Leadbeater, 2004).

### 3.4 Benefits

What would be the benefits of a bottom-up-designed coworking space?

This approach could benefit coworking spaces and the community for these reasons:

- participation can reduce the risk of failure (and, so, costs);
- participation can build ownership of the outcome;
- it focuses on a community's strengths rather than its weaknesses, so it helps to build more confident and resilient communities;
- resistance to change is lowered;

- participation can forge stronger bonds and trust, thus, greater community involvement.

The potential of service design is to facilitate the direct involvement of stakeholders in the design of spaces, and this can contribute to strengthening long-term relationships between people and places. Hence, communities within and around coworking spaces would be much more cohesive and extensive. Such places could also play a part in making local neighbourhoods more inclusive. This would ensure greater social mix and diversity within coworking communities.

## 4. Conclusions

Coworking spaces are emerging as a bottom-up phenomenon and this nature, over time, has gone missing, to give space to businesses that are struggling to be inclusive. A bottom-up design of coworking spaces is possible and would create great social value in the areas where they would be established. Just as in the model of the Smart City, all stakeholders would have a word, people could create a coworking system that can welcome everyone's voices and needs. Making coworking space's services accessible to a broader and more diverse public would lead to better quality of life for the whole community.

In the future, coworking is likely to be another area of the business where centralized planning will yield to decentralized and localized activities, and so coworking will not be designed top-down, but grown, bottom-up, toward more sustainable patterns by the decisions of hundreds or thousands of individual workers (Boyd, 2014), in which designers' capability to work within this dynamic framework is strategic and necessary (Meroni, Sangiorgi, 2011).

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# Design thinking for interior and spatial design: A case study within Politecnico di Milano

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## Abstract

The contemporary state of Interior Design education is being affected by changes in the professional realm that requires more and more a user/community-centered design to prevent failure in the use phase and to increase the citizen participation in designing their own city-environment. The modern design curriculum is structured to educate students who will go into the field and serve clients and employers effectively and also can lead the market as a change-maker (Foti, 2004). Within the School and Department of Design at the Politecnico di Milano, the POLIMI DESIS Lab has been developing some innovative interdisciplinary programs, crossing the area of Interior and Spatial design with Service design, through Design thinking, user and community centered design. This paper will present two case studies at the Politecnico di Milano that addressed different areas of concern but were underpinned by a shared approach to Design projects that participants are able to inhabit. Through these innovative interdisciplinary programs, findings are presented as the elaboration of a Design Thinking framework that can contribute to many other design disciplines.

**KEYWORDS:** design thinking, interior design education, co-design

## Introduction

During the last few years, Design in general and Interior Design, in particular, have experienced a rapid growth in evolving from one primarily concerned with surface decoration to one based on designing for human behavior (Alkhalidi, 2014). According to Landry (2010), starting from the focus on sustainability to an increasing reliance on technology to the requirement for better professionalism; Interior Design continues to progress in spite of bleak economic forces that seemed primed to exploit such evolution. This may explain the issue that Interior Design education is now shifting to meet the needs of today's students and today's design firms. However, the contemporary state of Interior Design education is not simply molded by changes in the profession and even stop

following the industry (Landry, 2010). It is proved that there are a growing number of students coming out of universities with more than a single Interior Design degree. Williams (2005) believed that it's no longer enough to leave schools with drawing and drafting skills because tomorrow's world needs more product innovators, industry specialists and strategic planners instead of traditional designers. Bowles (2010) indicated that through both formal and informal collaborations with different departments and design firms, graduates are encouraged to gain comprehensive skills which encompass the entire practice of design, including business, marketing, and communication skills while incorporating with humanistic sensibilities.

In the context of higher education, the design curriculum is structured to educate students who will go into the field and serve clients and employers effectively and also can lead the market as a change-maker (Foti, 2004). Within the School and Department of Design at the Politecnico di Milano, the POLIMI DESIS Lab has been developing some innovative interdisciplinary programs, crossing the area of Interior and Spatial design with Service design, through Design thinking, user and community centered design. This paper is about the experiences done in two Design studios (the Final Design studio at the MSc Interior Design and Temporary Urban Solutions, MSc elective course open to all the design students) where an iterative problem-solving process of discovery, ideation, and experimentation that employs various design-based techniques to gain insight and yield innovative solutions (Wylant, 2008) has been tested together with the needs of conducting research to the design opportunities, from the preliminary proposals to the technical executive ones, from the understanding of the personas to their involvement in the prototyping activities and from concept to the final settings.

## Review of Literature

### Design Thinking

Brown (2008) and Wetzler (2013) believed that the concept of "Design Thinking" has been around in the period of 1960s but has just presented to the popularity, especially in the world of business over the past 10 years. It is indicated by Howard (2015) that Design Thinking has evolved conceptually and widened in scope over the past half-century. Its foundation lies in the design methods movement within design research, which sought to understand how designers think, making decisions and solving problems (Buchanan, 1992; Jones, 1970). From these foundations, Design Thinking evolved to understand as a more generalized concept to tackle wicked problems in designing tangible objects and intangible systems.

In disciplines ranging from experience design to industrial design, architecture, and business, the conscious application of design thinking has been having impacts on the way design and non-design professionals approach problems (Cupps, 2014). However, Johansson-Skoldberg, et. al (2013) pointed out that Design Thinking is not only about design; it is often used beyond the design context, dealing with people without a formal background in design. As a result, the former role of 21<sup>st</sup> century designer has now shifted from the limited task as "form giver" to extended job including public communications, human interactions, systems and product platforms, strategies, processes, services and experiences (Brown, 2008; Buchanan, 2008; Gloppen, 2011; Norton, 2012). The strategic use of designers and design companies to partners with organizations so to create innovative practices was seen to be the beginning of most of Design Thinking discussions which focused on the nature of design problems and design processes (Brown, 2008; Buchanan, 2008; Gloppen, 2011; Johansson-Skoldberg, et. al., 2013; Martin, 2010; Rylander, 2009). On the other hand, the purpose of Design Thinking as an approach to problem-solving is to support an organizational interest in the participation of non-designers in the design process with the aim of expanding the organization's capacity for creativity and innovation (Brown, 2008; Leavy, 2010; Martin,

2010; Gloppen, 2009, Rosensweig, 2011). Furthermore, it put the emphasis on the development of an organization capable of building empathy, celebrating new ways of dealing with problems and issues, using iterative processes based on failures, feedbacks, prototyping and making an obligation to changing systems of practices and policies (Rice, 2011).

In spite of the acknowledgement that how a designer designs is on the face of its highly chaotic, it is predicted that there are some kinds of commonality to all design processes which are based on the Design Thinking approach using by many designers and can be learned and adapted even by non-designers for dealing with problems (Brown, 2009; Martin, 2009; Cross, 2011, etc). According to Rice (2011), the Design Thinking process can be experienced in terms of a system of five stages model proposed by the Hasso-Platter Institute of Design at Stanford (d.school). The five stages are as follow: Empathize, Define, Ideate, Prototype, and Test. It is important that, in practice, the process is carried out not always sequential but in a more flexible and non-linear fashion which do not have to follow any specific order and often occur in parallel and be repeated iteratively (Dam and Siang, 2017). On the other side, Brown (2008) highlighted three larger overlapping spaces including a series of related, iterative activities that together build the framework of Design Thinking approach. These steps are known as Inspiration, Ideation, and Implementation. Inspiration is the combination of two related phases called “empathize” and “define” which are focused on identifying the constraints of the problem or challenge, gaining deep understanding of people through a variety of qualitative research methods and allowing the design team to set constraints for the ideation to follow. The next step is ideation in which generating, developing and testing ideas can lead to solution. During the brainstorming session, all ideas are valid, crazy ideas are welcome and it is better to build on someone else’s ideas. The last phase called implementation is the bridge from ideas to reality, starting with prototyping, testing, getting feedback from real users and iterating on the ideas. It is essential that the design team should loop back through these first two spaces multiple times as new discoveries or new insights until a final solution is accepted, engineered and marketed.

## Design Thinking in Education

It is believed that there is a mutual benefit from the collaboration among universities and companies. According to Guimon (2013), the collaboration between academia and industry is increasingly a critical component of efficient innovation system and to foster education and training. On one hand, this linkage can help private firms to expand the relevance of research carried out in public institutions, foster the commercialization of public R&D outcomes, and increase the mobility of labor between public and private sectors (Marotta, Blom, and Thorn 2007). On the other side, the strategic management processes used in the education sector is similar to the one which used in the corporate world, using an iterative thinking process, such as Design Thinking allows for flexibility and adaptability in both planning and the integration of viewpoints from all stakeholders. Fartushenko (2016) highlighted that this approach is usually seen in a collaborative form and interdisciplinary methods so to foster creativity and innovation within educational organizations. Cupps (2014) indicated several institutions which have deployed Design Thinking programs in the last few years noticed by d. School which spearheads by IDEO’s David Kelly. Particularly, within the area of interior design education, it is no longer simply design interior spaces within building envelopes. Solutions need to go beyond the look and the functionality of the spaces referring to “design for a purpose, design for experience, design for emotion, design for sustainability and design for transformation” (Muratovski, 2015). Specifically, interior design today is defined and given to students in a broader scene. It is not only the transmission of understanding and exploring of the interior environment but also entails collaboration across a multiple of disciplines, ranging from urban design, architecture, spatial design, environmental design and service design (Hadjiyanni, 2013). Particularly, the literature reveals some courses of high-ranking universities have embraced Design Thinking approach as opposed to traditional approaches within design studio courses.

# Case Studies

## Methodology

The aims of the study are first to understand the learning approach being used within the two design studio classes and then drawing a framework of Design Thinking approach that can help design educators put into practice and student-oriented purpose in many other design disciplines, for many types of inventive single or group projects. As a result, classroom observation method was used in order to capture these goals. Obviously, classroom observation could be seen as a strategy to improve instructional quality and teaching effectiveness, whether they are conducted by fellow teachers or by administrators. However, teaching is a complex and dynamic activity and during a lesson, many things occur simultaneously (Richard and Farrell, 2012). Furthermore, there are also exist many types of lessons ranging from amateur to professional, from general education to higher education, from primary schools to universities. Especially, in this study, the author's task is to observe two classes in the program of master degree at the Politecnico di Milano School of Design: Final Design Studio at MSc Interior design and Temporary Urban Solutions elective course at MSc in Interior, Communication, Fashion, Product, and Product Service System Design. The two classes were led by a group of professors belonging to POLIMI DESIS Lab and being taught in the type of Design Studio. These courses have shown the unique characteristic as an interdisciplinary teaching and learning activities including lectures, workshops, feedback sessions, presentation, individual and group work, written assignments and exhibitions (AIAS, 2002). That's why a number of following questions were needed to keep in mind:

- What types of students are included?
- What is the physical layout and design of the studio class? How is space used?
- What are classroom management strategies and structure of the lesson?
- What is the approach applying for the whole design process?
- What types of teaching strategies and activities using in the studio class?
- What type of learning materials used to support for design students?
- What types of design outputs that students need to submit?
- What types of interaction occur among instructors to students and students to students?

## Design studio observational tools

In carrying out the design studio observation, a number of tools or instruments need to be taken into account in order to help the researcher to collect systemic information so to answer the observational questions (Spiegel, 1997). What follows is some of the types of observational tools used in this study.

## Maps

In this study, a number of maps were used to sketch different aspects of the classroom with the purpose of understanding the transition among forms of the studio class. For example, in the "Final Design studio", sketching maps provided a clear perspective of the classroom transformation and materials used in order to serve diverse tasks of a studio session, such as: from lectures to feedbacks, from lectures to presentations, from traditional classroom to active classroom, from teacher-centered learning to student-centered learning.

## Field Notes

Writing Field notes is defined as notes transcription or the written account derived from data collected during both observations and interviews. Field notes should be written down as

soon as possible after each observation done because important details may be missed or forgotten by many reasons. Richards and Farrell (2012) believed that field notes are used to “broaden your range of vision” and provide data that will be used in the later stage of the system design.

### The Follow-up Conversation- Interview

Although this is an observational task, it is suggested to use the method of interview or interactive conversation with both students and instructors. During the follow-up meeting, it is important to focus on clarifying and interpreting information in order to understand more about teaching strategies used by teachers and how the students respond to the innovative learning approach.

To be concluded, it is no single instrument or tool will be appropriately used for gaining purposes of the observational task and answering all research questions. On the other hand, Chesterfield (1997) indicated that observational tools should be best used in the type of combination with the aim of showing patterns and differences between individuals and groups. Additionally, observational data can be used in mixture with background characteristics of students and instructors to establish relationships between observed behaviours and previous experiences.

### Case Studies details

Temporary Urban Solution (TUS)	Final Design Studio (FDS)
<b>Duration:</b> 2 months (11/ 2015 – 01/ 2016)	<b>Duration:</b> 4 months (10/ 2016 – 02/ 2017)
<p><b>Aim:</b> This course focused on temporary design actions to be done in the outdoor area of the Milan theatre “Atir Ringhiera” known as “La Piana”. The studio also explored the opportunities to improve the sense of belonging to this place, attracting people and actions to new kind of activities.</p> <p><b>Participants:</b> 62 international design students, one course leader, two assistants, a number of Milano citizens.</p> <p><b>Location:</b> Politecnico di Milano – School of Design</p> <p><b>Design process</b> Phase 1: Inspiration</p> <ul style="list-style-type: none"> <li>Students tried to gain a deep understanding of people’s need.</li> <li>Research methods: Observation, video interviews, learning from experts, analogous inspiration...</li> </ul> <p>Phase 2: Ideation</p> <ul style="list-style-type: none"> <li>Aims to design the temporary solutions (services, spatial design, toolkits...)</li> </ul>	<p><b>Aim:</b> This course focused on the most advanced fields of research and experimentation, particularly on how “public space” both shape and are shaped by cultural activities and how co-design or co-creation of public goods like services, spaces and strategies can actually become a way for engaging citizens and stakeholders in order to shape the European identity.</p> <p><b>Participants:</b> 54 international design students, four course leaders, two assistants, two internship students, 22 artists, and 21 space owners.</p> <p><b>Location:</b> Politecnico di Milano – School of Design</p> <p><b>Design process</b> Phase 1: Discover</p> <ul style="list-style-type: none"> <li>Students tried to understand the existing system of art-related spaces and people who are living around.</li> <li>Activities: Sketching, experience maps, video interviews...</li> </ul> <p>Phase 2: Ideate</p> <ul style="list-style-type: none"> <li>Aims to design spatial devices (settings, hosting areas) for the</li> </ul>

<ul style="list-style-type: none"> <li>Activities: Defining personas, Creating “how might we?” questions, customer journey maps, brainstorming, co-design session...</li> </ul>	<ul style="list-style-type: none"> <li>installation of artistic activities in indoor and urban interior spaces.</li> <li>Activities: Space analysis, co-design sessions, final solution decision...</li> </ul>
<p>Phase 3: Implementation</p> <ul style="list-style-type: none"> <li>Aims at creating a real scenario (outdoor event) that could be developed into long-term solutions and will be presented in Milan Design week 2016.</li> <li>Activities: Prototyping, creating event, testing the solution...</li> </ul>	<p>Phase 3: Prototype</p> <ul style="list-style-type: none"> <li>Aims to design a final exhibition /event that will be held in the real spaces (NoLo district) and will be presented for the “ZuArt” festival 2017.</li> <li>Activities: Prototyping, service design, event design, testing the solutions...</li> </ul>

Table 1 Describing the procedure of two Design studio classes in details.

## Findings

Through on-field observation, the complexity of Design thinking towards innovative teaching and learning approach was categorized in a framework which consisted of four main characteristics:

- Design Thinking is a creative problem-solving approach
- Design Thinking is a human-centered design approach
- Design Thinking is a collaborative and multidisciplinary approach
- Design Thinking is an experimental and iterative approach

### Design Thinking is a creative problem-solving approach

Regarding problem –solving approach, Design Thinking is particularly valuable for addressing so-called “wicked” problem which was first coined by Horst Riddel and Melvin Webber (1973). Wicked means that the problem is ill-defined or tricky which is not easy to understand, is difficult to measure and the solution is unknown at the beginning of the process (Buchanan, 1992; Williams and Hof, 2014). In a usual project-based learning class, students often need to find a way to answer a general question, to solve a concrete or well-defined problem (Patton, 2012). By contrast, in the two design studio courses, students were given a real-world project that encouraged them to gain understanding and knowledge outside of their own professional territory and personal comfort zones (Ibarra and Hunter, 2007). For example, rather than being asked to design an interior space with a specific given set of physical tasks or constraints, students were introduced to existing contexts in Milan (La Piana and North Loreto district) with the problem of “connecting the community” and “adding value to the emerging qualities” respectively. As a result, they might look at the solution in a broader view that beyond the interior design discipline, such as urban design, spatial design, and service design. Moreover, it was required to be aware of city zoning ordinances and concerning the environmental and social impact before starting the project. For instance, in the “Final Design studio”, with the aim of understanding the design areas by mapping the existing system of indoor and outdoor art-related spaces, the first delivery was the “sketchmob” in the form of freehand drawings during a half-day “flashmob” action. All students were encouraged to use different types of painting or sketching materials to represent the existing spaces in North Loreto.

Concerning the attribute of creativity, Design Thinking is recognized as a creative process that brings together both the use of divergent and convergent thinking. As the key aspect of

the second phase of each project, creating as many options as possible (diverging) and then narrowing down into a number of promising ideas (converging) was clearly evident in the studios' approach (Baeck & Gremett, 2011). In the course of Temporary Urban Solution, by following the ideation guideline based on "DESIGN KIT – the Course for Human-centered Design", each group tried to dig deeper and to investigate the set of problems and then defined them as "Key learning" that were being observed in the previous phase via causes-effects statements and short explanations. Due to three "Key learnings" related to three different issues recently found, student groups continued to create "How Might We" questions as an invitation for input, suggestions, and exploration. For example, "how might we create good ways to inform and introduce the place to the community?" based on the problem of no places for sharing information. "How might we make the open place more attractive to the community?" based on the issue of existing empty space. "How might we connect people within the place?" based on the cultural diversity problems. These kinds of question will suggest that a solution is possible and offer the change to answer them in a variety of ways. After that, all the team started brainstorming session as a creative thinking technique in order to generate ideas. From about 100 concepts generated within 60 minutes, each member of group individually made 2 selections on the most promising ideas and set them score. Working as a group again, they compared the scores that were given to each idea before and then made a decision on which the three highest score as the three possible solutions. The rule of this activity is no judgment, try to encourage as many ideas as possible, build on the ideas of others and stay focus on the target (OpenIDEO, 2011).

### **Design Thinking is a human-centered design approach**

Human-centered design and user-centered design have been around in the early 1990s as the exchangeable term regarding the integration of end-user within a design process. Margaret (2013) believed that human-centered design is the combination of meta-design and service design but closely related to anthropology which aiming to humanize the design process and empathize with stakeholders. Accordingly, the first stage of the design studios' approach was to build empathy that all students needed to go into the field in order to create meaningful insights by gaining a deep understanding of people's needs and aspirations. In the Inspiration phase of the "Temporary Urban Solutions" course, a number of research methods were suggested to use by the instructors. For example, "Learning from people" method by defining the target audience was done via the form of conducting an in-depth interview. In this session, students need to ask the neighbors about how they feel about their place where they live, things related to memories, things cannot be changed or relocated, the problems that arise during the time they are living here on both human and objects. All the information and data were documented, and video recorded. Another effective research method that students must use in this course was trying to "Immerse themselves into the real context" through observation with the purpose of getting benefits from the neighbors. By doing this, the students have learned how to talk with strangers, kept the conversation, encouraged people to tell their whole story and the idea had gradually been formed in a very natural way. In case of the "Final Design studio", the activity which was recognized as the most important part in phase 1 was to interact with the neighborhoods who live in NoLo district via a video interview in order to take advantages of their helps so to understand unarticulated behaviors, desires, and needs in a way that is often more obvious and easier to see than in mainstream members of the community.

### **Design Thinking is a collaborative and multidisciplinary approach**

It is believed that innovation happens when multidisciplinary groups come together to build a common collaborative culture to discover their diverse perspectives (SAP, 2012). Although the concept of creative thinking consists of the principle of flexibility that describes the given problem from different angles, the single individual tends to generate these angles based on experiences and biases. In dealing with the increasingly complex problems posed in today's world, Design Thinking takes advantages of team-based working, collaborative approach with the aim of fostering creativity and innovation by framing a problem from different

points of view. Particularly, there were 62 international students participated in the course of Temporary Urban Solution and the “Final Design studio” revealed the number of 54. The whole studio classes were divided into groups of 4 to 5 members who have different nationalities and separate background majors, such as interior design, communication design, fashion design and product service system design. In these diverse settings, Design Thinking played a role of a common language or the glue that holds different types of disciplines together, seeks to integrate these differing opinions into wider, holistic solution and makes the projects successful.

Furthermore, the collaborative aspect of these two Design studios has gone far beyond the field of design as a multidisciplinary approach that seeks values and expects input from people who even have no specialize in design. As a result, the concept of co-designing was introduced to all students as a key factor in the second phase of each studio. Its activity enables a broader range of people with a diverse background in order to build a creative contribution in the generating of fresh ideas and more efficient decision making (Steen, Manschot and De Koning, 2011). The “Temporary Urban Solutions” and the “Final Design studio” are two good case studies of co-design in education and practice undertaken by a group of students at Politecnico di Milano and citizens within Milano city. Before starting the co-design session, professors need to contact with people who will participate and make sure that they are willing to help and co-operate with students in the design project. For example, within the “Temporary Urban Solutions” course the people that co-operated with the group named ENJOY were four members who have been working for the local paper called “Milan South” and have lived in this area for many years. In this meeting, the group started to explain their ideas and then asked for feedbacks and advice. Interestingly, through the co-design activities, such as co-sketching, co-discussing, and co-selecting, the best idea may come out naturally even not from the fixed concepts prepared by the team before. Different from the “Temporary Urban Solutions” where the students had a single chance to work with the communities on a specific one-day workshop, students in the “Final Design studio” spent most of the second phase’s time to collaborate with their design partners. In fact, there are 22 artists and 21 space owners were introduced to 11 student’s groups for the whole design studio. Meeting time and corporation manners were totally deepened on each group and its co-design partners. For example, group 4 spent only about one hour co-working with artist Alessandra Desole and 2 hours with artist Andrea Tarella. On the other side, group 1 spent even a whole day with artist Qiji from the early morning to the end of the afternoon and kept the conversation during the dinner time at her restaurant. Normally, a co-design session was divided into 3 stages including Preparation, Main activities and Finalizing design. All the design concepts were delivered as an indoor exhibition (figure 2).

### **Design Thinking is an experimental and iterative approach**

Traditionally, designers have used hand sketches, 2D & 3D renderings and models in order to represent their ideas to clients, but in Design Thinking process, the results generated during the implementation or experimental phase are often best translated by the concept of prototyping. According to Dam and Siang (2017), a prototype is defined as a simple model of a proposed solution used to test or validate ideas. A prototype takes many forms but has been usually built by cheap or recycled materials that allow designers to identify weakness early, and to correct mistakes along the way. In the last phase of these design studios, all groups tried to use recycled materials to make a prototype and brought them to the site of the project. The testing days were designed as an outdoor event (figure 1) that encouraged the community to participate, enjoyed the new shape of La Piana and North Loreto district. The outdoor events were officially closed the “Temporary Urban solutions” course and the “Final Design studio”, but it was not the time to say good bye to the project. Students had another chance to develop their solution by taking advantages from feedbacks, revealed some new insights about users which might lead to extra brainstorming session or building new prototypes. It is seen as an iterative approach that knowledge acquired at the later stages can reflect to earlier stages. Information is continually used to both inform the understanding of the problem and solution spaces, and to redefine the problems. This



creates a perpetual loop, in which the designers continue to gain new insights, develop new ways of viewing the product and its possible uses, and develop a greater understanding of the users and the problems they face. Accordingly, Students of these two courses have involved and continued to develop their own projects in order to present their outcomes in Milan Design Week 2016 (Temporary Urban solutions) and the street art festival 2017 named “ZuArt” (Final Design studio).



Figure 1 “Temporary Urban Solution course” – An outdoor event was taken place in La Piana.



Figure 2 “Final Design Studio” – An indoor event was taken place in Politecnico di Milano.

## Discussions and Conclusions

In these above case studies, design thinking approach adopted in interior and spatial design has led to the changing of the nature of a traditional design studio. First of all, it is proved that within the master level of design at Politecnico di Milano, the learning objective is not about how to teach students to design a particular interior space like a living room, a bedroom or an office space. Within the two Design studios mentioned above, the main goal is to provide for students with a creative design process driven by design thinking or human-centered design approach so to create fresh ideas and innovative solutions. Besides, another objective could be seen in these two courses is to provide students a chance to improve their

entrepreneur skills such as Communication and collaboration, critical thinking and problem-solving, social and cross-cultural skills.

Secondly, design students will no longer study within only the close space of a traditional design studio, their learning environment will spread to the outside world where they need to observe actual experiences of people and become embedded in the lives of those who they are designing for (Brown and Wyatt, 2010). For example, in the “Temporary Urban Solutions” course, a large number of citizen communities living within the spaces of La Piana- Milano was selected to be clients as well as design partners working together with design students on a specific one day workshop. On the other hand, there are 22 artists and 21 space owners were introduced to 11 student groups in order to implement co-design sessions in the “Final Design studio”. Meeting time and corporation manners were totally deepened on each group and its co-design partners. At the final phase of each design studio, there will be an outdoor and indoor event organized for the purpose of prototype testing, evaluating and giving feedbacks so to develop the project into a long-term solution.

Finally, the concept of studio instructor as a data bank or potential information source for design students have possibly changed as well because of the notion of co-design session have been growing as an action of collective creativity of design students and participants including: guest lecturers, practice designers and even the users as client working together in the whole design process (Sander and Stappers, 2014). As a result, the role of studio instructors has also been changed dramatically. They will take responsibility for both acting as a lecturer, a partner of design students, a researcher, and those who bridge the gap between design studio education and the entrepreneurship, communities and the end-users. In a formal design studio, students often have an opportunity to work with only one instructor. Nevertheless, there were two; three and even four main professors of the final interior design course gave advice, supported ideas and provided appropriate direction to one group at the same time. Moreover, it is possible for student groups to ask for extra instructional time with any professors that they were interested.

Unfortunately, the implementation of Design Thinking approach may have some existing issues need to be concerned. Firstly, most of the students participated in these courses came to an agreement that they needed to spend a lot of time in their design studio and had to ignore almost all other courses. Moreover, the preparation of weekly presentations as classroom exhibition and doing the full-scale prototype for the final event could probably cost much more money compared to other studios in the same level. Secondly, The Diversity of languages and culture could be seen as a barrier to communication and interaction, especially in the first phase of the Design Thinking process. Therefore, Asian students found it the most difficult for them to communicate with those who speak Italian only which was lead to the poor data collecting through face-to-face interviews and co-design sessions. Furthermore, some Asian students felt not really comfortable and isolated in a group with indigenous members. Although it does not affect too much on the final result of the project but still discourage the contribution of the individual. Finally, it is observed that Co-design activities sometimes do not occur as smooth as originally expected because of the rising of accidental problems in practice. For instance, some design partners were so busy and then suddenly refused their participation in the project. One specific group mentioned about the co-design activity as some kinds of fun but did not contribute to the final solution. Others might have problems and disagreements with stakeholders so found it hard to make the final decision. However, these are unavoidable problems during the implementation of Design Thinking process and they do show the unique characteristics of the human-centered design approach as well as reflect accurately what happens in the real-world context.

To be concluded, regarding the strategic application of Design Thinking approach into the Interior Design studio, it requires many collective efforts from different aspects ranging from schools to society, from educators to students, from researchers to practical designers, from experts to non-specialist and needs to be tested so to develop in diverse contexts.

Accordingly, it is strongly believed in Design Thinking as an approach to creativity and innovation for the current and the next generation.

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# Engagement strategies within co-making environments bridging spatial and organisational design

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## Abstract

Makerspaces and Fablabs are open access workshops that challenge traditional top-down approaches to innovation and workplace design dedicated to creative and innovative practices. Their built environments are the main stage where a complex ecology of stakeholders intertwine. To what extent does the interior design of a space make people more collaborative and innovative? What are the settings and platforms that may affect the way people feel, behave and interact? This paper presents the methodological journey of a PhD study conducted within 18 prominent Makerspaces located in five cities of Europe. The empirical study navigates the blurry boundaries of spatial design and organisational design, and the dynamic strategies employed to unleash patterns and congruencies, assuring the engagement and participation of the population researched. Through a constructive design approach denoted by the use of mixed methods from design thinking and qualitative ethnographic research, a Conceptual Framework is proposed bridging the interdependency of virtual and physical realms.

**KEYWORDS:** co-making environments, spatial design, organizational design, socially shaped innovation

## Introduction

As complex sociotechnical environments, Makerspaces are an epicentre of intertwined subjects and components which are having a profound impact on contemporary society. Social, economic, and technological spheres merge with political and environmental ones, unearthing the intricate problems and pressing issues that pose a challenge to citizens, governments and organisations alike. Understanding human behaviour and the types of interaction that flourish within these physical spaces offers an excellent opportunity to uncover the key drivers that are shaping today's new ways of working and, even more specifically, the future of the workplace.

Innovation plays an increasingly valued role in responding to the demands and uncertainties that we all face in a global, post-industrial world. The establishment of a 'culture of innovation' is a challenge for every institution and organisation. Traditionally, this challenge has been conveyed by specialised people interacting in specialised spaces (Dickel, Ferdinand & Petschow, 2013). Until more recent times, innovation was mostly nurtured inside laboratories, research centres, and isolated R&D departments. In contrast, Makerspaces are identified as shared machine shops, that unite the tools, resources, and know-how within an openly accessible environment, for activities of learning, working and collaborating through participative and heterogeneous processes (Gershenfeld, 2005). They welcome and include a variety of actors and stakeholders – often non-professional and non-commercial – to form a decentralised peer-to-peer network that collaborates outside organizational boundaries (Nuvolari, 2004). Experimentation practices and a hands-on approach to learning by doing is also a common characteristic. Without a hierarchy-driven structure, they are able to successfully cultivate the freedom to experiment, explore, and fail, both individually and collectively (Maxigas, 2012).

Makerspaces are physical embassies of the so-called Maker Movement: a worldwide cultural phenomena characterised by the encouragement of human agency through the cooperative act of tinkering and making (Dougherty, 2012). Its actors proclaim that we are all 'makers', and that tinkering and fixing have always been a common practice of humanity – skills that were passed from generation to generation – until we became alienated by mass production and mass consumption. Post-consumerism values – where people engage in recycling, upcycling, and the repurposing of discarded materials and objects – are part of the daily conversation. The social component manifests itself in the form of open access, where diversity and inclusiveness aim to unite people that are often estranged from digital tools and virtual networks, via workshops and other types of learning activities. As we live in a period of material abundance, we can assume that the movement itself is not stimulated by necessity, but by a genuine need of people to be enriched and fulfilled, with a better sense and control over technology (Dellot, 2015).

Under the branch of the applied sciences, technology has always played a pivotal role in intermediating architectural practices given the incremental evolution of skills, techniques, methods, and processes that shape and define our ever-changing natural world. However, the technological upheaval of the last century has had an unprecedented and profound impact on modern society, and architecture has also been challenged to respond promptly to this ephemeral and shifting scenario. In many ways, our buildings and interiors were not designed to keep a pace with the speed of digital technologies, especially when we analyse the workspace and how new ways of working and social interacting are influenced by the interior landscape.

Many scholars have argued that the value of the Internet is less about information and technology and more about community since it is, more than anything, a tool for interpersonal communication (Negroponte, 1995). Analogously, Makerspaces might resemble community centres – or third-places – where objects, identities and discourses are socially shaped, but where the built environment is also socially shaped as well. Oldenburg (1997) coined the term third-place referring to 'third-party' social environments that differ from the two most familiar and consistent ones: home and work. These spaces are dedicated to the social life of a neighbourhood community, accessible to all, without special conditions of competence for participation and contribution (Oldenburg, 1997). These distinctions are common throughout the evolution of Makerspaces, stretching back to the first open hackerspaces (Maxigas, 2012).

Makerspaces are in essence service-based open areas and, with the diversity of people, needs, and interests of both insiders and outsiders, where their services must transcend the single role of supporting digital manufacturing activities. The 18 field research sites in five European cities illustrate that the built environment of a Makerspace is usually not designed in advance, it emerges and evolves daily as the result of ongoing negotiation between

founders, funders, members and other participants. Parallels between participatory design and participatory making have been the focus of some studies, attesting the shift from a traditional design-before-use approach, to a design-in-use one (Seravalli, 2012). As each independent community is self-regulating, the process of decision making with regards to design varies immensely from case to case. Even though a core characteristic of its practices is to be non-hierarchical, relative order and authority are needed when it comes to interior, mostly because of the costs involved with altering physical spaces, but also because such change will have a serious impact on people's behaviour.

## Hypothesis Focus

From the point of view of research focusing primarily on the design and architecture of interiors, what are the specific reasons for investigating the built environment of Makerspaces? Firstly, as stated before, Makerspaces have a bottom-up approach to its construction and set up, a core characteristic of grassroots and peer-to-peer communities. Space usually grows organically, as a result of the participation and appropriation of its regular users, participants and stakeholders, giving purpose to the areas based on usage and demand (Dickel et al., 2013; Kohtala, 2014; Seravalli, 2012). Therefore, the emergent platforms and physical structures found on site are not designed by outsiders or experts; they truly demonstrate members' needs and shared solutions.

Secondly, Makerspaces are all about the hybridization between bits and atoms, between virtual and physical environments. The planning and design of the FabLab model, a worldwide chain of Makerspaces conceptualised at MIT, took place in an already digitalised world, circa 2002 (Gershenfeld, 2005). This gives the concept its edge and uniqueness. The interior design of a FabLab or a Makerspace embrace the properties and features from the so-called digital revolution, it is an organised chaos, non-hierarchical and in constant flux. It is a physical platform with a random diversity of components and participants ready to connect, create, collaborate, hack, remix, and distribute information and knowledge. Just like the Web, more than a fixed platform, Makerspaces are also a network and capable of adopting new configurations to shape new patterns and promote random networking opportunities.

For centuries, workspaces have been places built for collaboration and defined by their furnishings and fittings. Today they are constructed mostly of networks, which do not even require physical proximity. The digital realm became so pervasive and omnipresent that there is now a tension between these two worlds, they coexist, and can no longer be separated. For the participants of this research, the digital workspace became their primary workspace. The physicality of making might ask for a bodily presence and hands-on engagement with tools, people and machine, but most of the time they immerse themselves in small screens and digital arenas. For youngsters, even their social life is primarily digital. In fact, virtuality penetrates every dimension of our life simultaneously, blurring our levels of proximity (Groves and Marlow, 2016).

The preliminary participant observations inside the Makerspaces, following the grounded theory methodology (Glaser & Strauss, 1967; Charmaz, 2000), led to the chief hypothesis of the PhD enquiry: intangible qualities and behaviours from digital workspaces are being transferred and materialised in the built physical ones. In fact, Makerspaces' territories offer great opportunity for investigating this speculation as they present a random synthesis of both worlds. What does it mean to be digital? What settings and layouts resemble digital systems? Are there examples of furniture and furnishings that could serve as evidence? Does the way people use and manipulate the tools and resources available in Makerspaces have any relation to the way they act and behave inside virtual spaces? How can a workspace further embrace and support digital natives, the generation of members that were born into a digitalized network society?



In qualitative research, distinguished by subjective procedures and measurements, a hypothesis is usually not employed or recommended. However, the non-specificity and complexity of Makerspaces as socio-technical environments required an instrument to sharpen the focus, bringing clarity and direction to the research. Having a hypothesis would allow for accurate information to be gathered and discrete characteristics to be observed, enhancing objectivity. The practical outcomes of the research are a consequence of this choice and process. The participants collaborated with insights and analysis to create the Conceptual Framework collectively, and they saw value and purpose in following this path since the first qualitative interviews and focus groups.

## Methodology Bricolage

As an emerging field of study, there is still a lack of academic literature and substantiated theory associated with the built environment of Makerspaces. The methodological process chosen can be described as theory building, or constructivist grounded theory, where the author proposes inferences by way of particular instances, involving the construction of theory through the continuous analysis and iteration of data, operating inductively in contrast to the hypothetico-deductive approach (Glaser & Strauss, 1967; Charmaz 2000). The author joined the first Makerspace, FabLab Milano, just two weeks after starting his PhD in Design at Politecnico di Milano, in November 2013. Blending in as a member, not as a researcher, he could garner direct experience of the collaborative social interaction, the hands-on approach, and the non-hierarchical innovative practices that underpin the Maker Movement pledge. FabLab Milano provided the open territory of early observations, identifying the first patterns and congruencies through an iterative process where findings are tested as they emerge and data is analysed as it is collected (Glaser & Strauss, 1967).

Inductive reasoning and open-ended exploratory methodologies proved to be the right choice inside spaces where innovation thrives via random collisions, uncertainty and freedom. Therefore, the strategy and the structure of the research became a continuous work in progress, with a degree of flexibility to adapt to sporadic decisions. Concerning reflexivity, the intention was to give full voice to the research respondents, raising the importance of the qualitative interviews as the primary method of data collection, assuming knowledge, objects and environments are a compilation of their social constructions (Blumer, 1969; Rudestam & Newton, 2007). Symbolic interactionism offered an investigation between materiality and symbology, as the members of Makerspaces build their identities and discourses collectively through their physical objects, social roles and ideologies. The built environment acts as an instrument of self-definition and self-promotion, being at the same time a platform and an outcome of their social interaction through an interpretative process where meanings are continually modified (Blumer, 1969; Strauss, 1978).

Even though the decisions about the overall methodology are logical and, to a lesser extent logistical, they were led by the theory building practice throughout the preliminary observations in the first year, mainly in Milan, London and Paris, due to their urban demographic and geographic importance. Later Barcelona and Amsterdam were added along with short visits to the towns of Turin and Boston, as homes to four of the most significant Makerspaces in the world, the FabLab IAAC Barcelona, FabLab Waag Amsterdam, FabLab Torino and Asylum Boston Hackerspace. In the end, 18 locations granted access to the research (Fig. 1). Other sites were investigated through desk research but were not included in the case studies list, mainly for lacking the fundamental criteria of offering access to participatory research or face-to-face qualitative interviews. The primary case study, Makerversity, in London, was assessed over five different periods, between 2014 and 2017. In total, almost ten months were spent at this particular location with active participatory research, as it offered more complexity by presenting a hybrid model of comaking and coworking settings and services.

Name	City	Walkthroughs Space Analysis	Participant Observation	Qualitative Interviews	Quant. Surveys	Cultural Probes	Number of Interviewees	Number of Visits	Period
FabLab Milano	Milan	X	X	X		X	6	32	Nov-Dec 2013; Feb-Jul 2014
The FabLab Santa Marta	Milan	X	X	X		X	2	12	Sep-Nov 2015; Sep-Dec 2016
Open Dot	Milan	X	X	X			2	7	Oct-Nov 2015; Sep-Dec 2016
Polifactory	Milan	X		X			1	9	Jun 2016; Nov 2016; Apr 2017
FabLab Torino	Turin	X		X			1	2	Sep 2015; Jun 2016
Makerversity	London	X	X	X	X	X	13	127	Sep 2014; Oct-Nov 2014; Apr-Aug 2015; Apr-May 2016; July 2017
Machines Room	London	X	X	X		X	5	16	May-Jul 2015; Apr-May 2016
FabLab London	London	X		X			2	2	Jul 2015; May 2016
Institute of Making	London	X	X	X		X	2	4	Apr-May 2016
MakerCafe	London	X		X			2	8	Apr-Jul 2015
FabLab Carrefour	Paris	X	X	X		X	2	5	Mar 2014; Oct 2015; Mar 2016
Le Nouvelle Fabrique	Paris	X		X			2	4	Mar 2014; Mar 2015; Oct 2015
Usine	Paris	X		X			2	3	Oct 2014; Sep 2015; Mar 2016
FabLab IACC Barcelona	Barcelona	X	X	X		X	2	4	Fev-Mar 2015; Aug 2016
Made BCN	Barcelona	X		X			1	3	Fev-Mar 2015; Aug 2016
Ateneu de Fabricacio	Barcelona	X	X	X			2	4	Fev-Mar 2015; Aug 2016
Makerversity AMS	Amsterdam	X	X	X		X	2	4	Aug 2016; Mar 2017
FabLab Waag	Amsterdam	X	X	X			1	3	Aug 2016; Mar 2017

Figure 1: List of Makerspaces with corresponding locations, research activities, number of interviewees and visits.

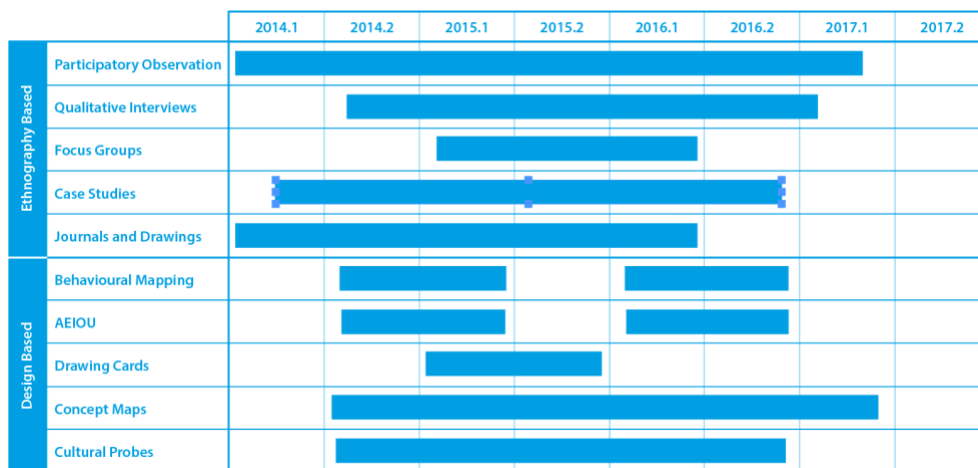
The methodological decisions followed a ‘bricolage’ approach, using mixed methods and multiple means and schemes borrowed from the social and behavioural sciences, and also from human-centred and service design approaches through design thinking techniques that are effective in researching complex communities. It is also a trait from the constructive design research, where conceptual scenarios and prototypes can often be used throughout the enquiry (Koskinen & al., 2011). Affinity diagrams, conceptual maps, behavioural mapping, drawing cards, and cultural probes proved particularly important to generate not just valuable data, but mainly motivation and engagement lined up with the typology of the population, which emphasises practice (Fig. 2). Participation in workshops inductions, short courses, talks, breakfast meetings, even parties and happy hours, even though casual and unofficial, was also a source of deeper and accurate data. This intimacy, which naturally developed and grew over the months and years, demanded extra effort and attention so as



not to bias the investigation in some way.

Figure 2: All through the study multiple methods triggered engagement and participation among the sample population. Clockwise: conceptual maps, affinity diagrams, behavioural mapping, cultural probes, AEIOU, and drawing cards.

There was a list of methods at the disposal of the researcher. Data was collected in distinct phases and stages, but forward planning allowed for a large degree of flexibility (Fig. 3). In fact, the particular characteristics of each participant, the opportunities for engagement, such as the time and day that best suited them, and the contextual settings of each location would ultimately define the methods that could be employed. Direct observation, surveys, one-to-one interviews, and focus groups proved insufficient alone in engaging members with the research, helping them to cope with abstract concepts and intangible theoretical attributes, which were also part of the inquiry. The population was mainly made up of engineers, designers, architects, programmers, makers, and artists, characterised by a hands-on practical attitude. To fill this gap between theory and practice the solution was the design and development of several Conceptual Cultural Probes, using the same 3D modeling programs operated by the members themselves. Each cultural probe corresponded to a property of the Conceptual Framework making the intangible conceptions a bit more tangible. Cultural probes became a game changer. The researcher also started to be treated as a designer and

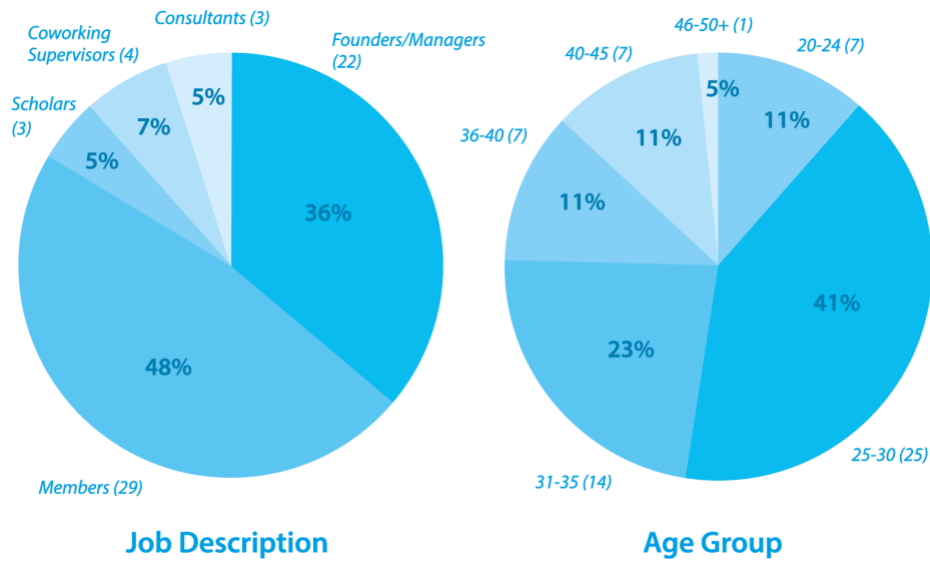


maker, and they could foresee a practical application of the study into their own territory.

**Figure 3:** List of ethnographic and design research methods according to each period of the research.

The semi-structured interviews involved 61 participants in total, from different age groups and job descriptions. They were all conducted face-to-face by the researcher with founders, managers, members, scholars, consultants, and coworking supervisors, and were recorded digitally both in video and audio, a total of 31 hours of conversation (Fig. 4). The

walkthroughs and space analysis produced more than 900 photographs and dozens of



sketches and drawings.

**Figure 4: Pie charts visualising interviewees' age groups and job descriptions.**

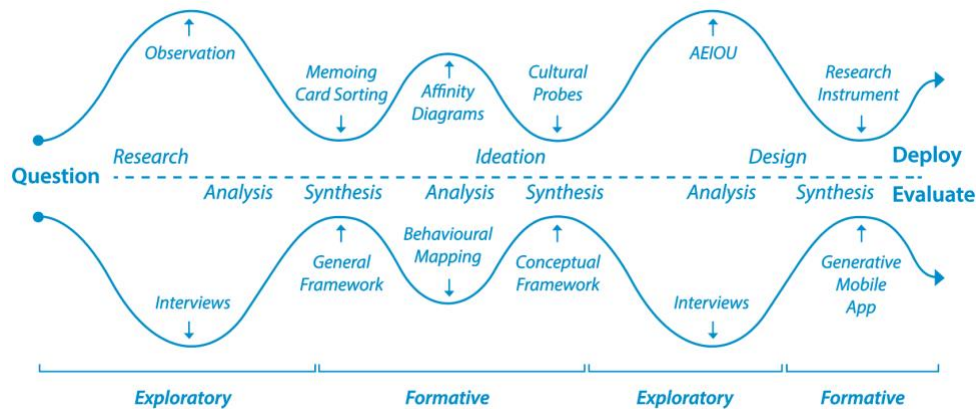
The sample selection of the population offered a comprehensive range of qualitative variables, representing a diversity of socio-professional profiles with varying ethical-political beliefs, enriching the standards of the data set. They are the leading actors and mediators of the selected Makerspaces, and also the representatives of organisations that relate directly to the Maker Movement realm, symbolising a substantial strata of prominent locations within important European cities. They personify what some authors call the 'pivotal target group', able to provide significant conceptualisations (Davies, 2007, Flick, 2009). This typology of interviewees is essential for the validity and reliability of the findings that have formed the Conceptual Framework and the mobile application as a research instrument.

## Cultural Probes as Synthesis

As a design researcher, the author based the design of the study on social science models, but added several methods borrowed from the design practice, moving away from traditional positions where the researcher must be an impartial and isolated observer (Kumar, 2014), acting as a facilitator, uncovering new insights and discoveries through the multi-disciplinary approaches of service and organizational design. However, in constructive design research, doing design becomes a crucial activity. When researchers construct something, they may find issues and problems that could not be perceived otherwise (Koskinen & al., 2011).

The Conceptual Cultural Probes were at the same time a tool of analysis and a form of visual synthesis. Ideas and concepts taken from the field work combined with desk research would be synthesised in the form of visually designed 3D models. Debates and critique would give feedback to the analysis, starting a continuous process of analysis and synthesis with the creation of more cultural probes. Visualising concepts from the Framework as a form of theoretical and practical synthesis meant that the theoretical assumptions could be rooted in practice so that participants could find purpose and benefit from the research. Synthesis displayed through the Cultural Probes can be perceived as a creative outcome of research

from the common sense of the population, acting also as a tool for probing new data for a continuous loop of contextual analysis and further inductive synthesis (Fig. 5). The whole process was systematic and valid, perhaps unorthodox for the social science traditions, but



effective for the involvement of the maker community.

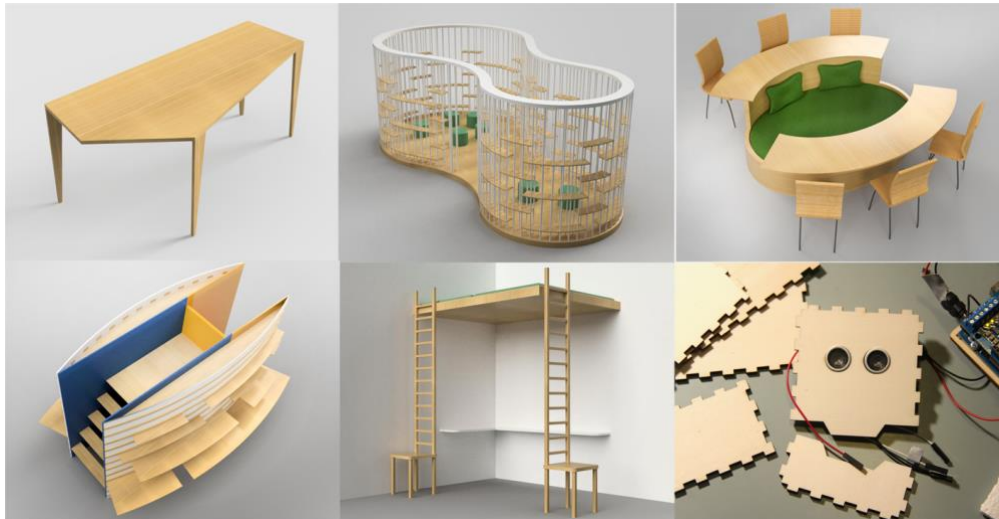
**Figure 5:** The process of analysis and synthesis informed by the use of mixed methods were also based on the design practice, with convergent and divergent thinking phases. Source: author, based on Systemic Design approaches, Jones, 2014.

Cultural Probes were hypothetical and crucial for analysing and clarifying abstractions, helping the participants' connection with the basis of the hypothesis and the research. There is an imaginary but still reliable aspect of design practice that was immediately relevant to the members' lives. Their first reactions consistently concerned design decisions, as if the Cultural Probe was about to enter a development phase. The discussion started with form and function analysis, the general look and feel, the choice of materials, and often moved on to cover its mechanical properties, processes of construction, cost, and other technical details. Gradually, all these aspects were dealt with and the theoretical concepts could be examined in more detail, giving rise to new insights and discussion. Encouraging imagination and facilitating communication also lead to a more critical approach to the Framework theoretical components.

Culture Probes were always introduced as a means of alternative explorations, rather than just relying on static responses. They acted as a form of provocation, materialised concepts and encouraged debate. The primary objective was not theory or hypothesis testing. However, they do represent a powerful tool for analysis, synthesis and participants' engagement. There was a constant tension and plenty of ambiguity, as the quality of each Cultural Probe relates to personal criteria, such as aesthetics and taste. Their unfinished appearance proved valuable to avoid any form of colonisation. Therefore, Cultural Probes could vary immensely, from solid objects or pieces of furniture to having more intangible features such as sound, light or digital messages sent via Twitter accounts. 'The Non-Hierarchical Table', 'The Meeting Library', 'The Shared Bed', 'The Multi Desk', 'The



Collision Chair', and 'The Meet Maker', represent attributes, features and concepts present



at the Conceptual Framework (Fig. 6).

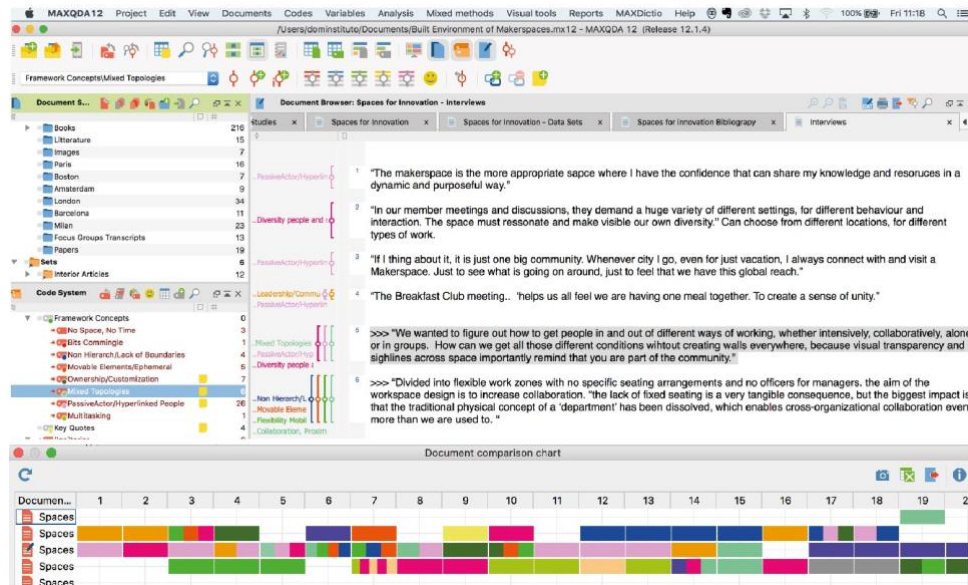
**Figure 6: Cultural Probes typified attributes, features and concepts present at the Conceptual Framework.**

## Conceptual Framework

The primary hypothesis started as a mere intuition and assumption based on the initial participant observations and the core characteristics of the phenomena, but soon became the basis of the enquiry. As a consequence, since the beginning of the study, a set of methods were employed to reveal the members' perceptions about the digital qualities; the distinctive characteristics of bits and of 'being digital'. They helped them to reflect on their behaviour in the space that they occupy and identify commonalities between the digital environment and their individual and social actions. There was a general consensus that office buildings are not suited to the 21st digital lifestyle, and Makerspaces are more successful in merging digital qualities and patterns into their physical settings, maximising the chance of random interaction and optimal performance. Participants also pointed out that digital territories often lead to isolation; virtual connections do not always translate into social and collaborative encounters. Technology has become so omnipresent and pervasive that there is no distinction between life and work, between digital and physical realms. It is logical to presume that intangible environments will also affect the attitudes and social interactions within tangible spaces. They also impact the layout settings, and architectural elements, besides ethereal rituals and protocols.

The analysis strategy utilised both systematic and interpretative approaches, meaning that indexing and coding were applied concomitantly with cross-referencing and conceptual mapping (Kelle, 1997). The amount of data gathered informed the necessity of extra systematic research tools to give structure and reliability to the analysis and synthesis processes. The quantification and measurement of variables and indicators were never a particular concern in this qualitative study, but some degree of statistics were, of course, most welcome. The software program chosen for the computer-assisted qualitative analysis is called MAXQDA (Fig. 7). It was designed for qualitative, quantitative and mixed methods data, combining text, multimedia, pictures, tables and surveys. Its first use was for the interview transcripts, as it offers a powerful built-in tool for importing audio files with real time typing via its internal media player, as well as cross-referencing with added reflexive notes, such as memos, comments and annotations, reinforcing the elements of the

Conceptual Framework. Nevertheless, creating a code or assigning a data segment to a specific coding can also be considered an interpretative process. The analysis was built from data via an interactive process where categories and features presented in the Conceptual Framework came from the interaction between the interviewer and the interviewee, the observer and the observed (Charmaz, 2006). As stated before, the primary concern of the study was that any outcome should be based on the respondents' views of their individual



empirical environments and social realities.

Figure 7: Print screen of MAXQDA free coding systems with frequency analysis.

In fact, the Conceptual Framework is an outcome of founders, managers and members' visions and perspectives. The researcher acted as a facilitator, analysing and synthesising, but allowing plenty of participation from the sample population. There is a high level of subjectivity in the results, and the identified elements are somehow abstract, even if they eventually possess a visual or physical evidence, or are apparently supported by participants' interviews. They can also be described as 'modifiers', suggesting that they can affect and have a range, a certain level of strength, starting by discerning the intangible and tangible aspects (Fig. 8). The Conceptual Framework also highlights possible correlations and causalities among its components.

The intangible features are those characterised by not having a physical presence and usually relate directly to the qualities of digital realms. They are invisible but have a strong influence in the way people feel, interact and perform within the space. They prove that a Makerspace is not just about gathering people under one roof, in fact, they are about how people can collectively work together. The intangible ethos, the culture, and a set of hidden systems and protocols are crucial for this acquirement, and they are also governed by other intangible traits. In contrast, the tangible properties are those that are directly perceptible by the senses, visually or by the touch, with a more apparent physicality. They typify the final testing of the hypothesis, staging evidence that an abstract digital trait can cause physical phenomena, being transferred and manifesting itself tangibly into a piece of furniture, or a particular disposition of the floor plan. In total, 17 elements were identified and are present in the Conceptual Framework. The original intention was that they could be measured, offering a visualisation of each analysis from a particular individual and Makerspace location. This process proved to be too laborious to be performed collectively within focus groups. The 17

elements would later be reduced and clustered into eight attributes, through a more practical and feasible Research Instrument (Fig. 9).

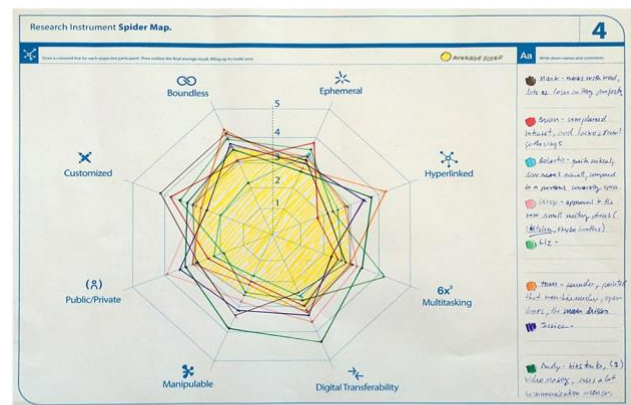
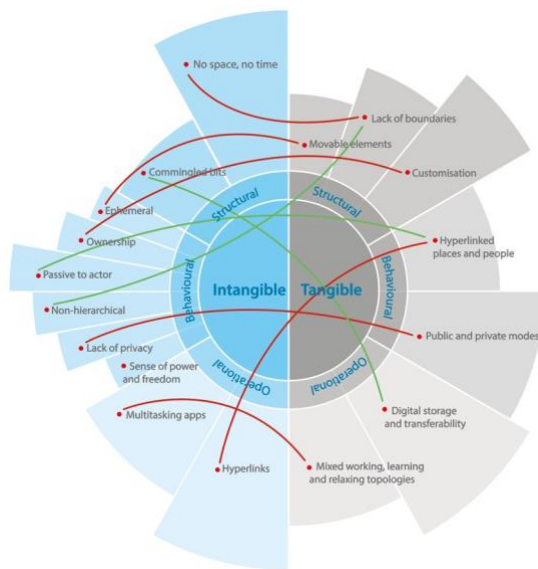


Figure 8: Conceptual Framework as the result of the hypothesis investigation, with two levels of categorizations and 17 distinct elements.

Figure 9: The participants' responses are layered on the Spider Graph for comparison. The visualisation reveals the average score, and make it easier to check for discrepancies.

Participants also emphasised that the right balance of these elements, their presence and influence, is highly subjective and contextual. For instance, the concept of 'non-hierarchy' is welcome and nurtured in general, but it is more highly valued within a hackerspace than an environment designed for entrepreneurship and business modeling. Too much hierarchy leads to control and systematisation, too little leads to disorder and chaos, decreasing efficiency and productivity. Each attribute intensity is perceived as an individual choice and perspective, and the overall result is a social construct that reflects the community choice. This fact deemed as an important aspect of the Conceptual Framework: it is only by identifying, mapping, discussing and debating those aspects that they are able to understand their spaces and propose practical changes and enhancements. Managers were particularly interested, foreseeing the possibility of practical guidance for their decision making processes.

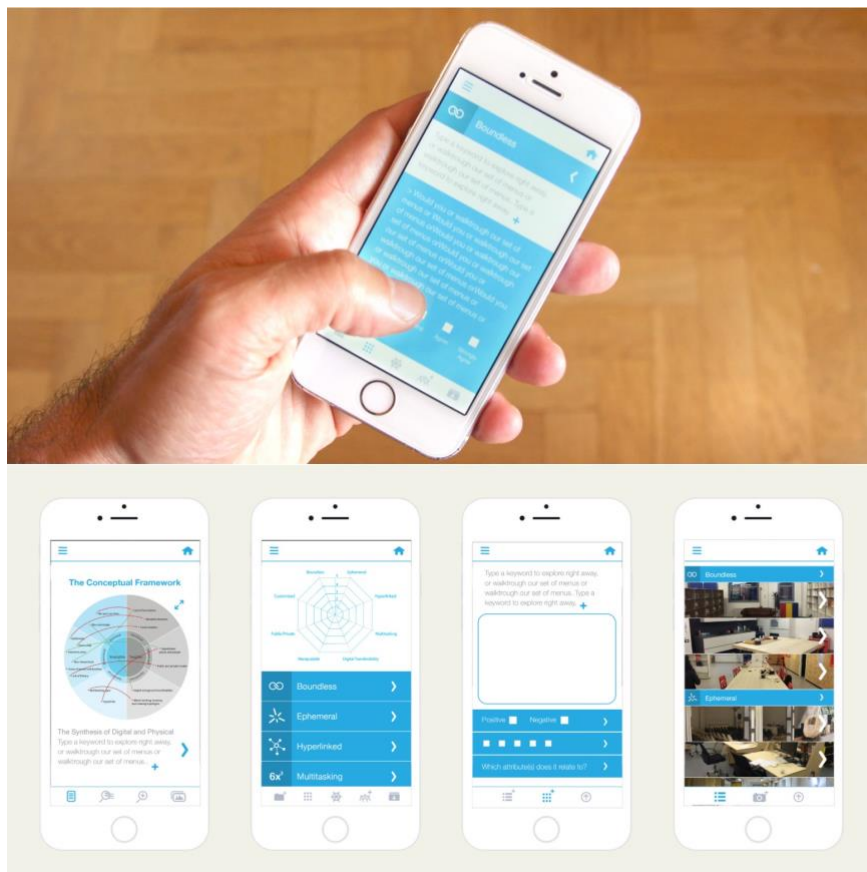
## Generative Mobile App

Throughout the study, the Research Instrument (Fig. 9) also acted as a form of group interview. However, it was not easy to gather participants for many reasons: the lack of time, the difficulty in syncing different schedules, the laborious task of setting up the stage with paper templates, post-its, notepads and markers. It became evident that the Research Instrument needed to be more accessible and practical, even diminishing the need of a 'researcher' as a facilitator. Ideally, members should be able to access the research content effortlessly, to make amends and adapt to each particular context, to calculate measurements automatically, and to produce reports with ease. To use a figure of speech, the researcher needed to find a way to put the research 'in the hands' of the participants.



The logical path was the build of a mobile application, a piece of software with complete access to individual mobile devices, from data processing and cloud storage to built-in cameras. An ambitious goal, as the researcher didn't have any previous experience with mobile apps and UX or HCI design disciplines. However, the journey of building the app would also become a research experiment, testing the Makerspaces' ability to deliver collective learning, collaborative practices, and tools and know-how for the rapid acquirement of new knowledge and skills.

The mobile app presented at the PhD dissertation is as a working prototype. The wireframing can be tested directly on any mobile device, without the need of hiring servers or repository cloud systems. The app's structure aimed at breaking down the research content into basic building units that could relate to each other, forming progressive actions. The first session is the Interpretative area, where the Conceptual Framework and the hypothesis are explained. The Critical Area introduces the Research Instrument, with the eight attributes, the Linkert questionnaires and the spider map graphs, providing visual representations of the individual rating scales. Groups can be formed remotely, and the research can be conducted simultaneously in different places or times. The Generative Area is where the participants can add their perspectives about the concepts or new statements for the surveys. These additions can be utilised solely in the current research session or added to the Research Instrument after online curation. Extra features include the ability to take pictures and categorise them among the eight attributes to create a visual repository of evidence. Geolocation services are able to help people find places, addresses and contact



information to enable open communication and the exchange of experiences (Fig. 10).

**Figure 10: The mobile app screens from the Interpretative, Critical and Generative sessions, and extra features such as the repository of pictures. Adobe's Experience Design software allows prototyping and iterating directly on any mobile device, without the need of coding and software developers.**

Since the first visit to the first Makerspace in Milan, it was clear that any theoretical framework developed to explain ideas, concepts, and facts, irregardless of whether based on objective data or speculative conjectures, should become a tool that could construct more than explanations and relationships. It should ultimately assist in the building of applicable systems and physical interventions, improving members behaviours and social interactions. This was implicit of the nature of the research theme: workspaces of a particular type of community that highly praise the act of making and changing the world around them. Therefore, the Research Instrument and the Generative Mobile App must be seen as work in progress, something that is flexible and subject to alteration and improvement following the use and participation in each context.

## Conclusion

Digital has become central to our everyday life experiences. It is reshaping and blurring the divide between what is private and what is public, what is work and what is leisure, what is virtual and what is real, in every single space we inhabit. Makerspaces can appear to be like any ordinary workspace, as places framed by their furniture and furnishing for collaborative practices. However, it is mainly comprised of networks, physical and digital. Participants often state that a maker belongs to any Makerspace, that they feel part of a world of infinite locations. The digital workspace often becomes the primary workspace, with particular properties and qualities that may have existed in traditional workspaces, but now take on a whole different dimension, intensity and strength.

To better understand these merging qualities and map their features, concepts and principles that may rule the social interaction between and within these territories, research instruments were created to collect data from the participants and give them tools to construct the research themselves, under the lens of a Conceptual Framework. They are significant not just for each community studied but for the overall discipline of interior design, mainly because the hybridisation that has been challenging traditional perceptions of a workspace is undoubtedly favourable and constructive. The participants agreed that the outcomes of the PhD dissertation reveal components that boost their performance, increase their engagement, and encourage their collaborative and innovative practices.

The data collection required intuition, creativity, and imagination, both from the researcher and the participants, reflecting a constructive design approach with the belief that the act of design is able to achieve and deliver new knowledge. This strategy was also justified by the need to guarantee engagement and participation of a population that has a openly practical attitude, a lack of time and no direct personal benefit from the study. Some participants also showed less interest in grasping theoretical and abstract concepts. Even though supportive and helpful, it was a challenging population that showed more trust and attentiveness when the research was translated into practical instances, such as the 3D models of Cultural Probes. Once more, blending ethnographic and design thinking methods successfully unified the blurry borderlines of spatial and organisational design.

In the end, culture is the main force behind the designing of a Makerspace. The design of culture is both a subtle and tremendous endeavour, especially in the locations with financial constraints and overwhelmed managers and staff, which are the vast majority. The maker ethos is powerful and sometimes serves to overwhelm obstacles or preset strategies, and evolve naturally through daily social interaction. Here, once more, the digital workspaces influence the physical ones dramatically, because the social interaction is actually mostly a digital interaction. It is on the forums, the file repositories, the tutorials, the articles, the blogs, the podcasts, and the social media channels that the maker culture is promoted, reshaped, and reinforced. The visitor that arrives at a Makerspace for the first time is never completely blank or naive. The prospective member is already hooked into that culture. The built environment comes as the attractive, practical, and functional habitat, the stage on

which the culture will have the freedom to perform and evolve. Inside Makerspaces, designing the space is just one of the multiple activities that ultimately denotes designing the culture.

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# Dance of designing: Rethinking position, relation and movement in service design

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## Abstract

Despite the recognised need for service design (SD) to understand the complexity in which it intervenes, we are concerned with its desire to fix dynamic configurations through a dominant instrumentalized worldview. We critique the journey map – an iconic method in SD – as one illustration of this fixing tendency in order to highlight how nuanced details are sometimes designed out and argue why such omission is ethical and political. In contrast, following feminist theory, we ground our accounts of practice to argue that service ecologies are situated and continually emergent, constituted by the changing configuration of various things. Instead of *fixing* to make static or finalise, we use *freezing* as a temporary state to trace and orientate our movements in a co-design workshop. The similarity of and tension between notions of *fixing* and *freezing* is used to call out nuanced differences and attend to the intrinsic, dynamic and temporal nature of service design.

**KEYWORDS:** positionality, politics, emergence, feminist theory, participatory design

## Introduction: Accounting for relationality in service design

Service design operates in the realm of emergent and dynamic relationships – among people, between people and things, and between those differently situated. Relationships in service design are also created by imaginations of what things, spaces, places, and people could or should do in the future, and how access to those futures are framed. Closer examinations of the relational also include accounting for perspectives of people doing describing and intervening through design. In other words, how a practitioner orientates to service design decides what matters, shapes their experiences, suggests what is deemed ‘knowledge’, and more. If such phenomena and dimensions are significant in noticing what emerges through interventions, and what (designers) can imagine, we question why they are recognised or ignored and attribute these to two broad tendencies, centrally related to worldviews.

One tendency stems from tendencies to frame and report on design as a ‘neutral’ site. This approach often relies on detaching people and things through abstraction in order to shape what they become as material. Such abstractions can be seen in the popularity of methods coming to define the practice of service design, including personas, stakeholder mapping, service blueprints, system architectures and more. Their ease-of-use and replicability are their strengths. These have become desirable components of toolkits, purchased by clients and packaged by practitioners as training programs for organisations. The emphasis on method means one practitioner can become inter-changeable with another who has the training and capability to use them (Akama, 2014). Here, why, where and with whom methods are used matters primarily for the purposes of achieving the intended outcome, and/or sharing learnings about methods that can be replicated and generalized. In this way, service design has successfully commoditized such methods across a range of sectors – from corporations to government to non-profit services – and made demonstrating its value as a way to diagnose and ‘improve’ ‘poor’ services part of the practice itself. This focus on concreteness, however, leaves less room for mess or unpredictability beyond that already accounted for by the service proposition.

This worldview also sees systems (and/or projects) in a ‘functionalist’ way, influenced by operations management and systems thinking. This paradigm suggests that a complete understanding of systems and their parts are possible (see example Fig 1) by stripping away cultural, social, geographical and political dimensions. Visual models, like the journey map, are believed to be able to ‘document and represent this complexity ... where models are used as surrogates of real-world situations’ (Sangiorgi et al., 2017, p. 55). Yet, what is a ‘complete system’ and what does this assumption skew or omit? Design studies scholar, David Brody (2015), has studied the impacts of design of hotel services on housekeeping staff and other laborers. He notes how designing the multiple components of a hotel service – furniture, aesthetic flourishes, systems for housekeeping and ‘green’ incentive programs – also calls into question the experiences of those who bring it into being and maintain it. At the centre of hotel design are deeper questions about who makes choices, who is impacted by them. Who is considered the ‘user’, for instance, in the selection of bathroom sink cabinets or hotel beds? In determining whose ‘journies’ are centred, how are labour conditions, such as (negotiated) wages and (racial and gendered) experiences, accounted for? What is the role of unionization in how hotel services are imagined and represented? How are histories of race, class, and gender-based organizing around work considered? Who and what is mapped and accounted for, and on what terms, in order to present an envisioned designed service? We begin to see how these questions and more seem to be omitted, either from consideration or from inclusion, in this functionalist worldview. This concern echoes John Law’s (2004) call to retain the *mess in social science research* and constrict tendencies towards ‘methodological hygiene’, which we imagine here in relation to design research and practice.

Another worldview, shared by the authors of this paper, takes a feminist, phenomenological and cultural studies-led view. Arguably, this orientation may be a less common and popular framing in design, yet it is making strong in-roads owing to notable scholars in anthropology (like Jeanette Blomberg and Lucy Suchman), design and architectural studies (such as David Brody and Mabel O. Wilson) and participatory design (PD) (like Anna Servalli, Mette Agger Eriksen and Ann Light) who have argued for ways of seeing design more dynamically, constituted by and impacting upon the sociality and messiness of our world. It is important to note the distinction in the messiness we speak of here. It is not the same as the iterative, ad-hoc, intuitive, improvisatory attitude to indeterminate and unfolding situations of design with materials and creative processes that was always part of design’s story (e.g. Schön 1983). Instead, the mess we refer to is the relational politics among people with different agendas and working with contingent dynamics with people situated in different ways to negotiate overlapping or contrasting goals (Agid 2016b; Akama & Light 2018). Many others scholars have made such compelling arguments in SD. For example, Lucy Kimbell and Jeanette Blomberg (2017, p. 86-87) build on PD to reframe designing services as a ‘socio-material configuration’ in which services ‘are experienced and co-production is achieved through the situated, local participation of a range of actors’ and ‘constituents become agential through

their inter-relating'. Here, the drive for replicability and generalizability as primary design goals is reimagined through the lens of sensitivity to power, politics, class, gender and embodied knowledge and practices where these dimensions constitute how design is performed and impacts on others. Anna Seravalli and Mette Agger Eriksen (2017) take 'infrastructuring' as a relational approach to understanding and working in and through infrastructures in PD to call on service design to delve further into acknowledging the tension between designers' agendas and lack of control by attuning to the always-incomplete, always-in-process nature of infrastructuring and systems' complex contexts.

Accounting for our worldview is a risky move, especially if objectivity is privileged as the basis of knowledge. However, we have learnt that how we account for worldviews among actors and how we engage with their interrelations and differences, *matters* for how we make meaning and take action (Crenshaw, 1991; Grossberg, 2010; Hall, 2009; Hall et al, 2013; Haraway, 1991). We counter the criticism of lacking objectivity to argue that assuming or ignoring one's worldview is as problematic in understanding and sharing the complexity of design practices. This is because (service) design is a discipline geared towards changing and intervening in people's lives and futures, allegedly for their 'betterment'. If this is design's claim, we argue that making transparent how and why designers and researchers privilege certain phenomena more than others is an ethical concern and commitment.

Thus, our approach is to inscribe the person, their relations and positions, 'back' into service design to speak to factors that are imagined as components of services but left conspicuously missing. The methodology of this paper is to use a series of vignettes tracing key moments of a co-design workshop as a means for re-thinking the role of people in designing for service.<sup>1</sup> We ground this discussion in our differently situated experiences of the workshop, written alternately by each author (Shana Agid as S and Yoko Akama as Y in italics). The experience of being positioned through this workshop, and of trying to position participants, respectively, is framed as a metaphor for our work across fields of co-designing with people (including SD and PD). We use this narrative as a core fulcrum to discuss the importance of positionality, relationality and movement in service design as both emergent conditions and as (unknown) material. It is important to note that the workshop *itself* is not service design or undertaken as part of a service design project.

These vignettes are devices providing entry points for readers to imagine this experience together, using an auto-ethnographic technique that Yoko has been using. The stories are 'anecdotal and recalled that way, given that they were never formally documented. They were developed from notes and reflective thoughts combined with recollections, as a way of creating accounts for entry points into experience... there is a fictocritical quality to the fragments in order to accentuate moments and my perception that can never be captured in a video or a transcript' (Akama 2015, p. 265). It echoes John Mason's (2002, p. 57) *Discipline of Noticing* to give 'brief-but-vivid narrative', and Stacy Holman Jones' (2016, p. 229) critical autoethnography, where; 'Instead of stories *or* theory, aesthetics *or* knowledge, art *or* autoethnography, we need a language that unsettles the ordinary while spinning a good story.' Thus, the methodology switches between two modes of writing; one based in the workshop description and reflection, and another that unpacks and frames this through service/participatory/design discourse. In the analysis, we use the customer journey map as a fulcrum, selected from the plethora of methods on offer, as the best illustration of use that predicts or prescribes actions between people and their idealized outcomes, often with the aim to *fix* the positions and relationships as an end-point or in their use to diagnose problems at specific 'pain points'. Through the vignettes and their discussion, we propose instead that how we find and make capacities for creating knowing in practice needs to attend more to what we call *freezing*. By this we mean making provisional stops in the midst

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<sup>1</sup> This co-design workshop was led by Sissel Olander and Shana Agid during a design conference on design and power at NORDES 2017. The workshop sought to explore strategies for "doing" critique and making (possibilities for) action in constructive design research. Its aim was to investigate and discuss how practice-based design researchers position ourselves as critical and / or post-critical interveners and change agents in complex project set-ups with collaborators situated in a range of ways (Agid, S. and Olander, S., 2017).

of designing with people to see how practitioners are positioned, in relationship to whom and to what, and grapple with what this means for what comes next in emergent processes intended to design open and ‘ongoing’ services and systems (Servalli & Eriksen, 2017). In sharing our reflection and analysis in a deliberately unconventional way, we demonstrate three things in line with our argument on the doing of service design and the positioning of designers and the people we imagine in services:

- 1) This way of accounting commits to feminist and phenomenological worldviews by making ourselves accessible and situated. The co-design workshop is a distilled story to illustrate how it can perform almost like a parable or haiku in offering up lessons on specificity and emergence. We attempt to make our stories relevant to others by overlaying them with analysis and interrogation, thereby combining theory and everyday language. This technique is offered as a speculative means for insights and granularity to be shared as research, in contrast to reporting that strips away personal voices and partial perspectives.
- 2) The drawings we show as examples articulate different traces of movement. They work to fix and freeze positionality, relationality and movement. But, we argue that the intentionality and possible effects of each differs; one attempts to learn, open up, and co-explore together (Fig. 2, 3), and another attempts to capture and prescribe how something ought to be, how it can be, or has been imagined to work (best) (Fig. 1). We argue that the affordance and intentionality of the former drawings could re-frame the way a method like the journey map could be considered and used.
- 3) Taken all together, we go beyond accounting our worldview to posit the need for pluriversal (rather than universal) and heterogeneous ontology of design as a significant paradigm shift in service design to accompany the transitions it is making from the previous focus of the materiality of objects and touchpoints to intangible experiences and infrastructures. We believe this can help to acknowledge that we are living in a continually emergent world, constituted by changing configurations of various things, including the positions and relationships of people in and to the various systems and infrastructures that make up the field of service design and its realm of practice.

## Journey Maps: rethinking positionality and relationality

*Author S: My co-facilitator and I proposed a workshop at a design conference, to learn from one another and from participants’ experiences and ideas. We brought the usual materials – pens, sticky notes, big sheets of paper – to help us in this task. The space and people were new to me, and our focus was on ideas I was still working through. I was nervous. We’d planned a series of nested exercises, moving participants from individual questions to mapped networks of ideas and practices, and a final, if still provisional, outcome. As we got underway, I quickly began to see that how people oriented to their own questions, practices, and expectations didn’t always align with what we, as workshop designers, had planned or anticipated. Our explicit aim had been to bring differently situated practitioners and researchers together, but what we discovered in real time was that even anticipating difference does not account for how it emerges in practice. Some people came late and others had to leave early. We hadn’t anticipated the impact of what registered as disruptions and severed conversations, as lost points of connection. I stood alternately at the front of the room and close by people working at tables, and watched the participants’ knitted brows as they engaged with the workshop activities. They seemed focused and willing, but also were clearly trying to sort out what we were asking them to do. I wanted to make it work better, to make sense, and I wanted us to be able to talk about what we’d (all?) come to talk about – to be useful. My co-facilitator and I exchanged glances, questions, and ideas as we worked to make sense along with them, reorienting people’s engagements back to the workshop aims, and our own efforts toward keeping meaningful conversation going so that we might emerge with outcomes we had planned in hand, or at least in progress...*



We start here with the aims and emergent dislocations of a design workshop to acknowledge that, first, how people are positioned in design processes and designed systems matters. From this facilitator's perspective, we can see that people's positions, needs and assumptions about their own and others' participation are simultaneously anticipated and impossible to anticipate. This impacts both how and what is designed, despite or because of intentions and capacities to anticipate or prepare. That people would bring a range of interests, investments, and imagined outcomes was never in question. How these would shape interpersonal dynamics, the use and capacity of time and materials, and activate the positions of various actors in the space was emergent and highly relational. In other words, this workshop, like most co-designing with people, had multiple and unpredictable levels of nuance to be navigated and negotiated by all those present, together and separately.

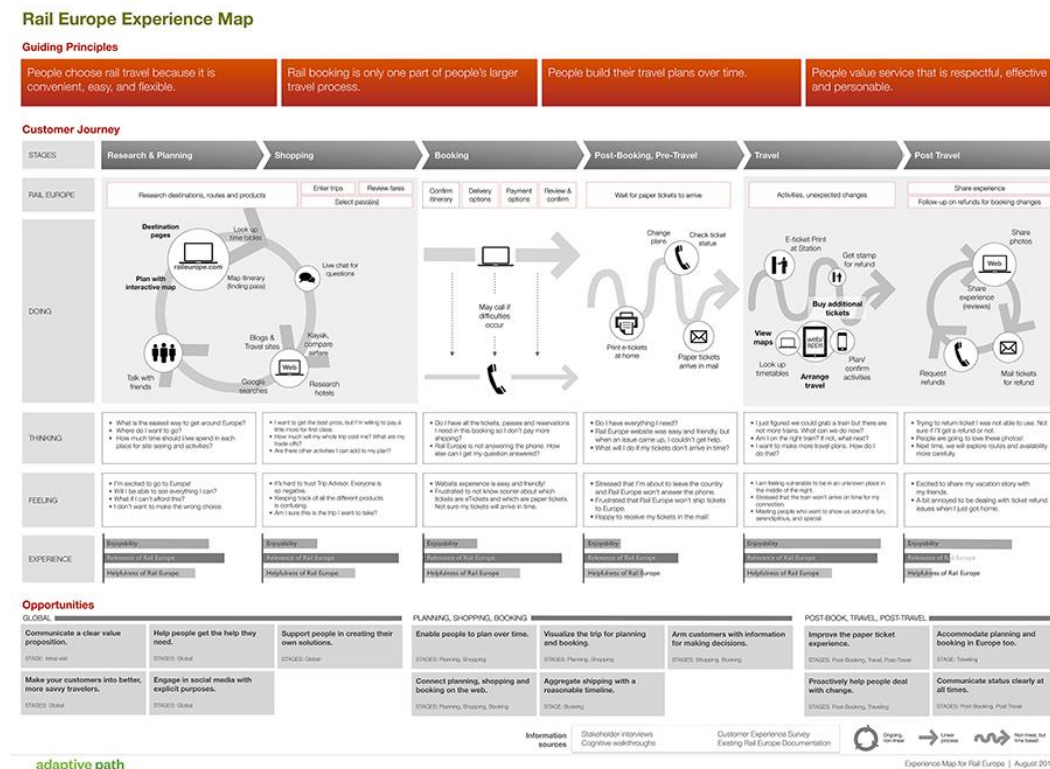


Figure 1. A journey map from Polaine, Løvlie and Reason (2013)

In contrast, current methods like personas, journey maps and blueprints can artificially pin down the experiences of various human and non-human actors in service systems for the purpose of understanding people and what they might do or ought to. This is evident in the example journey map (Fig. 1). The problem of fixing these too readily has been critiqued by scholars and practitioners in service design (see Akama & Prendiville, 2013; Blomberg & Darrah, 2014). As evidenced by widely used 'how to' books by Stickdorn & Schneider (2011) and Polaine, Løvlie and Reason (2013), we observe that personas tend to rely, even at their best, on amalgams of a 'majority' – real or imagined – made by designers or some, but rarely all, of the people implicated in a service. The journey map is often used as a means for mapping and reading into the behavior of an existing or imagined actor in a service system, in order to either diagnose problems or predict use. The blueprint, like the architectural document for which it is named, is a literacy-specific totality – seeking to map an entire service system, but often in a way only some can fully understand. These tools, as they are often used, rely upon producing abstractions of a sometimes limited range of experiences as a means for generalizing ideas around which a service might be designed. In other words, the tools themselves are meant to produce concrete (enough) answers to questions typically framed by designers or clients, to move the design towards 'improvement'. In this way, these methods capture 'insights' to be fashioned into proxies for people in service design

processes. The people imagined in relation to proposed services or in analyses of existing services can only be as complete or real as the comprehension and representation allowed back into the service process. As such, accounting for people – who, indeed, is imagined and how – strike us as the most important questions and means of producing knowledge in the ongoing development of service design practice.

Designers are often imagined, explicitly or not, as owners of agency and action in a design engagement; their work both defines and guides the participation of others, usually toward known or anticipated goals (even if also aimed at discovering unknowns along the way). But the vignette above starts to skew this perception to reveal ‘what shapes the social practices in which such experiences are embedded or to their politics’ (Kimbell & Blomberg, 2017, p. 85). In order to illustrate this further, we give another account by a participant (Author Y) to uncover how participants engaged in designed activities are situated as actors in their own right in defining or reimagining possible outcomes, through relation to both facilitators and to other participants. Y’s vignette below accounts the specificity of how she came to find herself at, and oriented to, a designed space or interaction. In this sharing we explore the implications of squaring our attention on both this specificity and the emergent experiences and ideas of an actor through their participation.

*Author Y: I participated in this workshop because I know the facilitators, and I wanted to support their work, and the theme suggested to be co-explored was intriguing. Quick introductions by the other attendees revealed a mix of diverse experiences and backgrounds, some who I knew already, and this promised to make an exciting exploration. Soon into our small group discussion that covered rich and vast grounds, I realised that our conversations were sliding all over the place. Maybe our group drifted away from the main focus, or the style of facilitation was to keep it free-flowing and accommodating. My group was getting confused, and I sensed that other participants were also becoming thrown. I didn’t want to interfere with the facilitators’ desire for openness and inclusivity to see what might emerge, but I also felt their nervousness, so I tried to rein the group back on topic again, but by then, I had lost why and what we were attempting to do.*

As Y reveals, this group of participants was not a neutral clustering of strangers, and extending this observation, it is likely that others, too, had motivations, expectations, characteristics and pre-existing relationships that conditioned their participation. As the group moved forward, those who had begun to invest in the process – those who planned it, and those who followed or helped to guide and remake it – also began working together. This kind of engagement, then, balances on a knife edge between resisting the fear of getting nowhere and being content with, even open to, arriving somewhere different than expected. Here, the dynamic of the group seemed responsive to the dynamic of the facilitators, who in turn were also responding to the group.

Attending to these nuanced ways of being situated, as participants, designers, and facilitators, allows for more complex positions and possibilities to emerge, where, for instance, as both Y and S describe, there is a shared sense of confusion, hopefulness, interest, or frustration. This becomes, in turn, a site for building shared (or divergent) process. As Y observes, the feelings of ‘drifting’, being ‘thrown’ and ‘lost’, means there is an unmooring or disruption to certainty. Rather than mitigating this as a problem, such disruptions are productively harnessed in PD as ‘agonistic pluralism’ (Björgvinsson et. al, 2010) as a way to reveal phenomena, agendas and politics hidden from view. Instead of attempting to synchronize the articulation of issues, some scholars in PD have embraced conflict, contradictions and the contingent as the premise of group dynamics. ‘Being thrown out of one’s certainty and comfort is to also to discontinue, abandon and reorient one’s approach and to change tack’ (Akama et al., 2015, p. 142) so that we might let go of our own perspectives in order to see others’, or to reimagine or intervene on the way forward. We see this in action in the next vignette.

## Fixing, freezing, and being in motion – making sense with the unknown

Author S: *I was sensing among participants a difficulty in materializing or embodying what was taking place. I wondered where we would find ourselves and how we would see each other if we moved off the page and into the room. In a flash of mixed desperation and excitement – a familiar emotional state for a facilitator – I remembered an activity I'd learned recently, and with just fifteen minutes left, interrupted the process underway and asked if the group would be open to trying it out. The activity I proposed was entirely about motion, making tentative bonds of relationship that shift according to individuals' positions and decisions and to the group's form and environment. I asked everyone to walk around the room, avoiding objects and other people, at a range of paces, according to numbers that I called out – 1 being slow to 10 being a run. As people got used to this movement, I introduced a new rule: choose two people without telling them, and continue moving about the room at a medium pace while now also trying to keep yourself in an equilateral triangle with the people you've chosen.*

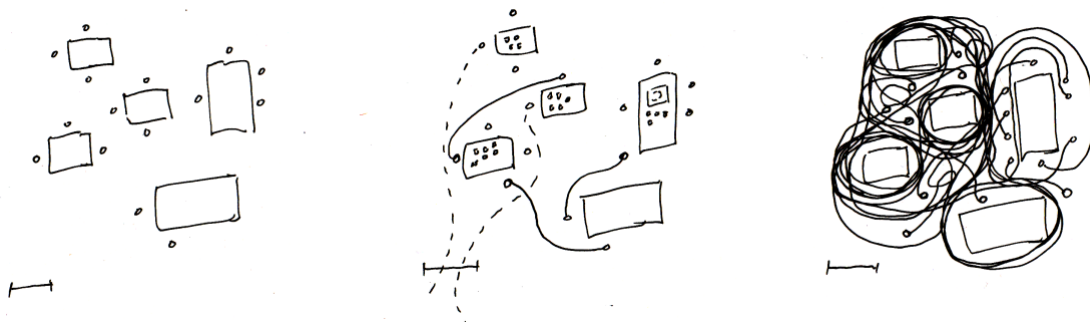


Figure 2. A sketch notation of physical movements in the workshop, as people left mid-way, groups reconfigured in adjustment, and, finally, during the impromptu exercise

Author Y: *The task sounds simple enough when we're sitting and receiving the instructions. In order to move away from a sense of going nowhere towards doing something, we all eagerly start walking. As soon as we meander among the tables and chairs, I have become part of an uncontrolled larger mass of bodies, constantly moving at different speeds, negotiating pace, proximity and visibility. My whole attention is taken by the focus I give to the two people I have locked on to, though they don't know it, and it's impossible to keep in view what others are doing. I am pulled and shunted by the uneven pace of the two bodies, shifting angles when they do, and I find myself trying not to bump into other people and the desks. It feels chaotic even when we are all following and conforming to a simple instruction. Its only when we are asked to stop that I can make sense of everyone's position.*

The two vignettes, from facilitator S and participant Y, describe many movements. We see a shift in direction by the facilitator in response to the time limit and their hopes, but mainly by considering the participants' confusion, and thus, a move toward an altered way of engagement and thinking. The new exercise provides a learning opportunity about being in and out of position. It also helps us see that it is about being in relation to others and being in motion in a way that makes maintaining position difficult, or in the throes of process that is always contested by the space, by others, etc. As described by Y, there are multiple bodies in motion that determines Y's intention to simply be in equidistance to the other two people. She feels being 'pulled and shunted by the uneven pace', of trying to both stay connected and be aware of obstacles and the unfamiliar space. Her individual agency and intention is compromised constantly in the evolving circumstance and it reveals this is not in anyone's control – not hers, not the facilitators', and not the two people whom she is following. These stories together reveal the ways in which what we can know, and what we can build (on), is dependent on how that knowledge is made in relation to others, to emergent needs and shared aims, and in the practice of our movements together (Agid, 2016a; Gordon, 2004; Suchman, 2002).

These vignettes are also moments of frozen motion that enable us to look at positions in relation in detail (Fig. 2). Indeed, this is also the case for Y, who can only 'make sense' when

she is ‘asked to stop’. Like a game of freeze-tag, stopping in place is only fleeting before we can run around again. In other words, these frozen moments are hypothetical or imagined states that helps us to understand where we are positioned proximally or remotely to others, that can help ‘make strange’ a phenomenon that might be fleeting (Bell et. al., 2005).

This brings us to the core critique of our paper. To confuse this momentary freezing with what we’ve described above as ‘fixing’ is highly problematic to us because it highlights deliberate omission when there is a strategic focus to streamline and manage (or put in more menacing way, ‘control’) the ways people might *join>move>pay>use>leave* or such stages in a seamless flow, as implied by diagrams like figure 1. We know as people interacting daily with service providers, that our motives, behaviours and experiences are never this clear, logical or seamless. We also know that as practitioners with experience creating the journey map that the whiteboard or the workshop wall is covered with an explosion of ‘insight’ sticky notes, yet the method requires us to wrangle order through deletion, generalization and looking for common patterns to synthesize and present something that resembles figure 1. What is deleted, ignored or omitted from synthesis is often the random, illogical, unpredictable idiosyncrasies that arguably make us human. These are the kinds of inconsistencies that feature in our vignettes. Any intervention and decision-making in designing is an ethical and political act, yet not enough attention is placed upon what is *left out* as well as what is *left in* a journey map, and as significant, the processes finally proposed through such tools.

How can such methods can be reimagined, added to, or problematized? Instead of drawing inspirations from systems engineering and architectural blueprints with lines already laden with precision and prediction, what if we looked to notations in music, dance and performance (Fig. 3)? Could we practice *with* these vicissitudes and interruptions, and with the necessarily contradictory and conflicted orientation many have to the services, institutions, and infrastructures with which they engage – as workers, customers, or recipients, whether by choice or not? Could a different articulation be attentive to possibilities, and discomforts, of ‘being pulled and shunted’ or ‘shifting angles’ with others in a design process?

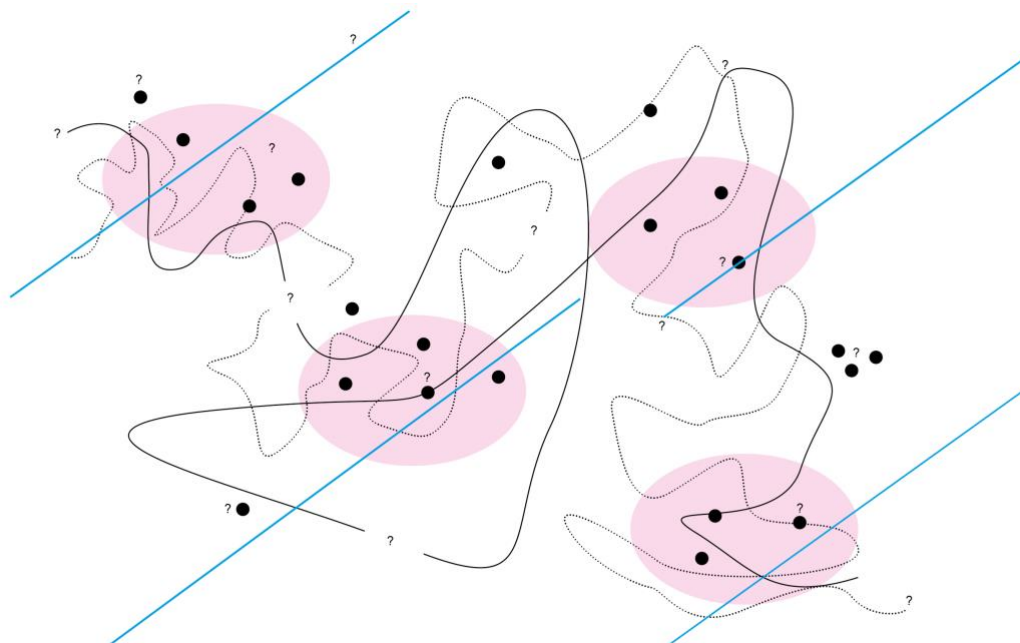


Figure 3. A metaphoric notation, inspired by John Cage’s *Fontana Mix* (1958)

The proposition of this approach, we imagine, is an argument for producing these movements and their notations in conversation with people deeply implicated in and affected by an existing or proposed service ecology (Agid, 2016b). Each of these graphical elements – lines, dots, circles, etc. are open-ended questions for co-exploration. They can

become placeholders to freeze dimensions that may or may not matter – moments of clarity or confusion, being on or off track, getting lost or finding a new direction. This approach attends to the shifting production of knowledge and meaning among participants that might confound or rearrange what we think we were doing in a given process. This is not a journey map as we know it, but it is another kind of mapping that could be created processually, to call attention to how we orient to things like listening and sensing, and how we choose to work with, or cast out, answers and experiences that are unexpected or that fundamentally challenge questions or goals with which we begin. If we engage in the work of understanding how people that are differently situated might experience, desire, or dread engaging with a service system, we can begin to treat these maps as placeholders or catalysts with known limits. They do not suggest representing the ‘real’ or the ‘whole system’ but can be used in context and in action to reveal or produce meaning.

In this way we can ask questions of our tools and ourselves as we use them. We are free to transparently frame another purpose for use in context. These tools and our use of them could become a means for talking about experiences, opening up nuanced and shifting understandings of stories / meanings / needs / desires / values that will, in turn, be raised by and negotiated in a designed system. It might reveal people about whom assumptions are being made, or to whom no outreach has been made, such as the housekeeping staff of a hotel, discussed earlier, or as with *Airbnb*, those implicated in the disappearance of even more affordable housing. We might even go as far as saying that our ethics of using such tools is to reveal conflict, serendipity, cultural assumptions, missed connections, or false promises, rather than hide or disguise them under more desirable experiences. Knowing and using our tools (and their limits) this way requires both an openness to irresolvability and mess and to new meanings – even ‘undesignable’ ones – being revealed as critically important in the process. This, we contend, means taking seriously the real potentials and complexities of putting people at the centre of service design.

## Conclusion

The emergent is clearly a primary material and condition of service design. Services and the people who use them, work in them, and oversee them are all inherently inconstant. This acknowledgement has yet to have significant impact in service design, due to the legacy, mindsets and dominance of a certain worldview, as discussed in the introduction. Such dominant tendencies can *fix* what cannot be predicted by creating models of what is deemed most imaginable, likely, desired (often by a service provider or company), or pragmatic (Dorst, 2015). We argue that shifting from materiality of objects to focus on immaterial experiences and infrastructures requires a fundamental shift in this worldview. We have been reminded through embodied experiences of being a workshop designer, facilitator and participant, that relational encounters are more nuanced and continually changing than is planned or often allowed for in service design discourse. We suggest that turning our attention to the mess of emergent, unfixed knowledge, experience, and positions might allow for an approach to service design that makes more room for people and our relationships to human and non-human actors (Seravalli & Eriksen, 2017). Scholars, most notably in participatory design, have already argued the need for designers working with people to become aware of and understand our positions in relationship to a ‘rich, densely structured landscape of identities and working relations’, inclusive of the ‘subtle and profound differences that actually do divide us’ (Suchman, 2002, p. 92). This is of most use when designers, as Light and Akama (2012) suggest, make space for the inevitable upset plans, rerouted exercises, and reimagined outcomes. Working *with* disruption and collective reimagining emerges as a means for building collaborative capacity (Agid, 2016a).

This continuous re-configuration – the *dance of designing* – means that the attention to our own and others’ space, orientations, capacities, and specificities and their meaningful differences and confluences, point to the usefulness of temporarily freezing motion-in-

action. Acknowledging such moments for analysis, reflection, and building mutual knowledge as a provisional means of creating understanding is to accept that this is always partial. As our experience of the co-design workshop has shown, this orientation to temporality and emergence allows for the meaning made through misunderstandings, newly discovered needs, or restricted opportunities, as they are experienced and shared back by people in service structures, or participating in the process of service design itself. As an epistemological approach to service design, this resists the fixed story preferred by an example like a journey map that relies upon constructing an artifice for the whole of possible experiences, touchpoints, and service flows, by making new, divergent, even oppositional ways of engaging with a system neither visible or actionable. In other words, we are not proposing a new ‘journey map 2.0’ or another critique of method-centricity in (service) design. Instead, we locate our questions at a higher order to ask what the use of such methods conceals, assumes and reveals about our worldviews, and to explore what designing could do beyond disciplinary tendencies and expectations for *fixing*.

We argue the *proof of concept* of such methods, their use and inculcated assumptions – what they make knowable, and how we imagine that to matter for designing – must be revised to premise emergence and the unknown of the social, cultural, political as the material and condition of service design. As a community of practice and research, we need to explore ways to tell stories that may or may not conform to what a designer or client imagines, and may or may not seem to present ‘designable’ opportunities. This means shifting our approach that makes central the conditions of possibility and particularities of experience, and arguing for the value to design and the design of services of these ‘undesignable’ complex engagements and sites of difference. In the spirit of continued inquiry, we propose that more accounts of and deep engagements with how people, systems, objects and all this complex social messiness figure into services are necessary to invite debate and propositions as service design comes of age.

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# Facilitating in service design using desktop walkthroughs

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## Abstract

This paper uses a combination of empirical sources to discuss the use of desktop walkthroughs. Desktop walkthrough is a design tool that uses a collaboratively built miniature environment that allows participants to interact with abstract concepts such as service processes and flows. Facilitation of desktop walkthroughs in literature focus on utilitarian goals, while a closer examination finds that it is used for a multitude of purposes. This paper captures experiences from using desktop walkthroughs from the perspectives of a design student, a design researcher, in-house designers and service design consultants. The examples of using desktop walkthroughs shows that purposes include: marketing oneself as consultant, educating participants, selling design as a method (prototyping more specifically), and pushing participants to leave their comfort zone and generate more innovative ideas. Finally, we go through aspects to consider in relation to the facilitator role and what motivates the use of desktop walkthroughs.

**KEYWORDS:** desktop walkthrough, facilitation, tools, co-design

## Introduction

Design is moving the boundaries and expanding the domain within which it operates. Buchanan has illustrated this progression (Buchanan, 2001) and service design is part of this movement where new materials and domains are being explored by designers. There has been recent academic interest in understanding service as a design material specifically (Blomkvist, Clatworthy, & Holmlid, Ways of Seeing the Design Material of Service, 2016; Secomandi & Snelders, 2011). With new territories for design comes new (opportunities and) challenges – and with that new tools that help designers deal with new situations. These tools can be the result of research or they can come from design practice. When techniques and tools are generated in practice and reach some level of familiarity within a field it is reasonable to assume that there is some value to it, since it has been used to deal with challenges and preconditions in the field. Desktop walkthrough (DW) is such a technique. It has been mentioned, often briefly and without substantial knowledge about how it has been used or for what purposes, by various design consultancies (see e.g. Engine (n.d.)).

In terms of service design there is a need to be able to traverse between the actual physical world and representations that capture some aspects of the current or future service context. The service blueprinting technique for instance, was introduced through research initiatives (Bitner, Ostrom, & Morgan, 2008; Shostack, 1982) and a result of conceptualising service from a theatre metaphor (e.g. onstage, backstage). The blueprinting technique has arguably had more impact also in the academic community than in the applied.

When a tool is spread from design practice however, there is often less available knowledge about the motivations, underlying considerations and value than when a tool is suggested in academia. We assume that there is a value in using DW as a service design tool to facilitate collaborative design activities, but that we still need to make this knowledge explicit.

This includes knowledge about purposes for using DW and what to expect from facilitating design activities around it. This is the gap that this paper addresses by looking at several different sources. Specifically, we want to understand its role as a co-design tool from the perspective of facilitation. We do so by examining different roles as facilitators – the design student, the researcher, the in-house service designer and the consultant. We have both direct and indirect examples that help shed light on this issue.

## Theory

Service design is often understood as an inclusive activity where different stakeholders are brought together to co-design future services. In doing so, both the ways people are included and the reason for doing so becomes interesting to study. Many times, one-off tools, customised for specific ends are used in co-design sessions, many of which are understood as design games (Brandt, 2006; Eriksen, Brandt, Mattelmäki, & Vaajakallio, 2014). Blomkvist, Fjuk & Sayapina (2016), characterized DW as a design game and showed how the tool was used by a business team to prototype a customer journey based on a specific event in the life of a customer. Except for that instance, very little has been written about DW academically.

With increased stakeholder involvement and engagement comes new roles for designers.

Being in charge of co-design, managing people's expectations, producing meaningful outcomes and so on then becomes part of the required skillset of service designers.

Considering the importance of this new design skill, often termed facilitating, remarkably little is written about it. In this section, we discuss both facilitation in service design and DW as a tool. For a more in-depth look at the connection between what is built during a DW and the participants, including how the material aspects influence outcomes of DW sessions, we refer to a previous study (Blomkvist, Fjuk, & Sayapina, 2016).

### Facilitation in service design

Facilitation is becoming a core skill for designers in new design fields. Due to the nature of Service Design, focusing on stakeholder and user involvement in the design process (Polaine, Lovlie, & Reason, 2013; Stickdorn & Schneider, 2011), there is an emerging importance of a designer today having capabilities of facilitating design activities (Napier & Wada, 2015; Body, Terrey & Tergas, 2010).

The emerging facilitator role originates in need and desire to utilize tacit knowledge, creative power, and to grapple possibilities, viability and desirability from group conversations with a broad variety of stakeholders such as end-users, frontline staff and managers (Body, Terrey & Tergas, 2010; Han, 2010). Facilitating design activities involves guiding participants in collaboratively communicating on a shared platform – to extract and move the tacit knowledge and perspectives of the multiple stakeholders to explicit (Body, Terrey & Tergas 2010; Han, 2010; Wetter-Edman, 2011). Creation of knowledge in this manner is referred to as knowledge externalization (Dubberly & Evenson, 2011). Facilitating externalization of knowledge is done in order to support focus on picturing a future state that is, from multiple stakeholders' view, superior to the existing (Body, Terrey & Tergas, 2010).

Body, Terrey & Tergas (2010), based on their practical experience, have suggested that a desirable mindset for a facilitator involves being curious and inquisitive. Napier & Wada

(2015) similarly has argued that a design facilitation mindset involves being empathic, objective and process-oriented. To summarise, existent literature on design facilitation conceptualizes the goal as the construction of knowledge via group activities supported by a shared work space. There is also suggestions for how to relate to the activity and what mindset to adopt. In this research we focus on the purposes and expected outcomes of facilitation.

## Desktop walkthrough

As very little research has been done on desktop walkthrough, a definition is far from unified. Application can take place using a variety of different tools, equipment and artefacts. The idea of a desktop walkthrough can be understood as to visualize, externalize and prototype potential service scenarios by creating, manipulating and emphasising temporal and physical movement by playing through scenarios in miniature service settings, often using LEGO® building blocks and figures. What seems to be a common denominator when using DW is the scenario, not in the sense of a design scenario but rather a backdrop, task or goal for the exercise. Examples includes “create representations of what you want this service to look like x amount of years into the future” or “something has happened to a customer and it now needs help”. Based on e.g. a description like that, the participants are invited to start building and using the desktop representation for some purpose.

The reason for DW's popularity and origin in service design related fields is perhaps related to its ability to capture some intangible, temporal, and dynamic aspects of service (Blomkvist & Segelström, 2014). An external representation of what a service situation might look like can be built and explored collaboratively using simple materials that most people can feel comfortable using. The knowledge generated by a DW is as much (and probably more) tied to the participants that use the tool, as to the tool itself.

Unlike many other design tools, the primary user is not a designer but rather a design novice – perhaps using the technique for the first time. This means that it is probably good to be reasonably sceptic about what people can accomplish with the tool – assuming one can get better at using it by practicing. We do not expect people to be expert sketchers the first time they sketch. Since the primary user is not a designer, then perhaps DW can be understood as a facilitation tool rather than a design tool. While we can often clearly define a good outcome for a design tool, it is less obvious for a facilitation tool. We acknowledge that desktop walkthrough can be used as an internal tool within a design team for instance, but in this case, we are looking at desktop walkthrough as a facilitation tool in co-design settings. We are also aware of the many connotations of co-design, but here we refer a situation where one or more groups of, mainly or exclusively, non-designers are gathered to conduct a design activity – facilitated by one or more designers. Even more specifically, we are looking at situations where the design activity involves a desktop walkthrough. However, since designers can bring together people to co-design for very different purposes, the purpose of using desktop walkthrough also varies.

## Examples of use

This section contains empirical examples where the authors have first-hand experience from either facilitating or observing DW sessions. We also include descriptions made by design consultants from a Swedish service design company during interviews conducted by one of the authors. These interviews provide an alternative view and collectively these examples provide insights from the perspectives of a design student, a UX team (through observation), a design researcher, and three design consultants. The student perspective example was the only case where the participants worked with a representation of the actual physical place they were redesigning. In all other cases, the participants built environments and spaces that were based loosely, or not at all, on actual locations.

## The student perspective

The design student's facilitating activity was part of a learning process as part of academic studies, and had the purpose of generating requirements for the most beneficial waiting room environment based on compromises between participants' takes of various personas. The activity was part of a collaboration with the Swedish Migration Agency. Two groups of administrative officials conducted walkthroughs. Each participant enacted the role of a given persona and used this knowledge to find value in creation and manipulation of a physical representation of the waiting room environment built in LEGO. A persona could, for instance, represent a child running in circles and making a lot of noise. Another persona could represent an old man who hates the mere presence of children, to create tension.

## Design researcher perspective

This DW was part of an innovation project involving representatives from various departments at a large telco company in the Nordic countries. The project was an early "innovation phase" for a scenario based on an event in a customer's life. The innovation phase consisted of a series of workshops with around 20-25 participants. The DW was conducted on day 7 of the innovation phase and 3 groups of ~4 participants were tasked with building the current "wow-experience" for different personas. The participants were urged to explore different perspectives and they were given cards with contextual cues (such as "the customer cannot connect to the Internet" or "the customer wants the next model of phone"). The cues were supposed to push the participants to consider a wide variety of scenarios. The DW was planned together with the user experience team.

## In-house perspective

This DW happened the day after the previously mentioned design researcher example. These walkthroughs were conducted at the same telco company in the Nordic countries and facilitated by a user experience team. Two service designers in the user experience team planned and facilitated the activities with the purpose of pushing the participants. One of the researchers was conducting participatory observations and providing insights based on previous DW activities. The service designers felt that the generated ideas so far were too limited and not sufficiently innovative. As introduction to the DW, the service designers showed a slideshow with futuristic concepts and asked the participants to build their future vision for the service.

## Interviews with consultants

Three design practitioners were separately interviewed in sessions lasting between 45 and 60 minutes. Two of the designers had acquired knowledge of desktop walkthrough from studies at Linköping University, whereas the last had been introduced to the tool through LEGO® Serious Play. All three design practitioners had at some point been employees of the same design consultancy. The interviews primarily focused on investigating the designers' experiences in planning, facilitating and utilizing knowledge from DW. In this paper, we focus on what they said about facilitation.

## Insights from the examples

After considering the different sources some themes emerged related to facilitation of DW, the purposes for using DW as well as more general insights into motivations for design facilitation. The results are divided into the following categories: group facilitation, goal of the activity, creating the preconditions for DW, motivating the activity, and facilitation skills.

## Group facilitation

One general insight from the examples is that facilitation in the literature seems to focus on a designer, while most examples we have encountered involve a team of collaborating facilitators. Some are more active in planning and creating the preconditions for the activity, some are more involved with the participants and others still are documenting and analyzing the progression to a larger extent. Seeing facilitation as a group activity means that also the facilitation part becomes a social and coordinated activity.

## Goal of the activity

Several goals could be identified in the different cases. Notably, the goals were not always to produce knowledge or design services, what we refer to here as **utilitarian** goals, but often much more related to psychological, relational or economic interests. In the design researcher example, the stated goal was utilitarian – to build a version of the current best scenario (the “wow-experience”), but both the researcher and the user experience team members felt that the participants did not challenge themselves enough and that the results were not useful from the utilitarian perspective. The next day, the service designers from the user experience team tried to push the participants to think more creatively and to be less focused on the current situation. This was an explicit goal in the facilitator group and the participants were not even asked to build a service, but rather a representation of their vision of the future. Hence, there were no utilitarian goals (as we have defined them here) but DW was used as a tool to change the mind-set of the participants.

When it comes to the consultants, the reasons for using a DW becomes even more diverse. The interviews include examples where the goal of facilitation has been to sell consultancy services. The DW is then used to illustrate what it would be like to work together with the consultants. We call this purpose **marketing**. Marketing is closely associated with the goal of **showing off** design and **educating** participants. A fourth example that can be found in the interviews is what we think of as more a utilitarian purpose: **prototyping**.

When the goal is to show off design, DW is used to meet the expectations from the participants on what it should be like to work with design. In both showing off and educating there is a value in having utilitarian goals also, in the sense that the participants should feel like they have accomplished something and that they have generated something valuable. This is also an aspect noted by consultants, that the goal may not always be utilitarian, but that the participants understand and feel satisfied with the activity. In several of the examples however, the participants have expressed satisfaction with what they have generated during a DW while the facilitators have not shared this view.

The idea behind using DW for educational purposes is that the participants should understand aspects of design work. The outcomes of such DWs are not as important as what the participants can learn about a design mind-set and see the DW as an example of what can be done in a design project. According to the consultants’ view on educating design thinking, desktop walkthrough allows for an easy way of presenting how minor changes in a scenario playthrough can affect the outcome. It could be done by playing through a scenario and replaying the same scenario adding a “what if”-premise to the context. E.g. adding a premise of “what if there was no electricity?” and playing through a scenario again.

When it comes to DW as a prototyping tool, the goals are related to the design or creation of new service elements or journeys. In prototyping, DW allows for fairly quick and easy testing of roughly defined concepts. It is an easy way of validating early ideas. Prototyping with a DW can also be used less as a way of generating, and more as a way to explore or innovate.

## Creating preconditions for DW

A scenario is one of few required elements of a DW. As facilitators, much of the work before the activity revolves around the scenario, and the material produced to support the scenario and make it meaningful. In the design student case, the personas with conflicting interests really helped one group engage in the activity and imagine interesting challenges in designing a waiting room. The other group however did not understand what to do with the

personas (despite having been instructed in a similar way as the other group). In the telco examples a lot of effort was put into creating material to push or trigger participants, but the material ended up being completely overlooked or examined only briefly. In the researcher facilitated workshop the groups were given a template to write down their insights on. However, these were not used and by the end of the DW one of the service designers had to go around and prompt the participants to fill out the templates.

Another aspect to consider here is the value of the scenario that is given to the participants. The scenario is the spark for the DW, the entrance point for the group to get started. In the student example the scenario was simply to design an ideal waiting room experience. This task was tied to one location and the participants were not encouraged to explore specific journeys or **temporal aspects** (thus deemphasising the walkthrough element). In the researcher example the groups were first expected to build a journey based on a service blueprint. The next day they were asked to build their vision of the service in the future. In these examples, which the authors have first-hand information from, the temporal aspect was included in the instructions to varying degree. In these cases, the scenario was also kept static throughout the activities. In the consultancy examples however, a more active facilitation role has been adopted. For instance, in one case that is described the initial scenario was an accident and what would happen if it occurred in one location. Then, the next scenario describes the same thing happening but in another location to add variation and start thinking about the importance of location and context (in this example the goal was to understand the value of prototyping). The participants of this exercise were also to undertake a role in the DW. To create empathy between the different actors attending, you were to enact a role different to your regular. For instance, a firefighter were not to play a firefighter in the walkthrough.

## Motivating the activity

When considering DW as a design tool for co-design there are some aspects to consider from the examples examined in this paper. DW has some playful connotations that can have diverse impact on people. In the student project the participants seemed positively affected by the use of LEGO. One participant enthusiastically exclaimed “LEGO! Are you from Google or something?”. This was a DW conducted at a governmental agency and the participants probably did not have much experience from similar activities.

Another example comes from the interviews. One consultant had prepared to use LEGO for a DW but the participants refused, claiming that it was not part of their work to play games – causing the workshop to be reframed completely. The in-house consultants also encountered a situation where DW was not used by one of the groups. They simply decided to write down their vision of the future on a piece of paper instead. However, it was less clear why. They said during the group’s presentation that “we did not need to use the LEGO”. Another identified effect when using DW is that participants will sometimes use the desktop representation to explain or communicate their ideas, rather than actively try out their ideas and thoughts. The difference might seem trivial but there is a big difference between building to learn and building to express yourself, and arguably one of the main values of DW is the ability to iterate on ideas. However, as we have seen, if the participants feel like they are satisfied with the result and the activity that might be enough.

## Facilitation skills

Since the student, researcher and in-house approaches to facilitation during DWs were very hands off, this section discusses insights from the interviews with consultants. What differentiates a good facilitator is their ability to adapt to the current contextual circumstances. This means everything ranging from actively planning expenditure of time to making the most of personality attributes and abilities of participants. A good facilitator can make the most out of the situation regardless of who attends the workshop – thus, there are no attendee that should beforehand be considered as better than another. However, some participants will be slower and some will be quicker to adapt to a playful workshop setting.

Becoming a good facilitator takes practice, and exposure to new workshop settings and participant constellations is the key.

## Discussion

This research has illustrated different purposes for using DW such as outcome-focused uses such as prototyping, but also highlighting non-utilitarian aspects such as marketing, showing off design, and educating participants. Design facilitation is described in literature as a more utilitarian activity where knowledge generation and design production is central (Napier & Wada, 2015; Body, Terrey & Tergas, 2010). When DW has been used for utilitarian purposes the outcome has often been disappointing. This can be related to: expectations held by facilitators in the examples respectively, a lack of skill with the facilitators, a dissonance between what can be communicated from a DW session and the actual experience of taking part in it, or it can be related to the fact that participants often are novice users of the tool and thus lack the skill to realise its full potential.

### The facilitator role

As a design consultant, there is always a web of forces to consider when conducting co-creation sessions. One aspect that dictates a lot of choices is the monetary – the client has paid for a number of hours and it is up to the designer(s) to find the best use of that time. This makes DW a difficult choice since the outcome can be difficult to predict. At the same time, it can be a great tool for e.g. marketing purposes as it embodies a lot of qualities, like playfulness and creativity, that are associated with design. Thus, having people come in and “play” a scenario is a way to meet their expectations, show them a good time and motivate them by illustrating the value that the exercise can have. This highlights another aspect of the result: that consultants sometime must prioritize satisfying the participants over producing valuable outcomes.

The process of facilitating desktop walkthroughs includes preparation, and what this entails varies with the purpose of the activity. The interviews with consultants, perhaps counter-intuitively, indicate that less preparation is required for utilitarian purposes. The argument behind this is that when the goal is more specific, e.g. to educate, also the planning becomes more meticulous to achieve this goal. Hence, there are many ways in which DW can help create valuable input (utilitarian) for a design process, but when the goal is non-utilitarian the DW must be specifically targeted to do a specific thing. Exactly what preparations are needed for the various purposes still needs more research.

If the goal is utilitarian, e.g. to create new ideas or knowledge, the tool should include some aspect of actually walking through an idea chronologically (not necessarily from start to finish or even forwards though). Adding the temporal aspect means that ideas can be contextualised and subjected to questions about how different elements relate to each other in time (not only space). This aspect is sometimes overlooked leading to a static representation with limited utilitarian value. As a facilitator then, it becomes important to create conditions- and actively push participants, to create short sequences or stories that explore temporal aspects of the service they are working on. Much like in the consultancy example where the location of an accident was changed after a short time.

It was noted by the user experience team posterior to the DWs at the telco company that participants related differently to each other, in a positive sense. The group dynamics were experienced as different and participants showed tendencies of being relieved of their professional roles. It is plausible that the playful connotation of using LEGO influenced the way that participants in the project related to each other.

Uncertainty among participants and fear of doing something wrong is a natural effect of taking part in any activity outside one's comfort zone. A very important part of facilitating is to prime the participants into understanding their role in the activity. This was the problem with the second group of participants in the design student example. They were not sure what to do and abandoned the exercise completely. The design consultants emphasized that

such failures are not the fault of the participants, but rather the fault of the facilitator(s). As a facilitator you must be able to adapt to new situations, something that becomes easier with more experience.

Preparing facilitation of desktop walkthroughs always includes communicating a satisfying explanation to stakeholders and participants of why DW is the tool of choice. In framing the DW exercise for participants, the use of LEGO may in some settings demand from the facilitator to emphasise its value due to the playful connotations. LEGO can also be an asset, as in the student example. Additionally, the modularity and high brand awareness are two components promoting the values of LEGO. Some participants may find it easier to focus on the conceptual design task rather than themselves, having a LEGO avatar to relate to. LEGO-avatars give some participants an easier time to “roleplay”, rather than “being themselves” implying some personal responsibility. Other than participants personally relating to avatars, using LEGO has previously been proven to mediate the construction of scenarios for the walkthrough where iconicity of LEGO-pieces (such as a tree in LEGO implying activity in a park) have guided the following outcome (Blomkvist, Fjuk & Sayapina, 2016). As a facilitator, the framing of the exercise is crucial for how it is received by participants and for some occasions it might be better to avoid LEGO all together. The playfulness can then be more easily downplayed.

### Motivating the activity

Both the user experience team members and the interviewed design practitioners considered DW as a tool for education, marketing and sales rather than as prototyping and utilitarian goals. The design student’s experiences of facilitating desktop walkthroughs is part of a learning process. This has shed light on the possibility of desktop walkthroughs not being tailored enough to suit designers’ needs in a business oriented setting. It is possible to assume that as the outcomes of DW for utilitarian purposes are uncertain, it might be a tool preferably used in an in-house design project-setting where your work is not funded externally and thus implying guaranteed value exchange. The interviewed design consultants use desktop walkthrough to promote and concretize the value of prototyping service scenarios but not as a way to actually prototype services as part of their work process. Perhaps this is due to the previously mentioned uncertainty and/or that the tool can be perceived as too playful or trivial. The reason that DW was used by the design researcher together with the telco company was an academic interest in the tool. The stakes for the researcher were low since the outcome was not important. However, during the introduction of the DW, some effort was made to make the tool sound serious. Also, the design student had little to lose and could thus use DW with little regard for failure.

There is going to be a substantial difference in what the participants have learned and what a facilitator can translate into useful design insights or knowledge. Since the participants are collectively constructing their own external representation they must coordinate and collaborate. This activity is in itself an exchange of knowledge and a source of ideas. Not all of this knowledge, nor all ideas, will be captured by the desktop representation. In itself, and even during a presentation of a DW, the result can seem kind of predictable or lacklustre. From the point of the participants however, the DW might be seen as a valuable experience which depending on the purpose of the DW being utilitarian or not could be considered successful.

While the theoretical utilitarian value of a DW can be tied to the ability for participants to manipulate physical and temporal aspects of a service, many of the examples did not include a temporal aspect. There is a possibility that the aspect of *walk* in desktop walkthrough enables specific outcomes. Having a scenario available, i.e. attributes to be manipulated and tested against temporality, may probe the outcome – however, those attributes could also be replaced with ones independent of the temporal aspect. Doing this will still meet the importance of concretizing and making abstract concepts visual by using the modularity and playfulness inherent in DW. However, doing so should maybe not be considered a desktop *walk*through. Thus, the role of the scenario may guide outcome heavily and it is up to the facilitator to understand and manage the workshop setting to preferred alignment.



## Conclusion

We have shown that the purpose of using DW often do not follow the normal logic of utilitarian outcomes. If the underlying goal of using desktop walkthrough is educating or marketing, it is more important that the participant understands the value of design methodology rather than producing contextual value from the performed scenario. In regard to utilitarian purposes of using DWs, some outcomes have been experienced by the facilitators as disappointing. The level of innovativeness has been low and the tool has not been used in a way that realizes its full (theoretical) potential. Participants do not automatically use the DW to prototype their ideas but need to be encouraged and triggered by input and challenges from facilitators.

Examples of facilitation show a variety in the motivations for using the tool and thus inform us about facilitation in general and the many different reasons designers can have for conducting co-design sessions. The paper has included a wide variety of perspectives but what is missing from this broad view is the participant angle. Future research could examine what is it like to take part in a DW activity as well as what makes the DW feel meaningful from a participant perspective. Such research efforts can be based on a phenomenological framework, perhaps leading to more controlled comparative studies where the amount and types of facilitation are manipulated. Similarly, the utilitarian output could be studied in terms of its usefulness, innovativeness, appropriateness etcetera, for a design process.

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## Traces as service evidence

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### Abstract

In this paper, the idea of leveraging traces in service design for sustainability is presented. Physical evidence is an essential aspect of services as the service experience exists as a choreography of people, things and processes. These designed, tangible aspects of services play an important role in the overall service experience and at the same time act as affordances, leading the user through a desired service journey without interpersonal interactions.

Viewing services in the context of actor network theory, as networks of humans and non-humans suggests that this service evidence act as a carrier of explicit knowledge relegated to it by the designers. Integrating tacit knowledge in the design process is a meaningful endeavour especially in the context of service design for sustainability. Traces is a notion associated with focal practices that shed light in this unexplored direction of service design. Traces exhibit similar characteristics to evidence but in a capacity of carrying tacit knowledge.

**KEYWORDS:** traces, service design, craft, tacit knowledge, social innovation

### Introduction

This paper aims to introduce the idea of traces in the design of services. Traces, the perceptible enduring marks left on the material world through the engagement with people with it (Ingold 2007), are carriers of tacit knowledge acting as the keystone (Robbins 2016) between people, practices and things. We turn to the idea of service evidence to better understand the tools that create meaning in the intersection of time and material in contemporary service design in order to identify the meaningful design space for the integration of traces in service design.

In the first section of this paper the importance of the tangible in service systems is discussed. This is followed up by analysing how Actor Network Theory can be the perspective that provides an ontology necessary for such a way of designing service. This perspective opens the door to bridging the service design and craft discourse, especially when dealing with services aiming to transform organisational models such as relational services or transitional services. In the fourth section the need for traces is discussed followed up by a taxonomy of lenses that provide a clearer picture of traces and some

practical recommendation to integrating traces in contemporary service design process. In the final section, the conclusions and future direction of this research are discussed.

## The importance of tangible service evidence

In their core services exist as an interconnected network of people, processes and tangible artifacts (Titz 2001) that aim to create value in exchange within this system and provide a predetermined experience for all the parties involved. Service design is considered as being the process that explicitly aims to create and form services that are desirable from the clients' sides and effective from the service providers' perspective (Mager 2007 p. 355). Services, being the Holon above this system of value production are characterised by intangibility, escaping the human touch. This quality points to the performative character of services that "cannot be seen, felt, tasted or touched in the same manner that goods can" (Zeithaml et al. 1985). This is one of the four characteristics of services according to the IHIP model, the others being Heterogeneity, Inseparability, Perishability. The IHIP model points heavily to the differences between services and goods and is widely used and accepted (Moeler 2010) within service discourse. The main issue with the IHIP model is that it, explains what services are not rather than accounting for how services work in practice (Edman 2009). The experience focused perspective points to a phenomenological approach to services, looking at them as a collection of curated, mediated experiences. However, most human experience is grounded in the physical materialities that surround us.

Service design discourse has adopted the idea of physical evidence as "a functional form that acts as the interface between service providers and consumers." (Lo 2011) Physical evidence makes the intangible service tangible. Service tangibles are, in fact, one of the five dimensions of service quality in the SERVQUAL model (Parasuraman et al 1988, 1994) the other four being reliability, responsiveness, assurance and empathy. These service tangibles create a breadcrumbs trail before, during and after the service experience and act as carriers of knowledge passed on between the service providers and the clients. They tell the tale of the journey through the service and play an important role in most aspects of the way a service is experienced as they are the foundations upon which this experience is built. Service evidence plays a central role in service blueprints, a widely adopted method of service design (Shostack 1982, 1992; Bitner et al 2007). Service evidence is modelled above the 'line of visibility' in service blueprint and can be seen as an interface between the actions happening above and below this line. The characteristics of this evidence depends on the type of servicescape (Bitner, 1992) of the designed service. They are anchors of micro-experiences within the whole macro-experience of the service as a whole. (Bofylatos et al. 2016). Managing the evidence (Berry and Bendapudi 2003) can provide necessary, tangible clues that steer the users in the right direction within the servicescape.

In the Actor Network Theory perspective described in the next section, tangible evidence is an essential part of the service network as pieces of evidence act as delegated ushers guiding flows within the network. Evidence is a carrier of empirical knowledge, enabling users of the service to move along the lifelines, paths and flows of social life (Hallam and Ingold 2007). These context-specific field research approaches enable designers to engage in a design practice characterised by reflection-in-action (Schon, 1987). ANT coupled with Schon's reflection in action enable us to respond through a dialogic engagement with humans and nonhumans that would be impossible in the rigid framework of scientific knowledge and naturalistic operationalism. What is missing, however, in design today is the integration of tacit knowledge with the same rigour that empirical knowledge is embedded in the designed experience and artifacts.

The importance of "material experience" (Karana et al. 2013) and craft thinking as a way to better manage knowledge (Neidderer et al. 2011) further support the necessity to design with the tangible and the intangible in tandem. Turning to service evidence provides a fertile field for new knowledge and application that brings together those two aspects of services. For too long services have been entranced with their intangibility, the ontology of service design has to include more tangible aspects of services.

## Services as actor networks

A framework that can support the modelling of services is one proposed by French sociologist Bruno Latour called Actor Network Theory (ANT). The starting point of ANT is the need to move away from the modernist subject-object distinction and move towards one of humans and non-humans, in this distinction both natural objects and sociotechnical artifacts belong. ANT treats humans and non-humans symmetrically, which means that it does not want to impose on them *a priori* distinctions, such as a distinction between intentional human action and casual action. Artifacts, natural objects and humans are nodes in networks of relations. No node of the network enters it as a pre-given entity. The essences of these entities are constructed in stabilizing networks, they are the output of these networks, not their input. Artifacts and humans co-constitute each other in these networks creating collectives or associations of humans and non-humans. Artifacts may be means for human ends, as humans may be means for the ends of artifacts. Agency, moral or otherwise, is distributed over all actors in a network of associations, properly speaking only associated entities acts (Latour 1999). A service experience is a moment of creation of such a network. Anything that makes a difference in the way other actors behave is in turn an actor. Actors can make other actors do things, in particular they can delegate actions to other actors. But these actors may overtake action and behave in unexpected ways. To address this ‘uncertainty surrounding action’ Latour proposes the distinction of five sources of uncertainty (Latour 2005). The uncertainty about the outcome of putting artifacts into this world is one of them. The way to deal with said uncertainty is to let the artifacts themselves become things that act by making other actors do unexpected things. This is why artifacts are mediators and not simply intermediaries (Latour 2005). Intermediaries transport meaning and force without altering them, and they are deterministic, meaning that given their input their output can be predicted without uncertainty. On the other hand, mediators “transform, translate, distort and modify the meaning or the elements they are supposed to carry” (*ibidem*). Artifacts as mediators are therefore a source of uncertainty and surprise. Artifacts, in this context, execute programs of action and are therefore agents, just like living beings. These programs of action are inscribed in them. The idea of the sociotechnical artifact offers an ontology that better integrates the idea of the artifact as “a semiotic organism in the centre of a threefold design semiosis.” (Zingale & Dominguez; 2015) within ANT. What emerges in this context is the idea that we can benefit from looking at services as networks of actors that create new knowledge through design semiosis. The tools we use nowadays are better suited for empirical and scientific knowledge but the need to differentiate the service dominant economic model from the goods dominant economic model (Vargo and Lusch 2006) has caused us to miss out on material experiences and the co-creation of tacit knowledge within the networks that create the service. This widening of service ontology can be complemented by turning to the philosophy of craft. A field where in the past years new knowledge that aligns itself with the goals of design for sustainability and the transition towards sustainment, the next epoch of human societies. Reshaping the epistemological and ontological assumptions behind our worldview is necessary in transitioning towards a new paradigm, a shift necessary to alleviate the ecological and social issues humanity is facing. This new posture has more uncertainty and fuzziness due to not being reductionist and thus provides harder to use but more robust tools that are able to address the wicked problems we are facing.

## Crafting social innovation

Service design has been recognized as an approach that has a capacity to foster deep organizational and societal change. Starting at the periphery of an organization service designers act as enablers and facilitators engaging in a process that builds trust within the organisations. This process, when successful, creates a common language leading to shared

transformative insights into the organisations' fundamental assumptions, values, norms and behaviours that will eventually give birth to pilot projects that embody the direction of change (Junginger, Sangiorgi 2009)

This process of organisational change enabled by service design has been taxonomised in three different levels (ibid.). Service interaction design, where the main focus of the process is the creation of new artifacts and behaviours. Service design intervention, with the focus here being in questioning the norms and values of an organization and providing a way towards an alternative. Finally, service design can act as a facilitator in organizational transformation changing the bedrock upon which an organization has been built, changing the fundamental assumptions in the DNA of an organisation. This gives a perspective of services as an engine for wider societal transformations, and as a means for a more collaborative sustainable society and economy. The six important principles in these transformative services according to Sangiorgi (2011) are: Active citizens, building capacities and project partnerships, redistribution of power, infrastructure and enabling platforms, community as an intervention size and enhancing imagination and hope. These six principles point towards a posture that provides a valuable connection with approaches in the field of design for sustainability. In the intersection between the two, we find solutions that enable the transition towards sustainable society through the re-evaluations of the system of values and the undergoing of an epochal shift (Fry 2004) from Modernity towards the next era of human development. In this vein, three important directions have been identified in service design discourse: Design of relational services for social innovation, transition design and the logic of craft.

Social innovation is seen as the application of service design tools and methods by creative communities to create services that enable the solutions of problems they face without expecting the change in the underlying problems. (Meroni & Bala. 2007) These organisations are positioned in the core of taxonomy of levels of potential impact of service design (Junginger, Sangiorgi 2009) as they embody a different system of values based around conviviality (Ilich 1973) openness and trust. These services bring together the diffuse design capacity of their members and the professional design capacities of trained designers (Manzini 2015) and have the capacity to foster the 'sustainable everyday' (Manzini & Jegou 2003) and reconstitute the domains of everyday life (Kossof 2015). The goals of such communities overall have been identified as:

- *creating micro-narratives that challenge the dominant narrative of modernity,*
- *empowering local distributed creative communities,*
- *challenging the addiction of consumption and the institution of private property and fostering degrowth (D'Alisa et al. 2014)*
- *fostering lifestyles based around conviviality, reciprocity and solidarity"*  
(Bofylatos 2017b)

Another differentiating factor between service design undertaken in commercial settings and social innovation is the type of service produced. Building on Martin Buber's work (1921) the distinction between standard and relational services is proposed (Cipolla & Manzini 2009). Standard services exist within an object subject, or "I-It", relation whereas relational services exist in a subject-subject, "I-Thou" relationship. In the context of the first model agents and clients exists in predefined roles, performing scripted actions in a strictly choreographed journey. In contrast, under the scope of relational services benefits are reciprocally produced and shared by participants in a collaborative way. This points to the need for a shift in our material culture (Walker, 2017) coupled with the adoption of service dominant logic (Vargo & Lusch 2006) and value in use (Grönroos 2008) instead of product dominant logic and value in exchange. Taking a step back and considering both Buber's work and Actor Network Theory it becomes evident that this difference expands to artifacts as well as people. As such it is necessary to create a living, circular, dynamic interaction with the material touchpoints inside a service encounter. The view of artifacts as means in the service experience is not able to incorporate the ongoing evolution in the fields of craft and tacit knowledge and as such new tools and perspectives have to be identified, prototyped and debated within service thinking discourse especially in the context of transitioning towards sustainability.

Irwin (2015) proposes that service design, design for social innovation and transition design be viewed “along a continuum in which spatio-temporal context expand and deepen” (Irwin 2015). Transition design argues for the transition towards “sustainable futures is a design process that requires a vision, the integration of knowledge and the need to think and act at different levels of scale” (Kossoff 2015). Transition design advocates a radical shift of the socioeconomic and political paradigm within a long-term vision of change. As it is an approach that complements social innovation providing the solutions on the strategical level, it is complementary to the tactical solutions provided by social innovation. The main areas of focus of the transition design framework are: visions of transition, theories of change, mindset and posture and new ways of designing (Irwin et al; 2016). The logic of craft provides valuable tools and perspectives for all four areas of knowledge.

The logic of craft has emerged as an important vehicle for transforming design into a redirective practice (Fry 2007) as it provides an ontology that is compatible with sustainability and both social innovation and transition design. The ambition of a redirective practice is to realise a new system of values, to redirect the structural and social conditions that inform ways of being in the world. Craft has the capacity to act as a framework that foster engagement with human values (Sennett 2008; Crawford 2009) and in practice imbues and embodies these values in material form (Walker 2017) providing a practical way to reshape material culture by engaging in exploration and practice (Niedderer et al. 2011). Craft is a way of thinking through the hand manipulating a material (Nimkurlrat 2010, 2012) and a way for the thinking body to express itself (Malafoutis 2013) and thus a by engaging in a dialectic process with the material (Massumi 1992), it is a way of creating and embodying tacit knowledge into material form. (Bofylatos 2017a). Craft is more than a tool for understanding and designing for materialities and goes beyond process as according to Fry “[t]he qualification of craft practice is neither predicated upon established hand working, machine-based skills nor new methods which employ advanced technology but rather on the articulated relation between hand and mind in making which secures a direct human presence, as the loci of power and knowledge, in the made.” (Fry, 1994). This points to the synergy between the agendas of craft, sustainment (Kiem 2011) and social innovation (Mazzarella et al. 2017).

## The need for traces

So, the question that arises in the context of the evolution of service design field is how can the aforementioned common ground between the two fields translate in the practice of service design. In order to organize the wealth of intersections we can taxonomise these inside the four areas of the focus of transition design. For example, in the context of mindset and posture, the idea of ‘mastery’ put forward by David Harvey (1990) can be beneficial in the context of communities engaged in social innovation. Mastery that ‘is both non-propositional and time intensive process’ (Harvey 1990:284). The same can be said for the process of fostering the evolution of diffuse design capacity (Manzini 2016) in collaboration with designers in a participatory design process. The knowledge governed by mastery is slowly created and due to its embodied nature can only be shared locally, in close spatial relationships. Bearing in mind this notion when designing in the context of social innovations allows for integrating both the looser time constraints and novel ways to disseminate new knowledge leading to a more realistic management anticipation by the participants.

Another important way that craft can inform social innovation is through the idea of ‘focal things and practices’ (Borgman, 1984) which refers to activities that use technological equipment in an engaging way as opposed to easy-to-use commodified activities. Participating in a creative community has to be a focal everyday practice that led by a new vision challenges and changes the socio-ecological context and fosters a new way of being in the world compatible with sustainable lifestyles. Borgman’s line of thought is also better suited for service dominant logic due to the fact that it is antithetical to what he refers to as the ‘device paradigm’ (*ibid*). In this paradigm, technology is seen as the ‘device’ when its

means are separated from its ends, shifting from this paradigm to one of human engagement with the socio-ecological context of our senses, whereas engagement with sociality and materiality are the goal of focal things and practices. This perspective once again points to the shift from the perspective of value in exchange in the device paradigm to value in use in the focal paradigm that provides opportunities to come up with alternatives to the device and to change the relationships between technology and people.

Traces, the perceptible enduring marks left on the material world through the engagement with people with it (Ingold 2007) have the capacity to act as the keystone for the dialogue between people, practices and materials (Robbins 2016). In the context of service design for social innovation we can perceive traces as the marks left on the **material** by **people** engaged in in a focal **practice**. Materials have the capacity to contain tacit knowledge and through engagement to communicate it back to us. Traces can be seen in relation to service evidence in the same way that relational services are related to standard services. The reasons for the need for such an approach are practical, aesthetical and ontological.

The practical reason has to do with the evolution of the diffuse design capacity found in creative communities. Looking at social innovation as a learning process, one that has to create new knowledge, the need shifts from solutions to processes and tools. With the role of the designer shifting towards a facilitator or master designer the aim turns to guiding apprentice designers to better use the design process. Traces can be the physical manifestation of these lessons and as such they are necessary in the process co-creating with the community.

Modernist aesthetics have been shaped by the capacities of mass production causing the creation of culturally neutral and bland products with pristine smooth surfaces that conceal the insides of products (Walker 2006). These aesthetic characteristics are telling of the device paradigm and have made traces an unwanted characteristic. This points to an aesthetic informed by the Kantian idea of beauty in which “what we call beautiful what we each believe everybody should acknowledge as perfect, complete. We take pleasure, from a disinterested distance, in finalities. [...] The beautiful needs no sustenance; it is anorexically self-satisfied. It puts us in touch with pure reason, not the practical reason of duties of care.” (Tonkinwise 2003). This view cannot support meaningful, long term relationships and can only foster a ‘throwaway culture’ guided by the market that is responsible for the devastation of the natural environment. Yet there are traditions that find meaning in imperfection and unfinishedness such as the traditional Japanese practices of *wabi sabi* and *kintsugi* (Tsaknaki and Fernaeus 2016). These ways of working go beyond the aesthetic as the idea of beauty and point to the underlying system of values. The appreciation of traces left by focal practices points to a different aesthetic system, one guided by beauty in use “the sort of appreciation that does not coincide with use, but perhaps comes afterwards. It is because this unmetaphysical judgement of beauty-in-use takes the form of giving thanks, that it is active, returning the favour by taking the form of care.” (Tonkinwise 2003). Rituals of care promote interaction with the material sprawling around indebtedness, thankfulness and conviviality. Leaving the space for the people who will be part of the service system is necessary to foster the emergence of traces.

Ontologically, traces provide a framework to design with tacit knowledge in the context of service design. Any human activity with a high degree of using the hands or the body, for example, craft processes, has a common thread in connecting them; it is impossible to put into words what happens in its entirety. For example, everybody breathes, but it is impossible for most people to explain how they do it. This kind of experiential, embodied knowledge is referred to as ‘tacit knowledge’ (Polanyi, 1958; Niedderer, 2007; Biggs, 2004). In the context of design and the creation of artifacts, craft has been mostly associated with it. The majority of knowledge held by craftsmen is tacit. The artisan work establishes a skill and knowledge sphere that may exceed the explanatory verbal abilities of man (Sennett, 2008; Pallasmaa, 2009; Wilson, 1998).

Since design inevitably embodies and reinforces values, it is important to pay close attention to what kind of values design should seek to strategically promote and legitimise in order to accelerate a transition towards human flourishing and sustainability (Ehrenfeld, 2013). At the same time, the designed artifact sits in a middle of a threefold design semiosis (Zingale and Zingale & Domingues, 2015) where each of its aspects leads to the creation and embodiment



of new knowledge associated with each of its facets. These types of knowledge are tacit, empirical and scientific (Bofylatos 2017a). This ontology calls for the reconstitution of the tacit in the design process as an equal to the other two kinds of knowledge. Having accepted this ontology, the next logical step is to translate it to methodological directions in the field of design.

## Integrating traces in the design process

With traces being multiply authored events created through time, the question of how they can they be designed arises. Going back to their explicit counterparts, service evidence, they are the tangible manifestation of different stages of the customer journey through the service system. Each bit of evidence is predetermined and contains specific knowledge. Traces are created over time through the everyday life of people inside the service system, traces are carriers of implicit knowledge. This translates to design as creating the space for traces to emerge and identifying the instances and places within the service journey that can leverage the characteristics of traces to more robustly create relational services.

Traces are not important for assessing what we have done, rather they provide subtle cues for what we should do. To better understand them three lenses are used, attributes, entanglements and trajectories (Rosner et al. 2013) these are views of traces not categories and thus are not mutually exclusive. The lens of 'attributes' points to the material experience (Karana et al. 2013) and the nuanced particularities that each trace and the material upon which it is inscribed possess [...]. The second lens is that of 'trajectories' unmasking the way that the interactions of things and people evolve through time resulting in wear. The final lens is that of 'entanglements' revealing the interactions of materials and people.

Entanglements are the points where the attributes are experienced when the trajectories of humans and/or non-humans meet. These three lenses uncover the main characteristics of traces. Traces are tied with the materiality in which they are created, traces signify an activity through time, a flow. Traces appear on the intersection of materialities and humans and can be used to understand the past and to guide the future.

The perspective that understands the characteristics and the intersections of people and things through time is one that is highly compatible to the service design methodology. Touchpoint analysis, customer journeys and service blueprints are tools of service design that aim to document the flow of people, things and information through time. Integrating the different lenses of traces in the appropriate parts of contemporary service design practice is thus not a hard task.

In the context of 'attributes' a meaningful direction is the integration of parts of the Material Experience Design methodology (Karana 2015) in the design of touchpoints for a service. By selecting appropriate materials designers can more robustly contribute in creating a desirable experience within the service system. Building on the framework of Micro-Macro UX (Von Saucken et al. 2013) the design of the overall experience grounds itself in the micro experiences with touchpoints the user interacts with.

The second lens associated with traces, trajectories, unfolds itself in time. As people, things and information flow through the service system they leave traces that both tell a story of the past, but also guide the future. Due to their tacit knowledge, as with attributes, trajectories are not designed. Instead the designer has to create the conditions that will allow these traces to emerge. Selecting where and when these traces are complimentary and useful can become apparent by a closer analysis of the customer journey and the service blueprint.

If appropriate attributes and trajectories have been selected, the entanglements within the service system will create the traces that are desirable. The emphasis is in creating the conditions that enable the emergence of these traces. These traces will document the tacit knowledge created at different times by different people, and through engaging those engaged in focal practices will enable the co-creation of tacit knowledge between different humans and nonhuman agents.

An example of a system that bring together tacit, empirical and scientific knowledge is a hiking trail in the wilderness. The trail itself is a trace, a line of earth pressed under the feet of

many different hikers through time. It embodies knowledge about the trail such as ‘where do I get sheltered from the wind’, ‘which is the most stable way to go down?’. The trail exists in a dialogic relationship with the environmental conditions, the local fauna and the hikers themselves. In addition, the signage that documents the time needed to reach different destinations is part of the evidence that is employed. The time is based on empirical observations of past hikers and cannot be considered ‘hard data’, it is an estimation. On the other hand, the GPS data that can be saved in a mobile phone tracking the hike create the irrefutable hard data that can tell a story about the metrics of the hike but nothing about the experience of the people who participated. If we were to design the hiking experience we would need go beyond organising all of the aforementioned touchpoints, evidence and traces and allow for their uncertainty to emerge.

## Conclusions

Incorporating tacit knowledge in design provides novel challenges and opportunities. This process aims to bring about a new balance in the design process, but not to dethrone scientific and empirical knowledge. The aim is to bring tacit knowledge back in the discussion as an equal. The reasons behind this choice are associated with the need to engage in research through design with alternative systems of values. Tacit knowledge provides a way towards a new “restoring narrative unity” (Walker 2017) fostering a more meaningful material culture and unlocking the redirective potential of design. Especially in the context of service design for social innovation, due to its transformative position and distributed character, tacit knowledge seems like a necessary consideration.

Traces as a notion are not foreign to the design of services. Service evidence is an aspect of service design that already addresses some of the same issues but from the perspective of empirical and scientific knowledge. Designing with tacit knowledge is still foreign to designers as the discourse has been dominated with the values of Modernity. Creating the tools and adopting a position that can take these considerations into account is necessary for the shifts required to transition towards a sustainable everyday life. As such the frameworks of research through design and community design provide unique opportunities for unlocking the transitive nature of service design by coming up with new ways of making social innovations into focal practices.

The intersections of the fields of craft and design are a fertile ground where ideas of the material and the immaterial cross-pollinate creating a framework that can be challenging but is necessary if we are to imagine design in an alternative system of values. Developing, prototyping and evolving design tools that allow for these new perspectives to be integrated in practice is the next big step in this process. Creating new tools and frameworks that enable service designers to creatively incorporate traces in practice is the next logical step in this direction.

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# VR service walkthrough: A virtual reality-based method for service prototyping

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## Abstract

This work introduces a new service prototyping method called the VR (virtual reality) service walkthrough. The VR service walkthrough is a virtual simulation of a service journey, representing how the service unfolds over space and time. The ultimate goal of the method is to enable service designers to increase empathy with the potential customer groups. The goal is pursued by engaging and immersing the service user in a prototyped service journey through the use of VR to gain valuable feedback about the service. To evaluate the service experience coming from the method, a case study on prototyping an audio tour guide service is conducted, focusing on the evaluation of the method's outcome and its experiential factors. The case study shows that the method can communicate the service concept in an engaging and immersive way and foster constructive feedback, though its VR interaction elements can be challenging for novice VR users.

**KEYWORDS:** experience prototyping, service design, service prototyping, service walkthrough, virtual reality

## Introduction

Service prototyping is an integral, significant part of service design aimed at increasing designers' ability to empathise with intended users, customers and other stakeholders of a service (Blomkvist & Bode, 2012; Miettinen, 2011). A service prototype is an important service design tool for making services visible and helping to communicate service concepts, at the early stages of the new service development process (Blomkvist & Holmlid, 2011). Service prototyping contributes to the service design process by defining the service design problems to be solved, evaluating the usability and effectiveness of a service concept, and enabling collaboration among different actors, such as users, stakeholders and service providers (Chasanidou & Karahasanovic, 2014; Simo et al., 2013). To understand service experiences, service designers need to capture both physical and immaterial qualities of services, and portray the sequence of interactions that take place between a service provider and a service user, through service prototyping (Arvola et al., 2012). The most crucial factor in the service prototyping process is the ability to create a realistic sensation for the users and

immerse them in these service experiences (Jung Bae & Seong Leem, 2014; Simo et al., 2013).

Services that can be described as ‘journeys’ are the most prevalent kind of service (Blomkvist et al., 2012). Service journeys represent a chronological sequence of interactions between users and service providers and contain both physical and immaterial qualities (Blomkvist et al., 2012). In order to present and evaluate a service journey and improve its design, it is necessary for the service to be understood as a whole service experience, thus presenting the whole sequence of interactions or ‘touchpoints’ with the user as something to be thought of holistically (Arvola et al., 2012; Blomkvist & Arvola, 2014). Therefore, when prototyping service journeys, a holistic design approach should be followed and the experiential, physical and immaterial qualities of the service should be recreated with adequate precision (Arvola et al., 2012; Blomkvist et al., 2012; Boletsis, Karahasanovic, et al., 2017). These requirements pose certain challenges for service designers. One major prototyping issue lies with the significant design choices that must be made during the early stages of the new service development process focused on achieving the highest possible levels of prototype fidelity and development agility at the lowest possible cost (Arvola et al., 2012; Boletsis, Karahasanovic, et al., 2017). These choices concern the use of the appropriate prototyping tools and methods so that the produced service prototype can immerse users in the whole service experience, empathise with them, and ultimately extract useful and high-quality user feedback about the service experience (Jung Bae & Seong Leem, 2014; Simo et al., 2013).

## Background and Research Motivation

There are several prototyping methods and tools that can be used when prototyping service journeys. At the conceptual level, tools like customer journey maps and service blueprints can describe the main interactions of a service journey; however, they are limited in their ability to recreate the experiential qualities of the service and relay information associated with service periods and interactions with users at touchpoints (Holmlid & Evenson, 2007; Jung Bae & Seong Leem, 2014). At a more practical level, methods like bodystorming, experience prototyping, and service walkthroughs have been used for prototyping service journeys.

Bodystorming is an interaction design method used in service design for evaluating service prototypes from an experiential point of view (Simo et al., 2013). It enables the user to enact and role-play the service scenario in prototyping environments that resemble the intended use context (Burns et al., 1994; Oulasvirta et al., 2003; Schleicher et al., 2010). Experience prototyping is an approach that attempts to understand the experience of interacting with an artifact, system, or a service (Arvola et al., 2012; Buchenau & Suri, 2000; Simo et al., 2013). This approach is similar to bodystorming, in that it tries to replicate an existing situation or construct a new one in which participants can understand, in an embodied way, what it feels like to interact with something (Arvola et al., 2012). However, these methods are not typically used to understand whole service experiences, but rather to focus on single touchpoints (Arvola et al., 2012; Simo et al., 2013).

By contrast, the service walkthrough is an established service prototyping method specifically tailored for service journeys. This method allows service designers to put themselves in the shoes of the users and, along with the targeted user or customer groups, go through a physical representation of how the service journey unfolds over space and time (Arvola et al., 2012; Blomkvist & Bode, 2012). In service walkthrough, all stakeholders can take part in the service representation and understand the service by being physically and emotionally present in the situation of use. Service walkthrough, as a service prototyping method, originates from the combination of experience prototyping, pluralistic walkthrough, and bodystorming, working as a way of increasing empathy with the potential customer group by going through the whole service and using props to represent certain actions (Arvola et al., 2012; Blomkvist & Bode, 2012). Even though service walkthroughs takes place in the real world, in the actual or similar servicescape, they use physical props and mock-ups that make



it ‘difficult to get the feel for how a customer journey would be experienced’ when prototyping (Arvola et al., 2012). The use of multimedia is suggested as a way to further improve the service walkthrough method and its experiential qualities (Arvola et al., 2012).

The need for new service prototyping methods that can offer more realistic simulations has been reported, and the use of virtual elements for developing new service prototyping environments has been suggested as a way to address the limitations of conventional methods and to optimize the service prototyping process (Jung Bae & Seong Leem, 2014; Meiren & Burger, 2010; Simo et al., 2013). The need for realistic service representations has been emphasised (Arvola et al., 2012), and virtual reality (VR) has the potential to overcome some of the current prototyping limitations by offering high-quality visual, audio, and haptic simulations (Jung Bae & Seong Leem, 2014; Seth et al., 2011). Over the last few years, major changes in the VR technology field have taken place, thus allowing for the development of low-cost, high-quality, immersive, and collaborative 3D virtual environments and opening the way for the use of VR in service prototyping (Boletsis, Cedergren, et al., 2017; Jung Bae & Seong Leem, 2014; Koutsabasis et al., 2012). Indeed, virtual settings have already been used to analyse and evaluate services in realistic environments, as these technologies can minimise the gap between the actual and prototyped service environments (Boletsis, Karahasanovic, et al., 2017; Jung Bae & Seong Leem, 2014).

This work features an examination of the application of VR in prototyping service journeys by implementing a new way of using VR to recreate service journeys in a highly immersive, agile, and inexpensive manner. To that end, a new service prototyping method, called the ‘VR service walkthrough,’ is introduced and evaluated. The method is inspired by service walkthrough as described by Arvola et al. (2012) and focuses on prototyping service journeys that use VR environments and digital artifacts. In the following section, the VR service walkthrough is described in detail. Then, a case study of a service prototype, that is, a mobile audio tour guide, is examined and evaluated using the VR service walkthrough method. Finally, the results and future directions of the project are discussed.

## VR Service Walkthrough

The VR service walkthrough is a virtual simulation of a service journey representing how a service unfolds over space and time. The method aims to facilitate the development and evaluation of medium-to-high fidelity service prototypes with distinct spatial elements and customer journeys using fully immersive virtual technology. VR service walkthroughs are facilitated by service designers and involves actual service users and potential service stakeholders as prototype testers. The method allows designers to explore, evaluate, and communicate service concepts in a holistic way, capturing the service as a whole. At the same time, the method enables service users to immerse themselves in the virtual prototyping environment, to interact with service components in virtual form and experience the service journey in VR.

The VR service walkthrough is based on the service walkthrough prototyping method, which adopted its elements from the methods of experience prototyping, pluralistic walkthrough, and bodystorming (Arvola et al., 2012). Undoubtedly, these qualities, along with the evaluation protocol, were also ‘inherited’ by VR service walkthrough, in addition to utilising VR as the enabling technology of the method. Pluralistic walkthrough still provides the interaction components of the main process, allowing the user to explore the prototype. Bodystorming is a necessary element of the process, however the fact that VR service walkthrough can potentially reach high levels of fidelity may minimise the need for role-playing. Experience prototyping, though, is the focus of the introduced VR service walkthrough method, since it is considered extremely important to be able to prototype and capture the experience of interacting with a service, especially when this experience is mediated by VR, thus creating a fully immersive, simulated, and situated experience.

The VR service walkthrough method is designed to enable medium-to-high fidelity prototyping and to be effective in terms of development agility and cost. VR service walkthrough, due to its technical nature, targets agile development and on-the-fly adjustment of the service components based on the service users' feedback, so that more observations and conclusions can be drawn from the service prototyping session. At the same time, the development cost of the prototyped services can be affordable, ranging from low-to-medium cost, depending on the chosen hardware and the simulated scenario. The use of high-quality VR headsets (e.g., HTC Vive headset) and the development of customised, detailed graphic environments can be costly, while the use of smartphone-based headsets (e.g., Google Cardboard) and commercial off-the-shelf (COTS) applications can minimise the cost significantly.

In order to demonstrate an actual application of the VR service walkthrough method and evaluate the service experience coming from it, a case study on prototyping a location-based audio tour guide service is conducted, focusing on the evaluation of the method's outcome and its experiential factors.

## The Case: Location-based Audio Tour Guide Services

Tourism is a service-intensive industry that depends on the quality of customer service experiences and customer journeys, thus service prototyping has found an application in evaluating tourism services (Stickdorn & Schneider, 2009; Stickdorn & Zehrer, 2009, 2012). At this stage, a case is built on the development of a mobile, location-based audio tour guide service for the city of Oslo, Norway. The case uses the VR service walkthrough method in the early service prototyping stages to examine the service concept and get valuable feedback from the target group of customers/users on the idea behind it, and to gather suggested improvements and additions.

The qualities of location-based audio guide services have been researched in the past, and it has been suggested as a promising tool for tourism services (Bederson, 1995; D'Auria et al., 2015; Magnusson et al., 2009; Vazquez-Alvarez et al., 2012). However, there is a need for further research on new location-based audio tour guide services that enable tourists to freely explore open, outdoor urban environments in a culturally informative way while also supporting social interaction and shared experiences (Iso-Ahola, 1980; Kečkeš & Tomičić, 2017; Yovcheva et al., 2012).

### Service Description

The location-based audio tour guide provides users with audio information about outdoor places of interest (buildings, landmarks, monuments, etc.) that are in their vicinity. The service scenario sets the users as tourists in an open environment, launching the audio tour guide app from their smartphones and wearing their headphones. Based on their location (GPS-based), when they approach a place of interest and within a specific radius, an audio track with various pieces of information about the place begins to play automatically. The prototyped version of the service features audio tracks with durations between 65 and 90 seconds.

After launching the app, the user does not have to check the smartphone again, unless he or she wants to locate and navigate to the nearest point of interest through the service's map function. More specifically, the audio tour guide service consists of two main actions: 1) service users navigate the city as auditory information is presented to them based on their location, and 2) the service users check the map embedded in the app to locate the nearest point of interest and then move towards it.

The design goal of the service is to allow tourists to focus on their surroundings and on the real world, navigating freely based on what they see and like while minimising their interaction with the smartphone. At the same time, as a tourist, it is important to get all the necessary information in time and in place, so it is possible to 'interpret' the environment and find out more about the cultural heritage of the visited place in an unobtrusive and undistruptive way. Thus, auditory information is chosen as a way to augment the service users' perceptions without occupying their visual sense. The interaction design of the tour guide is based on lessons learned from past research in the field, focusing on the principles of minimal design and casual use.

### Service Prototyping with VR Service Walkthrough



Figure 1. *Upper image:* The VR view from the VR service walkthrough. *Lower image:* Conducting the VR service walkthrough with the service designer (on the right) "accompanying" the service user (on the left).

VR service walkthrough was used to develop and evaluate the service prototype of the audio tour guide service. Google Street View VR was used to enable the service user to navigate the city of Oslo virtually (Fig. 1). Audio tracks of 65-90 seconds' length related to 15 places of interest were recorded using historical information from educational and reliable sources. Google Street View VR provided the user's location, in order to trigger the relevant audio track when the user was in the radius of a point of interest. The service's map functionality was facilitated by Google Maps, thus allowing the service user to get a map overview of the surroundings and the places of interests in the area. VR hardware consisted of an Android smartphone, a generic VR headset, and a wireless mouse for interaction/navigation purposes (Fig. 1). The service user was also wearing headphones. Ambient sound effects (i.e., people walking in the street) were also added, to provide more realism to the scene for immersion purposes.

At this stage, the walkthrough involved one user per session and focused on individual feedback. The service user had the opportunity to 'visit' several monuments in the city of Oslo, Norway virtually and to listen to historical information about them when he or she was located in their vicinity. At any time, the user could check the VR map, locate the nearest place of interest, and navigate there.

The service designer moderated the VR service walkthrough session, 'accompanying' the service users on the virtual tour by observing their service journeys through screen mirroring (Fig. 1). While navigating, the user was free to express comments, thoughts, and opinions on the service to the service designer and to describe the whole experience. The service designer documented the user's feedback and followed-up on the user's remarks, always in an investigative, discreet, and unobtrusive way without disturbing the flow and distracting the user. When it came to pausing the walkthrough session or not, to collect user feedback (Blomkvist & Arvola, 2014), VR service walkthrough implemented a middle strategy. The designer identified specific use periods when the user was navigating through areas where no points of interest were located, thus the service was less intense and cognitively demanding. Taking advantage of these periods allowed for short discussions, asking questions, and following up on the user's remarks without breaking the immersion for him or her.

## Evaluation Study

An evaluation of the VR service walkthrough prototyping method took place based on two factors: 1) the subjective meaningfulness and quality of feedback it can produce and 2) the user experience it offers to the service users. The first factor is an indirect measure of evaluating the method through the quality of its output for the audio tour guide service. The factor was investigated via a semi-structured interview. The second factor is a direct measure of evaluating the method by examining the resulting user experience. In the context of this work, the element of user experience is considered extremely important, since experience prototyping lies at the heart of the proposed method. The second factor was investigated via a semi-structured interview and the administration of a user experience questionnaire.

Data collection was conducted as follows:

- Study consent and demographics (gender, age, education, digital tour guide and VR experience) were collected at the beginning of the session.
- A semi-structured interview took place after the VR service walkthrough session examining two themes, based on the two factors mentioned above.
  - First, the focus was on the audio tour guide service, asking the users what they liked about the service, what they did not like, and what they would improve in the current version (duration: 7-12 minutes).
  - Second, the focus was on the VR service walkthrough method itself, asking the service users what they liked and did not like about the method, focusing on experience, VR, and potential interaction issues (duration: 7-12 minutes).
- The user experience in the VR service walkthrough was captured by an adapted version of the Game Experience Questionnaire (GEQ), which was administered right after the interview (IJsselsteijn et al., 2013). The GEQ has been used in several studies to assess gaming and VR experiences because of its ability to cover a wide range of related experience dimensions (Lee et al., 2013; Meijer et al., 2009; Nabioyuni & Bowman, 2015; Nacke et al., 2010; Proffitt et al., 2015). In this study, the dimensions of Competence, Sensory and Imaginative Immersion, Flow, Tension, Challenge, Negative Affect, Positive Affect, Tiredness, and Returning to Reality (from the In-Game and Post-Game versions of the GEQ) were considered relevant and useful to the evaluation of the method. The questionnaire asks the user to indicate how he or she felt during and after using the VR system based on a series of statements. The adapted GEQ contained 19 statements (e.g. 'I forgot everything

around me”), rated on a five-point intensity scale ranging from 0 (not at all) to 4 (extremely). Its completion time was 5-7 minutes.

## Results

Seven users (mean age: 30.43, SD: 4.35, male/female: 4/3) participated in the VR service walkthrough of the location-based audio tour guide service. All participants have used digital tour guides and map services when visiting a foreign place more than once before. Two of them were novice VR users, not having used VR before; three of them were moderately experienced, having used VR applications in the past; and two were very experienced, actively using VR applications and owning VR systems. All participants completed the session successfully.

The first part of the interview regarding the location-based audio tour guide, resulted in the following qualitative remarks. Almost all participants liked the simplicity of the location-based audio tour guide service, praising its minimal interaction. They also found the use of audio to be less obstructing than visual information.

- *‘It’s on-the-go and it’s audio. I like that... I don’t have to check my phone’s screen while I’m walking.’ (Participant 1)*

- *‘It’s simple. You run the app and you get the audio information.’ (Participant 3)*

As for improvements and additions, four of the participants found the audio tracks to be too long (65-90 seconds). After running ‘on-the-fly’ tests with various track lengths, they suggested 45-60 seconds as the ideal track duration. Furthermore, even though they liked the free roaming functionality, they would also prefer for the service to suggest pre-defined sightseeing routes. Finally, some of the participants also addressed the commercialisation aspect of the service by suggesting the gamification of the tour and the awarding of prizes (e.g., discount coupons, memorabilia) to people visiting the places of interest.

- *‘Going wherever I want is nice but when I am visiting an unfamiliar place I would like to have some suggested routes for sightseeing.’ (Participant 3)*

- *‘The service can have Foursquare elements. Tourists can gain badges if they visit lots of places. Then they could trade these badges for real prizes, such as discount coupons.’ (Participant 2)*

The second part of the interview centred on the user experience with the VR service walkthrough method and resulted in the following remarks. Participants found that the VR service walkthrough method managed to present the service concept and demonstrate its functionality at a satisfactory level of fidelity. Participants felt immersed and reported that the navigation was close to the ‘real thing,’ even though the use of more high-quality VR headsets (e.g., Oculus Rift, HTC Vive) could have achieved even higher fidelity levels, as stated by one experienced-in-VR participant.

- *‘The method showed how the service works in a clear way. I understood how the audio tour guide is supposed to work.’ (Participant 1)*

- *‘Navigating the streets felt close to the real thing... In this case, I think VR works better than photos or regular Street View [browser version].’ (Participant 4)*

However, the novice VR users experienced certain interaction issues, experiencing cognitive overload due to the immersive nature of the method and feeling unnatural when using the method’s ‘teleporting’ VR locomotion technique.

- *'This interrupted movement in VR was weird sometimes.'* (Participant 7)
- *'I felt a bit strange and disoriented when I got out [of VR].'* (Participant 6)

The GEQ displayed high values of Flow and Positive Affect, moderate-to-high values of Competence and Immersion, low-to-moderate values of Challenge, and low values of Negative Affect and Tension. Tiredness was at low levels, while Returning to Reality presented low-to-moderate values (Fig. 2).

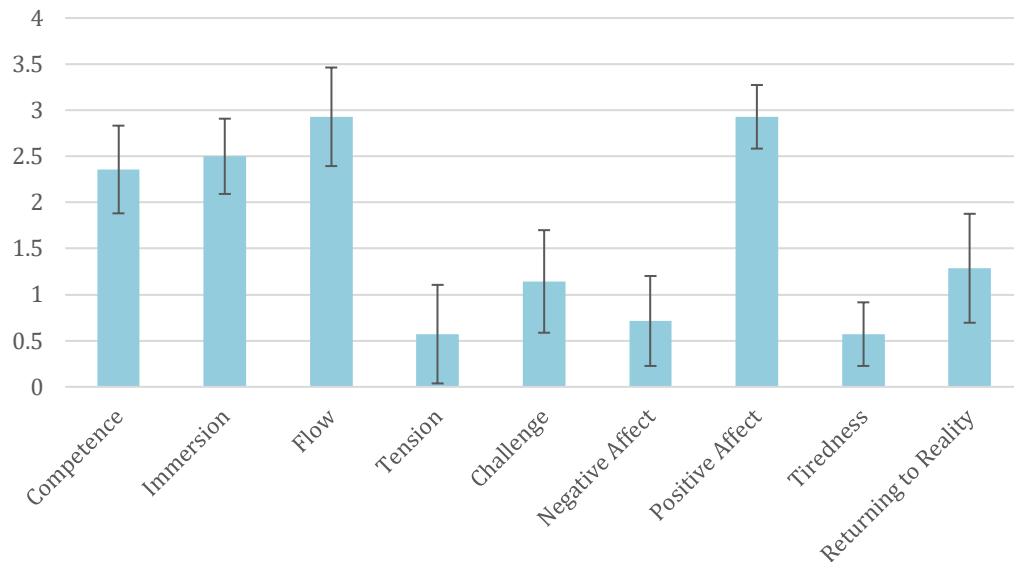


Figure 2. The GEQ mean scores (with standard deviation bars) across the nine dimensions of user experience, for the VR service walkthrough method.

## Discussion

The main observation coming from the results of the evaluation is that the VR service walkthrough method managed to communicate the service concept efficiently, providing valuable feedback to the designer. Users were engaged by the audio tour guide service, interacting with the prototype and providing feedback about it. Moreover, users' suggestions shed more light on the further development of the service, raising and addressing important design issues (e.g., adding routes, shortening the tracks, duration, gamifying the service) early on in the design process that otherwise may have required more time to be 'discovered'. The tourism-related case study and the audio tour guide service provided an ideal testbed for evaluating the performance of the VR service walkthrough for prototyping service journeys with strong experiential elements, ultimately showing positive and promising results.

The VR technology managed to immerse the users in the prototyped service while presenting certain issues. According to the GEQ, flow and immersion reached satisfying levels, showing that users were focused on the process. The questionnaire also revealed higher values of positive feelings than negative ones, demonstrating that the VR service walkthrough was an overall pleasant experience. However, the evaluation also showed that VR interaction may be challenging for novice users. The VR service walkthrough immersion may come at a cost, especially to those who are not familiar with VR. Even though, with the passage of time people will become more and more familiar with VR, its intense immersive characteristics may be an obstacle for the novice VR users of the VR service walkthrough method. At this point, it should be noted that the use of both the GEQ questionnaire and

the interviews allowed for the discovery, verification, and documentation of significant experiential issues. The GEQ also managed to provide a general overview of the method's experiential performance, while the interviews shed more light on specific issues the participants faced.

The evaluation of the method allowed the mapping of its current and potential performance regarding significant qualities of service prototyping, such as the prototype fidelity, development agility, and cost. A subjective representation of the method's qualities in the case study, and the potential performance it can achieve are shown in Fig. 3. Regarding the case study, the cost of the audio tour guide prototyping process was very low, using COTS applications, and it is certain that the resulting high-quality feedback completely justified the expense. The overall results of the evaluation process showed that the method reached moderate fidelity levels, and it was agile enough for the designer to be able to test alternative versions of significant service components (i.e., the duration of the audio tracks) on the fly, based on users' comments. This potentially shows that, by creating and using the VR service walkthrough method, a beneficial and effective trade-off among prototype fidelity, development agility, and cost was achieved. The trade-off was achieved on a case-specific basis, meaning that services with different characteristics may require finding a different balance among these three qualities. However, based on the evaluation results and the users' feedback, the potential performance of the method could reach higher fidelity and agility levels, if additional funding was dedicated to technical development, the use of high-quality VR headsets, and virtual models/environments specifically designed for the prototyped service.

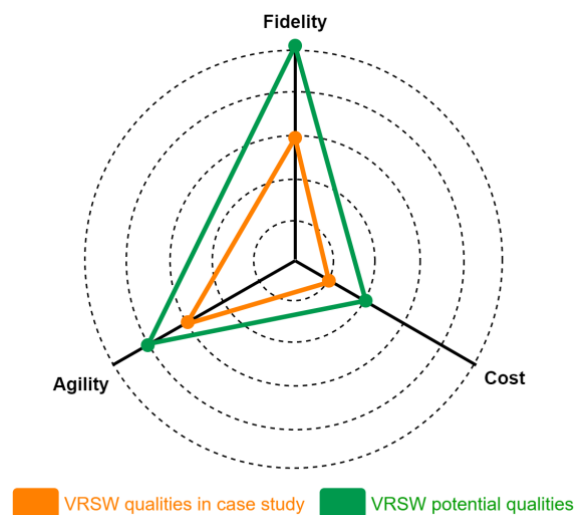


Figure 3. A subjective representation of the VR service walkthrough (VRSW) prototyping qualities in the case study and its potential performance.

Naturally, the VR service walkthrough addresses certain service prototyping conditions and cannot cover the whole range of services or all their development stages. VR service walkthrough targets the representation of service journeys, attempting to capture the sequences of mediated interactions between service providers and customers in a service prototype. The method is shown to be effective for communicating early service concepts and ideas. Tourism and travel services are of strong temporal and sequential nature, involving a series of interactions. This is why the proposed service prototyping method can find wide application in the field, optimising the trade-off between prototype fidelity, agility, and cost in the very early development stages, while also providing a viable way for service designers to empathise with target groups. Similar services from the same or other fields could benefit from the application of the VR service walkthrough method, potentially using

it to communicate their service concepts at an early point of the service design planning process.

## Conclusion

In this work, a prototyping method for service design was introduced that applies the service walkthrough concept in fully immersive VR settings. The method aims at enabling service designers to increase empathy with potential customer groups through optimising the service prototyping process to create more immersive and engaging service-simulating environments. The method addresses service journeys, and its evaluation showed that it can be useful for representing services that are still at the service concept stage.

The case study on tourism provided an ideal testbed for documenting the strengths and weaknesses of the method, revealing that it can communicate the service concept in an engaging and immersive way and foster constructive feedback. However, the very same immersive VR feature can pose interaction challenges for novice users, thus revealing the need for further technical adjustments.

Overall, the VR service walkthrough method performed satisfactorily, effectively balancing the trade-offs among prototype fidelity, development agility, and cost. The introduction of this VR-based service prototyping method provides an opportunity for organisations, businesses, designers, and researchers to reproduce, study, and further advance it. Hopefully, this work will further contribute to the discussion around the potential of VR in service design, which, until recently, was an under-researched field (Boletsis, Karahasanovic, et al., 2017; Jung Bae & Seong Leem, 2014).

Future work will focus on a comparative study between the service walkthrough and the VR service walkthrough methods. Furthermore, more case studies will follow in order to further document the method's efficiency in the same or similar fields and enable the formulation of robust guidelines for the method's application in various settings.

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# Service+Spatial design: Introducing the fundamentals of a transdisciplinary approach

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## Abstract

The paper is a position paper attempting to frame the foundations of an emerging topic in design research, education and practice: a transdisciplinary approach defined here as Service+Spatial design. Starting from the insights acquired by the authors through basic research and educational activities exploring the mutual influences between Spatial design and Service design, the challenge is to disclose the fundamentals of Service+Spatial design in order to set up a qualitative comparison and discussion around their relationships. The paper explores the cultural dimension of design, trying to identify and highlight common ground and differentiation to frame, support and expand the comparison between these two design disciplines. The common ground is based on the relevant converging factors that create the current landscape of design; the perspective for comparison is structured through the identified key dimensions in the different evolution of Spatial and Service design; the comparative analysis is sketched around the ongoing findings and the evidences gathered from the theoretical research and the assessed teaching framework tested.

**KEYWORDS:** design research, spatial design, design education, systemic approach, product-service systems

# Emerging positions in the design field as a common ground for S+S

## Premises

This is a position paper which aims to illustrate an emerging thought in design research and in design education and practice: linking the theoretical background and the milieu<sup>1</sup> of Spatial design with the tools and the language of Service design.<sup>2</sup>

Spatial design encounters Service design in urban planning, in the design of workplaces, retail settings, private interior spaces, public services and infrastructures. In this range of settings, spaces *host* relational entities and vice versa, services *take place* in physical environments and *determine* tangible outcomes. *What* the service designer provides has to be combined and formed but, however, they usually do not physically rearrange the physical components but only their representations (Blomkvist, Clatworthy, & Holmlid, 2016, p. 3). Although this may be understood, this is not yet an established area of practice or theory.

The focus of this position paper is not on the “objects” of the design: this is not a solution-oriented discussion but it refers to the design culture<sup>3</sup> in which the challenge emerges. The design culture encompasses the converging factors characterising the contemporary landscape of design (paragraph 1) as well as the theoretical genesis of the two disciplines (paragraphs 2, 3). Thus, the paper establishes the discussion on a transdisciplinary reflection on the key dimensions of Spatial and Service design and on a processual critical analysis (paragraphs 3, 4 and 5).

The authors are not looking for an overlapping of the two disciplines but to lay the foundations for the development of a transdisciplinary approach and to imagine alternative future developments. Disclosing the fundamentals of Service+Spatial design (S+S) means, for the authors, defining supportive structures to design with an S+S approach. Services are, in fact, distributed in time and space (Kimbrell, 2009, p. 3) and are introduced in a physical and social setting (Holmlid, 2009, p. 5). Assuming that, how can a transdisciplinary dialogue between Spatial design – with a longer history rooted in Interior Architecture – and Service design – with its holistic thought – can expand the comparison between design orders (Buchanan, 2001)?

Two premises are fundamental: first, the reflection here includes the evolution of the design research and education, encompassing the idea that the current shifts in the social, economic and professional realms inevitably affect design practice, with a phenomenological point of view (Bertola & Manzini, 2004). Second, the emerging thought is not sustained by a specific literature review on the topic since, as presented below, the subject is neither yet investigated in purely academic terms nor in the field of application.

The S+S discourse has been elaborated in the context of university research by the authors and it was the same teaching and research activity that brought this latent need to the fore. Therefore, the paper will present the emerging position by looking at the theoretical issues common to both disciplines, all of which are strongly grounded in the design discipline evolution over the past seventy years.

## Key trend indicators defining the current landscape of design

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<sup>1</sup> [Product] Milieu: “the aggregate of objects, activities, services and environments that fills the lifeworld [where] activities, services, and environments [are designated] as products in order to maintain the unity of the product milieu as a single field of activity and to make greater connections among its diverse components” (Margolin in Buchanan & Margolin, 1995, p. 122). See also: (Margolin, 1988).

<sup>2</sup> In this paper, the authors use “Service design” as well as “Spatial design”: to define a field of application of the discipline. Indeed, they share the concept behind the “Design for Service” definition: (Meroni & Sangiorgi, 2011), (Manzini in Meroni & Sangiorgi, 2011), (Sangiorgi, 2011), (Kimbrell, 2011).

<sup>3</sup> “Design culture” is the English translation of the Italian “Cultura del progetto”, where *progetto* has a broader meaning.

The current landscape of design is defined by changes that are connected to the shifts concerning the contemporary world.

*“The subject matter of design is not fixed [but] it is constantly undergoing [, it concerns] matters that admit of alternative resolutions [and] the range of products or areas where design thinking may be applied continues to expand” (Buchanan in Buchanan & Margolin, 1995, p. 25).*

The authors share the belief that design has no defined object but, rather, has a multi-faceted subject matter since it deals with continuously evolving and expanding contexts, and with possible worlds. The design object is shifting away from fixed and defined entities (technology-centred) to processes and complex living entities (human-centred), i.e. to a systemic view and impact on the cultural, social, economic and physical dimensions (Buchanan, 1992), (Krippendorff, 2005), (Brown, 2009), (Manzini, 2015). That is why the discussion of the main issues of the contemporary shifts is considered below as major points in framing the emerging S+S design approach: the design discipline deals with the project as a solution for the physical world as well as the added cultural value it carries in the socio-cultural world (Manzini, 2016, p. 55). All these shifts have an impact on the design research and practice in terms of approaches, languages and methodologies with which to tackle them: if the designer relates to the system, systemic shifts become fundamental in our discourse.

Converging factors characterising the contemporary landscape of design:

- The alignment and interdependency of local and global processes.

The diffusion of new ICTs gives an added meaning to the trans-faceted context and the city is still the place where contemporary issues are revealed. As Castells (1996) and Sassen (2004) (2011) state, new ICTs have enabled local actors to become part of global networks, overcoming physical proximity in a move towards transnational spaces, and networks of global cities made up of process and flow instead of places. This shift has enhanced a fertile context for innovation at the grassroots level, having an impact on the infrastructural level and turning into definitive structured actions, entrepreneurial projects and institutional processes (De Rosa & Mazzeo, 2018). Thanks to the ripple effect of the “infrastructuring process” (Star & Ruhleder, 1996; (Björgvinsson, Ehn, & Hillgren, 2010) Hillgren, Seravalli & Emilson, 2011; Van Reusel, 2016), this ongoing alignment between levels – global into local and vice versa – has generated favourable conditions for innovative models to fit and to operate in this context. Furthermore, there is an urgent need for designers to play an active role in addressing the wicked problems scattered among these distributed but resilient systems (Manzini, 2015, pp. 17–18).

- The impact of collaborative models on the regulatory system.

The formation of transnational identities and communities advocates for the development of collaborative models and consumption networks with the resulting impact on the regulatory system and on economic growth. This aspect is clearly connected to technological innovation, and to transnational networks and flows, and contributes to the growth of innovative (large-scale as well as small-scale) models and, thus, of innovative structures. The complexity of this branching of shifts into economic, societal and structural systems demonstrates that current changes have already grown into place and have become accessible and understandable to more people. That doesn't mean that the contemporary human-constructed systems are simpler; instead their complexity gains in resiliency since it is continuously dependant on components and their relationships changing constantly; resiliency has become constitutive.

*“Modern society is now beginning to see — sometimes painfully — that the most critical challenges we face are also the ones which are most interconnected or systemic in nature. [...] By expanding our understanding of systemic problems, we can better appreciate the principles that govern them and the risks they pose to society” (Boyer, Cook, & Steinberg, 2011, p. 19).*

- Towards transdisciplinarity.

The shift to a global, information-based economy and society is asking design to be a “multidisciplinary, committed to conceptualisation, configuration, and implementation of meaningful social environments, products, services, systems and brands” (Muratovski, 2010, p. 381). This opens the way to a merged-knowledge approach, enabling design practitioners to deal with the whole system of relationships within a *product milieu*. As a field that is constantly evolving, design requires a transition from an approach based on disciplines to an approach based on disciplinary skills, some of which are outside the field of design. While design practice requires designers to deal with multidisciplinary, design education had gone through a long process of creating silos – an understandable transformation of the discipline itself. Design research needs to take a concrete step towards transdisciplinary research (Muratovski, 2011), which means being interdisciplinary while being able to cross borders.<sup>4</sup> In the past decade, in fact, there has been an inverse process: design education has moved towards a transdisciplinary approach.

The authors don’t claim that the design discipline has all the means to govern, deal with and solve such complexity; indeed, they believe that designers are becoming more and more involved in multi-faceted milieus, which can include: the development of innovation in the public sector; the reframing of business models; the creation of collaborative solutions or of innovative managerial solutions; the development of new spatial orders and processes in the contemporary ‘fluid’ city. Regardless of the domain, a specific transdisciplinary approach must be designed to break the boundaries and expand the approaches.

After having briefly presented some of the more relevant key aspects of the emerging position in the design field, the authors will now focus on the specific framework of the Spatial Design discipline and its emerging hybridisation and crosspollination with Service Design: an important segment of the current paradigm shift into transdisciplinary research.

## Informed opinion and experiences: the authors’ context

The authors are part of the Polimi Desis Lab ([www.desis.polimi.it](http://www.desis.polimi.it)), a research team of the Design Department of Politecnico di Milano, which is part of the worldwide DESIS Network (Design for Social Innovation and Sustainability, [www.desisnetwork.org](http://www.desisnetwork.org)) with Design Labs based in more than forty international design schools and design-oriented universities. The Lab involves a group of researchers adopting a strategic and systemic approach to design, particularly focused on design for service and spatial design, alongside contributions from strategic design, user-centred-design, design for territory, communication, economics, planning and sociology.

The authors run research projects at local, national and international levels and often combine their research with several educational programmes and courses, being part of the faculty of the School of Design in the Interior design (later called Interior and Spatial design) and in the PSSD master programme, with a design studio testing the S+S approach in Spatial design and in Service design courses. The relationship between theory and practice is studied and practiced by this research group on two levels: at the researcher level by avoiding an arbitrary division between research and didactics, which becomes a field of experimentation for topics and methodologies in design education, and which nourishes the very development of theoretical research; and at the didactics level itself, where the link between theory, research and practice is taught.

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<sup>4</sup> The authors refer to the notions of hierarchy of increased complexity from multi-, to cross- and to inter-disciplinarity, theorised by Jantsch, E. (1972). *Technological Planning and Social Futures*, Associated Business Programmes Ltd, London.

## Spatial and Service design: a qualitative comparison

Spatial design explores the user experience in spaces, which deals with their transformations, perceptions, and actions and interactions that take place there, and the experience of passing through the space. Nevertheless, as Andrea Branzi has often stated, spatial design has not yet been investigated as an autonomous disciplinary corpus. He places it between the history of architecture and the history of industrial design (Branzi in Crespi, 2013), and between “project” – as a “programmatic action”<sup>5</sup> (Crespi, 2013) – and “non-project”, made of continuous human actions, memories, rituals and symbolic relationships in the spaces. Even more precisely, Branzi states that the discipline of architecture fails to identify itself not only as a figurative act but also as an abstract and immaterial reality, embodying the wicked problems of the contemporary condition, of services, computer networks, product systems, environmental components, commercial information and perceptual structures (Branzi, 2006). Spatial design has, therefore, an elusive and multidisciplinary nature, which is the core of its foundation and genesis. Furthermore, it frequently encounters the redefinition of contemporary life’s parameters and shows the new configurations of a changing society (Branzi, 2006): the physical realm enables interactions among people and enhances a sense of shared ownership and the engagement of people.

Services are complex and relational entities (Sangiorgi, 2011). They are systems that involve many different influential factors and deal with strategies and structures, processes and interactions. Services are co-created values (Vargo, Maglio, & Akaka, 2008), human-centred, and are temporal in their nature (Holmlid, 2009) since they are distributed in time and space (Kimbell, 2009). Service design is the design thinking contribution in the processes, systems and practices of service, aimed at providing a holistic approach in order to get an understanding of the system and of the actors and factors within the system (Mager & Sung, 2011). Service design is the design of the area where the interactions between the service and the user take place (Meroni & Sangiorgi, 2011, p. 42, from the Elena Pacenti’s perspective), meaning that they always assume a social, interactive and relational dimension<sup>6</sup>. A service designer can

*“visualise, express and choreograph what other people can’t see, envisage solutions that do not yet exist, observe and interpret needs and behaviours and transform them into possible service futures, and express and evaluate, in the language of experiences, the quality of design” (Service Design Network, 2005).*

Service design is essential to establish the service evidence, when intangibility is visualised in terms of physical evidence (Stickdorn, Schneider, Andrews, & Lawrence, 2011); thus, services incorporate tangible and intangible components (Meroni & Sangiorgi, 2011)(Sangiorgi, 2011).

Examining the basics of the two disciplines, the following key dimensions lay the theoretical foundations of the challenge. It is intended to demonstrate that Service and Spatial design approach are complementary: thus, to validate the transdisciplinary approach introduced here. Spatial and Service design deal with a chain of dependencies between the pinpointed qualitative dimensions<sup>7</sup> that follow and, for each dimension, one aspect is related to Spatial

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<sup>5</sup> A strict, deterministic and finite methodological process.

<sup>6</sup> See also the IHIP (Intangibility, Heterogeneity, Inseparability and Perishability) framework in Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *The Journal of Marketing*, 41–50. – and further development in Meroni, A., & Sangiorgi, D. (2011). *Design for services*. Gower Publishing, Ltd.

<sup>7</sup> The comparison of key dimensions and on design orders mentioned in this position paper establishes a direct connection to previous articles on relationships among design disciplines:  
- Edeholt, H., & Löwgren, J. (2003). Industrial design in a post-industrial society: A framework for understanding the relationship between industrial design and interaction design. In *Proceedings of the 5th Conference of the European Academy of Design, Barcelona*.



design and the other to Service design. Each aspect is explained and the main references of it are quoted in the footnotes.

- ENVIRONMENTAL DIMENSION

**Spatial design: dialectical<sup>8</sup>**

Spatial design identifies, gives meaning and shapes places. The physical experience with the context is amplified by the endless dialectic of who is inhabiting the space that projects memories and values. Furthermore, the physical realm enables interactions among people and enhances a sense of shared ownership and the engagement of people.

> *Spatial design designs places with the symbolic added component.*

**Service design: unfolded<sup>9</sup>**

Services take place in physical environments and service design establishes - but do not arranges - the service evidence as physical evidence, which shapes the experience of services.

> *Service design designs service evidences with the sequential added component.*

- TEMPORAL DIMENSION

**Spatial design: abstract (endless time of the memory)<sup>10</sup>**

Spatial design: the place encloses and contains the time of the human experience, occurring in a space.

> *Spatial design designs places with a timeless component.*

**Service design: experiential (limited time of the use)<sup>11</sup>**

Services exist only when the relationship takes place (designed touchpoint).

Otherwise, they fall back into non-existence. At the same time, the Service design process deals with pre-/during-/post-service phases that visualise the service as a sequence of interrelated actions.

> *Service design designs relationships with a defined duration (hic et nunc).*

- SOCIAL DIMENSION

**Spatial design: semiotic<sup>12</sup>**

Spatial design explores the user experience in spaces. The figurative act embodies the wicked problems of the contemporary condition and shows the new configurations of a changing society. In fact, places are a relational condition made up of cultural and ritual relationships.

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- Holmlid, S. (2009). Interaction design and service design: Expanding a comparison of design disciplines. *Nordes*, (2).

This elaboration needs further exploration from the authors and will follow this work with further publications on the topic.

<sup>8</sup> - Bachelard, G. (1957). *The poetics of space*.

Heidegger, M. (1971). Building dwelling thinking. *Poetry, Language, Thought*, 154.

Branzi, A. (2006). *Weak and Diffuse Modernity: The World of Projects at the beginning of the 21st Century*. Skira.

<sup>9</sup> - Stickdorn, M., Schneider, J., Andrews, K., & Lawrence, A. (2011). *This is service design thinking: Basics, tools, cases*. Wiley Hoboken, NJ.

Blomkvist, J., Clatworthy, S., & Holmlid, S. (2016). Ways of seeing the design material of service. In *ServDes. 2016* (pp. 1–13). Linköping University Electronic Press.

<sup>10</sup> - Bachelard, G. (1957). *The poetics of space*.

- Norberg-Schulz, C. (1980). *Genius loci: Towards a phenomenology of architecture*. Rizzoli.

- Crespi, L. (2013). *Da spazio nasce spazio. L'interior design nella trasformazione degli ambienti contemporanei*. Milano: Postmediabooks. [*Space is born from space. The interior design discipline for the transformation of contemporary spaces.*]

<sup>11</sup> - Stickdorn, M., Schneider, J., Andrews, K., & Lawrence, A. (2011). *This is service design thinking: Basics, tools, cases*. Wiley Hoboken, NJ.

- Blomkvist, J., Clatworthy, S., & Holmlid, S. (2016). Ways of seeing the design material of service. In *ServDes. 2016* (pp. 1–13). Linköping University Electronic Press.

<sup>12</sup> - Branzi, A. (2006). *Weak and Diffuse Modernity: The World of Projects at the beginning of the 21st Century*. Skira.

- Crespi, L. (2013). *Da spazio nasce spazio. L'interior design nella trasformazione degli ambienti contemporanei*. Milano: Postmediabooks. [*Space is born from space. The interior design discipline for the transformation of contemporary spaces.*]

> *Spatial design designs through a figurative act that gives sense.*

### Service design: relational<sup>13</sup>

Services are complex and relational entities and service design deals with the area where the interactions between the service and the user take place.

> *Service design designs relational entities through an experiential act.*

Through this comparison, the authors identify the complementary nature of Service design and Spatial design, towards a S+S approach embedding:

- the dialectic nature (between the user and the environment and among the users within the environment);
- the archetypical nature (embedded in the existential act);
- the phenomenological nature.

	SPATIAL DESIGN	SERVICE DESIGN	S+S NATURE
ENVIRONMENTAL DIMENSION	<p><u><b>dialectical</b></u></p> <p>The physical experience is amplified by the endless dialectic of who is inhabiting the space that projects memories and values.</p> <p>&gt; <i>Spatial design designs places with the symbolic added component.</i></p>	<p><u><b>unfolded</b></u></p> <p>It establishes - but do not arranges - the physical evidence of services, which shapes its experience.</p> <p>&gt; <i>Service design designs service evidences with the sequential added component.</i></p>	<p><u>DIALECTIC</u></p> <p><u>ARCHETYPICAL</u></p> <p><u>PHENOMENOLOGICAL</u></p>
TEMPORAL DIMENSION	<p><u><b>abstract</b></u> (endless time of the memory)</p> <p>The place encloses and contains the time of the human experience, occurring in a space.</p> <p>&gt; <i>Spatial design designs places with a timeless component.</i></p>	<p><u><b>experiential</b></u> (limited time of the use)</p> <p>Service exists only when the relationship takes place, or, they fall back into non-existence. Also, it deals with pre-/during-/post- phases: service as a sequence of interrelated actions.</p> <p>&gt; <i>Service design designs relationships with a defined duration (hic et nunc).</i></p>	
SOCIAL DIMENSION	<p><u><b>semiotic</b></u></p> <p>The figurative act embodies the contemporary wicked problems. In fact, places are a relational condition made up of cultural and ritual relationships.</p> <p>&gt; <i>Spatial design designs symbolic places through a figurative act.</i></p>	<p><u><b>relational</b></u></p> <p>Services are complex and relational entities and service design deals with the area where the interactions between the service and the user take place.</p> <p>&gt; <i>Service design designs relational entities through an experiential act.</i></p>	

Figure 1 – The Spatial and Service design dimensions

## The systemic approach in the discipline of Spatial Design and its relationship with the discipline of Service Design

It is necessary to introduce the relation between spatial design and system theory, since a spatial context is always integrated in a complex system and this will help in understanding our challenge.

A system may be described as a complex of interacting components together with the relationships among them; the structure is the constitutive aspect of a system and the relationships make the system significantly useful (Ciribini, 1984, p. 50). To be able to understand the link between spatial design and system theory, we must take a step back to what happened in Italy after the Second World War, when a debate in the educational process about the role of architects in rebuilding cities resulted in an original point of view about the role of the technology of architecture, in that it needed transforming. Thus, according to the Italian scientific community, this was influenced by considering the

<sup>13</sup> - Meroni, A., & Sangiorgi, D. (2011). *Design for services*. Gower Publishing, Ltd.

- Kimbell, L. (2009). The turn to service design. *Design and Creativity: Policy, Management and Practice*, 157–173.

technical elements as objects with which to compose the building system. In order to begin, it required a credible policy of industrial and technological (re)organisation (cfr. Giulio Minoletti, Alberto Rosselli, Marco Zanuso). Theorists and designers questioned about how the university and the university teaching could assimilate the new data of the techno-scientific industry, looking for a crucial connection of the academy with the field of practice.<sup>14</sup> Rooted in this debate, a need emerged throughout the 70s to include the system approach to the design process, thus bringing to the meta-design approach. In 1984, Giuseppe Ciribini spoke about the management of the design process as “an adaptive dynamic system”: as a sequence of actions of the programmatic action of the designer (Collina & Bertola, 2005). Pushing forward that discussion today, meta-design is not only the sequence of operations of a scientific methodological process for exhaustively listing functions, purposes, requirements, constraints and any other factor that can drive the project but, it must also deal with an abductive process of inquiry. The design activity must surrender to an integral control of both the process and the output since the project embodies the unexpected as a constitutive element (Crespi, 2013). Hence, the design activity progresses through being systemic and strategic into the techno-physical system and by acquiring provisional and probabilistic components of the human and socio-cultural environment through an iterative process. Thus, the challenge of the authors is to formulate an S+S emerging discipline since it is perceived that:

- Service design lacked a perspective on the design of the cultural and ritual relationship with and within the physical environment of human beings as part of the physical experience with the context, while it does have a strong methodological quality towards human-centred design;
- Spatial design can find today in the strategic and resilient approach of service - needed to tackle the complex socio-technical system (Norman & Stappers, 2015a) - that approach which expands the design and value of the places and integrates the service soft components;
- Both Service and Spatial designs contained a complementary systemic approach towards the contemporary distributed and complex context.

Through the understanding of the fundamentals of the two disciplines, the authors aim to define new ways to approach the design of a space, assuming that:

- Services take place in spaces;
- Services generate spaces.

Therefore, the guiding questions are:

- How can spaces influence, generate, be set for and used through service?
- How can services influence, generate, be set for and used through space?
- How can service design processes add value in spatial projects and vice versa?

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<sup>14</sup> Cfr. “L’insegnamento dell’architettura nelle università italiane” [Architecture Education in Italian Universities], edited by Ludovico Quaroni 1959-60).

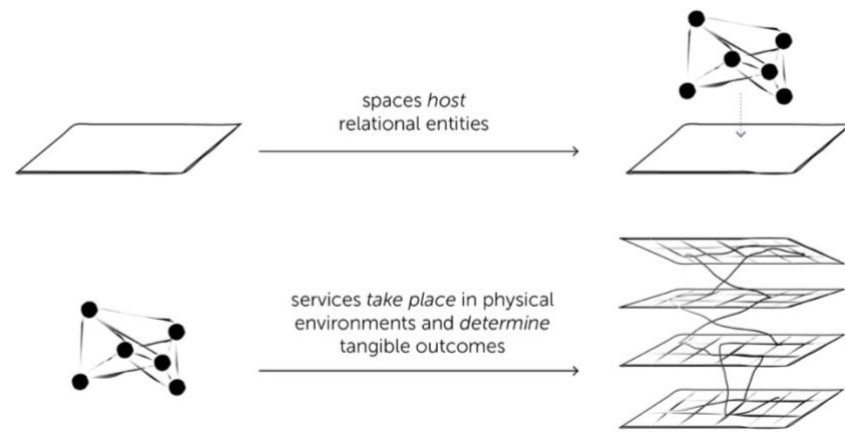


Figure 2 – Diagram by the authors

The ongoing research towards the expanding of the comparison of the disciplines is, therefore, established on a transdisciplinary approach. The approach is not multidisciplinary – where no direct cooperation among disciplines is expected; nor is it cross-disciplinary – where one discipline should support the other within itself; and neither is it interdisciplinary – where direct cooperation exists but it doesn't expect the borders of the different disciplines to be crossed.

### The origin and the aim of the emerging position

The literature review revealed that this topic has not yet been explored. Many publications explore the interdisciplinary nature of service design: Stickdorn and Schneider, in their textbook on service design thinking (2011), explore the basics, tools and cases of the discipline and, especially, its relationships with product, graphic, interaction, strategic, social, management and ethnographic designs. Spatial and environmental components are often underlying and cited,<sup>15</sup> but never explicitly researched.

In other European universities S+S experimentation has been done on teaching activities, but not at the research in design level. This is the case of:

- Thomas More University College in Mechelen (Belgium) with a brand-new programme in “Interior & Service Design” (final year of the Bachelor and post-graduate year of specialisation) where “graduates are equipped with the knowledge and skills needed to design objects, furniture and spaces in order to support socially oriented design projects, developing their knowledge of user-centred experiences, service contexts and research for design”;<sup>16</sup>
- the Master's programme in Product and Spatial Design at the Aalto University School of Arts, Design and Architecture; in 2015, a call for lecturer in Spatial and Service design was launched by the Design Department but unfortunately the position and the role no longer exists. At the Aalto School of Architecture, a research project (“School as a Service”) is ongoing, which connects Service design with an architectural approach close to urbanism; in fact, the project is exploring the service nature in the offer delivered more than in the process development, and the architectural approach is far from the spatial one previously visible;

<sup>15</sup> “[...] although services are intangible, they take place in a physical environment, using physical artefacts and do, in most instances, generate some form of physical outcome. Subconsciously, customers perceive this environment with all their senses. We see, hear, smell, touch, and taste the physical manifestation of services”, p.44

<sup>16</sup> <http://www.thomasmore.be/about/interior-service-design>

- in the programme of Environmental Design at Tongji University in Shanghai, due to the double degree programme with the PSSD classes of the Politecnico di Milano School of Design, approaches and tools of Service design have been applied;
- the Middlesex University in London where, although there is no established programme on service design, they have required expertise from our research group during some teaching activities in the BA in Interior Architecture (2017).

**Finding 1:** The absence of a literature review and the insignificant number of courses and experimentations on this topic highlight that in-depth and rigorous research is needed to develop models, methods and theories about S+S. An adoption of this approach requires better understanding of its practices, methods to assess value and methods to approach the subject matters in order to break the silos of design approaches and to add a diverse perspective.

**Finding 2:** Service design and Spatial Service design all share the development of the design culture towards a direct and integrated cooperation between disciplines and towards a balance between socio-cultural and techno-physical environments.

## The emerging position: statements

As mentioned in the premises, the paper's challenge is to disclose the fundamentals of Service+Spatial design. The authors are not looking for an overlapping of the two disciplines but to the creation of a transdisciplinary approach, considering the current paradigms (paragraph 1) and imagining alternative future developments. Disclosing the fundamentals means defining principles and guidelines to the approach, and to design with an S+S approach.

The first main assumptions are:

- Service design and Spatial design share similar processes but speak different languages.  
On one side, this is justifiable since “service design is an interdisciplinary approach that combines different methods and tools from various disciplines” (Stickdorn et al., 2011, p. 29) which are not necessarily borrowed from design. On the other side, Service design barely encounters Spatial design since it arose in the ‘90s growing economy of the service sector “in clear contrast to the then dominant practices and cultures of design, which still focused on the physical and tangible output of the traditional industrial sectors” (Meroni & Sangiorgi, 2011, p. 9) with contributions from management, business and process engineering. Within that landscape, Spatial design appears to only be connected to its architectural roots and tangible sides, while its systemic and meta-design approach didn't find a way into the interdisciplinary nature of service;
- An S+S approach can expand the comparison between design orders (Buchanan, 2001)<sup>17</sup> and thus overcome the disciplinary borders. If “services are complex, hybrid artefacts [...] made up of things – places and systems of communication and interaction – but also of human beings and their organisations” (Manzini in Meroni & Sangiorgi, 2011, p. 1), it is undeniable that spaces are also part of the service system. They share the attention on actions and interactions, but with a different point of view. In fact, the places are not spaces that are inside something, but a relational condition (Crespi, 2013). That is why the design of public and private spaces meets the relational nature of services, in a mutual influence that affects the creation of meaningful social environments (De Rosa in Camocini & Fassi, 2017)

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<sup>17</sup> Buchanan (2001) speaks about four orders of design identified by their object and the corresponding design disciplines: signs (graphic design), products (industrial design), actions (interaction design) and thought (environmental design).

However, as stated, the lack of exploration of this relationship limits the role of space in the service approach to “where something happens” with no further additions instead of being a component of the system to be designed.

The connection with the space underlies the Service design approach; the authors propose to systematically integrate it in the whole design process as part of the PSS process where required.

**Finding 3:** Adding the Service components to Spatial design means expanding the systemic view: Service’s approach and tools encompass the human-centred design.

### Framing the connection with PSS

By calling for an integrated approach between Spatial and Service designs, the discussion has been established around the rapid change in contemporary society, demanding new solutions and a systemic view that includes a wider network of actors (social bodies, enterprises, companies, institutions). Furthermore, the theoretical reflection pays close attention to tangibility and intangibility, both in terms of the object and the relationship. We can say that there is a clear connection with the Product Service System (PSS) dimension. A PSS is defined as a system of products, services, supporting networks and infrastructure designed to be competitive, user-centred and sustainable (Mont, 2002). The PSS dimension represents the shift from a purely tangible dominant practice to an integrated design strategy oriented to design solutions, where the connection between products and services is not casual but conceived from the very beginning (Meroni, 2008).

For the authors, and within the PSS curricula at Politecnico di Milano, the tangible side includes not only products in the traditional sense but also spaces.

The actual predominance of the soft components in PSS requires coordination within the System design approach for integrated inclusion of the spatial expertise.

Goedkoop et al. (1999) define PSS as a “product(s) and service(s) combined in a system to deliver required user functionality in a way that reduces the impact on the environment”, where the hardware (product component) + the software (service component) are combined in a systemic logic; all these parts are inseparable in order to deliver a required user functionality in a way that reduces the impact on the environment.

The authors transcend the hardware/software antinomy and for the clearer tangible/intangible one.

- Tangible (product): extension of the traditional functionality of a product by incorporating additional services;
- Intangible (service): an activity (work) done for others with an economic value often done on a commercial basis
- System: a collection of elements including their relations.

(Baines et al., 2007, p. 1545, paraphrasing Goedkoop)<sup>18</sup>.

As stated above, the tangible, intangible and systemic components of the Spatial design have been illustrated as:

- Tangible: form, structure and functional infrastructure;
- Intangible: light, memories, rituals and symbolic relationships;
- System: the system of the technological infrastructure, issues of the contemporary condition, computer networks, product systems, environmental components, commercial information, the social value of meaningful social environments.

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<sup>18</sup> “Tangible” and “Intangible” terms have been introduced instead of “hardware” and “software” as for the original source.

As Morelli states (2002, p. 6), the extension of a design activity to incorporate services requires the use of new methodological tools to address PSS. Since PSS includes acquiring knowledge about the end users and may include the engagement of them in all/some phases of the design process, a PSS must be designed, made and delivered on a case-by-case basis and viewed from the clients' perspective (Baines et al., 2007, p. 1549). This perspective is explored through processes of co-creation and co-design that are frequently discussed in Service design and which found their origins in strategies of inquiry in the Social Sciences, e.g. Participatory Action Research (PAR).<sup>19</sup> Due to these premises, the authors assume that, in order to understand the identity of a territory/place within the Spatial design discipline, these processes have to be taken into account. In fact, the current context is much more complex and flows of information are much faster so that, unlike before, the identity of a place is less fixed, constantly changing and has non-permanent qualities; and so, to address these components, a contextual methodology is needed.

The comparison, based on tangibility and intangibility, highlights the extension of the relationship between Service design and PSS where the physical environment is part of its tangible milieu, thus expanding the relationship to Spatial design.

**Finding 4:** The authors identify how designing for Spatial design with the user implicates actions and interactions (intangible aspects) with and within the environment. These actions and interactions are part of the Service design development process and Spatial design can benefit from this consolidated methodological development. With a S+S approach, the service designer side can influence the material reality of services and the spatial designer side can enhance its human-centred side through a methodological discourse.

**Finding 5:** The authors identify that an integrated design of all components could avoid the Spatial design development being merely a frame for Service design but being an integrated part of it.

## Collecting evidences: the work in progress

The research is under way and, as stated above, it has been developed through teaching experimentations in real contexts – through the application of Grounded Theory and Participatory Action Research methodologies, Co-creation and Co-design tools and Prototyping actions – that still need further analysis. In these research experimentations, design tools hybridisation has progressively conversed with the design process itself, becoming process codes. In fact, the authors don't believe that a systemic and integrated approach works by applying tools and toolkits across design domains (Norman & Stappers, 2015b, p. 102). This process has been fundamental in informing reflection and in testing tools typical of Service design with the design practice of Spatial design.

The teaching experimentations followed the following S+S disciplinary process of integration:<sup>20</sup>

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<sup>19</sup> Participatory processes had little impact on service development, while they have been strongly assimilated by service design because of its co-created nature. See:

- Holmlid, S. (2012). Participative; co-operative; emancipatory: From participatory design to service design (pp. 105–118). Presented at the Conference Proceedings ServDes. 2009; DeThinking Service; ReThinking Design; Oslo Norway 24-26 November 2009, Linköping University Electronic Press.

- Gilmore, T., Krantz, J., & Ramirez, R. (1986). Action-based modes of inquiry and the host-researcher relationship. *Consultation: An International Journal*.

<sup>20</sup> Field experimentation has been disseminated in the following books and papers:

- Camocini, B., & Fassi, D. (Eds.). (2017). *In the Neighbourhood. Spatial Design and Urban Activation*. Franco Angeli.  
 - Fassi, D., Rebaglio, A., & De Rosa, A. (2017). Designing a cultural event as an inclusive educational activity. *The Design Journal*, 20(sup1), S988–S999.

- Calvo, M., & De Rosa, A. (2017). Design for social sustainability. A reflection on the role of the physical realm in facilitating community co-design. *The Design Journal*, 20(sup1), S1705–S1724.



- design processes with a *multidisciplinary approach*: tools and methods of the Service design discipline informed the Spatial design development.
- design processes with a *crossdisciplinary approach*: tools and methods of the Service design discipline supported the Spatial design development.
- design processes with an *interdisciplinary approach*: tools and methods of the Service design discipline merged with tools and methods of the Spatial design discipline to achieve S+S solutions.

TEACHING EXPERIMENTATIONS						
	CAMPUS WITHOUT BORDERS	"ARNOLD" ART IN NOLO SOCIAL DISTRICT	#NIGHTCLUBBING: CONNECTING THE COMMUNITY	OPPORTUNITIES BY DESIGN FOR RIO DE JANEIRO	PERMA-PODS	DESIGN+EAT = SPACES
S+S disciplinary process of integration	<i>multidisciplinary</i>	<i>crossdisciplinary</i>	<i>crossdisciplinary</i>	<i>interdisciplinary</i>	<i>interdisciplinary</i>	<i>interdisciplinary</i>
A.Y.	2015/16	2016/17	2016/17	2016/17	2016/17	2017/18
Teaching staff	Davide Fassi Laura Galluzzo Anna Meroni Silvia Girardi	Davide Fassi Laura Galluzzo Anna Meroni Xiaocun Zhu	Laura Galluzzo Francesca Murialdo	Annalinda De Rosa Carla Cipolla	Annalinda De Rosa Mary Polites Davide Fassi	Davide Fassi Laura Galluzzo Anna Meroni Anke Strittmatter
Course / University	Final Design Studio / School of Design, Politecnico di Milano	Final Design Studio / School of Design, Politecnico di Milano	Interior Architecture 2 Studio / Middlesex University, London	Design Studio / Universidade Federal do Rio de Janeiro	Co-creation Studio / College of Design & Innovation of Tongji University, Shanghai	Final Design Studio / School of Design, Politecnico di Milano
Beneficiaries	BSc Interior Design	MSc Interior Design	BA Interior Architecture	MSc Management Engineering	MA Industrial, Service, Environmental Design, Digital Media	MSc Interior and Spatial Design

Figure 3 – Diagram of the teaching activities run to collect evidences and test findings

## Conclusions

The reflection presented here considers the current paradigm of the two disciplines and is linked to an ongoing research activity based on the development and application of knowledge through teaching and research project experimentations.

Since this is a position paper, the authors aim to present the ongoing theoretical framework and to state the emerging position. A valid number of experimentations in research projects and didactic activities have been developed to test and validate the ongoing reflections on the S+S transdisciplinary approach. The intention of going beyond the borders of the disciplines means the definition of supportive structures to design with a S+S approach. These validations need further refinement to be presented together with a more defined and developed theoretical reflection.

- Fassi, D., Galluzzo, L., & De Rosa, A. (2016). CampUS: co-designing spaces for urban agriculture with local communities. *PAD*, 13, 254–278.

- Fassi, D., Galluzzo, L., & De Rosa, A. (2016). CampUS: How the Co-design Approach Can Support the Social Innovation in Urban Context. In *Advances in Design for Inclusion* (pp. 609–621). Springer.

- Galluzzo, L., & De Rosa, A. (2016). How educational processes and social entrepreneurship can support an urban regeneration in Milan. In *4th International Scientific Conference A.L.I.C.E. 2016, GoingGreenGlobal International Design Week, Sustainable Design Paradigms* (pp. 72–77). Ljubljana: Faculty of Design, an independent higher education institute, Associated member of the University of Primorska.



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# Space and service design into educational practice

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## Abstract

Contemporary global challenges such as social inequalities, ageing, food crises, nature disasters have encouraged designers worldwide to scrutinise their new role in these matters and to respond with design solutions. Through purposeful sampling, this paper describes how an interior design course has shifted from a more traditional spatial emphasis in the design projects to an approach focalizing on social-cultural challenges and therefore equally addressing the intangible context of design projects.

In the new pedagogical strategy the design of spaces goes hand-in-hand with the design of public services and customer experiences. The educational approach leads to new design skills, knowledge and attitudes in the interior design discipline.

Finally, the paper illustrates these insights by the live project Design for Education. Aspirant interior designers respond to the challenge of creating new learning and teaching environments for socially disadvantaged districts and interact with stakeholders in order to develop better user experiences.

**KEYWORDS:** service design, interior design, educational approach, space and service design, design challenges

## Introduction

Worldwide phenomena over the past decades have had an important influence on society. Contemporary global challenges such as social inequalities, influx of refugees, religion conflicts, global warming and nature disasters, globalization, relocation of industrial production to developing countries and economic crises, ageing, threatening new diseases and food crises encouraged designers worldwide to look at their (new) role in these matters and to respond with design thinking and design solutions (Boyer, Cook & Steinberg, 2011; IDEO, 2015; Curedale, 2017).

Consequently, all over the world new design approaches and disciplines have emerged such as social design, user-centred design, co-design, multidisciplinary design, strategic design, interaction design, service design. All these concepts are related to each other and can be applied to and combined with traditional disciplines in design: product design, graphic design,

furniture design, interior design, architecture, etc. While traditional design disciplines aim at designing tangible products (graphics, objects, spaces, buildings), the emerging disciplines and approaches all share the idea that design thinking can be the basis to find solutions to contemporary challenges by designing activities and interactions too (Felix, 2011; Sanders & Stappers, 2012; Curedale, 2017).

One of the emerging design disciplines is service design. Service design was first introduced in 1991 as a design discipline at the Köln International School of Design. Only in 2001, the first Service Design office for business consultancy opened in London. In 2004, Köln International School of Design, Carnegie Mellon University, Linköpings Universitet, Politecnico di Milano and Domus Academy founded the Service Design Network in order to create an international network for service design academics and professionals. Over the past decade several design schools worldwide have acknowledged the importance of service design and the related design fields and are offering courses or course modules which address this discipline (Van Geetsom, 2016).

Although there is no consensus definition of the emerging discipline, one could describe service design as a “(marketable) set of products and services capable of jointly fulfilling a user’s need.” (Goedkoop & Van Halen, 1999; Felix, 2011)). This also involves a new mind-set where services are created from the user perspective, in a holistic and systematic way, taking time and sequencing into consideration (Stickdorn & Schneider, 2010).

When organizing a specific service there are always a set of tangible (tactile) components necessary to realize the service such as a website, a brochure, an app, a plan to provide the information, a device, a tool, an object to assist the user, a space, a room, a building to host the service. These components are also referred to as touch points. The user interacts with these appliances. A deeper understanding of how service and product/object/space interact with each other, how they can strengthen each other is subject to research for and through design (Van Geetsom, 2016).

As society and therefore design disciplines keep evolving, education needs to evolve too in order to prepare future-proof designers. Purposeful sampling methodology is used to describe a new educational setting at Thomas More University of Applied Sciences (Mechelen, Belgium) where future spatial designers are trained to design innovative and relevant intangible services and the necessary tangible spaces and objects in order to make the service work, to create better user experiences (Creswell, 2005). They focus on concrete, exciting and challenging new design contexts that contemporary interior designers and architects have to deal with.

## Space and Service Design

### **From an international project to an institutionalised approach, from social services’ demand to a new design programme**

An Interior & Service Design studio was firstly introduced in the Interior & Design department at Thomas More University of Applied Sciences in Mechelen, Belgium as a specialization track in the bachelor in Interior Design in 2014. In 2017 this design studio also evolved to a new postgraduate in Space & Service Design.

Both the specialization track in Interior Design as well as the postgraduate were established because of the growing need of society and therefore also the design work field to form interior (spatial) designers with the knowledge and skills to translate the new needs for better service spaces and service products/furniture into relevant, desirable and functional outcomes (Sanders & Stappers, 2012).

In addition, the international collaboration with other design schools made this evolution visible. In 2003, together with Leeds College of Art & Design, Thomas More initiated GIDE (Group for International Design Education). Throughout the past decade, Thomas More, together with design schools in Milan (Polimi), Dundee (DJCAD), Lugano (SUPSI), Leeds (LCAD), Magdeburg (Hochschule Magdeburg-Stendal), Slovenia (School of Design) and China (Jiangnan University) has focussed on contemporary socio-cultural design topics such as hospitable cities, sustainable transport, sustainable food consumption and production, crossing borders. Year after year, students, teachers and researchers have collaborated cross-disciplinary on these topics (Fassi et al., 2012). The GIDE semester project became a part of the curriculum of the GIDE universities. The multidisciplinary design collaboration on social innovation projects, joint research papers, multiple teacher team discussions and especially student outcomes, revealed that the design of spaces, objects, services and experiences need to go hand-in-hand in order to create holistic and sound solutions. Spatial design and service design in the GIDE projects are intertwined although this was not yet explicitly translated and embedded into the course curricula of the involved interior design institutions in contrast with the Product Service System Design course at Jiangnan University where it was made explicit in the curriculum and course title (Gong, Van Geetsom, Valsecchi & Lv, 2015).

Furthermore, student internships monitoring and systematic contacts with design enterprises revealed that more and more design offices in Belgium also shifted from conventional interior design practices to new business models and are combining traditional design assignments with service design thinking and co-creation with stakeholders.

*"Students in this specialization (Interior & Service Design) show great social awareness and put architecture and interior at the service of the end user. For our company, this attitude is very important in her search for the right balance whereby sustainability, experience, programming and TCO constantly challenge each other. " (Van Hees, J., sr interior architect, [www.ar-te.be](http://www.ar-te.be))*

However, higher academic institutions still lack the integrated approach of combining space and service design although design practice shows that they are inseparable (Felix, E., 2011).

At the same time Flemish governmental organizations and organizations which promote design and are supported by the government, such as Flanders District of Creativity and Flanders in Shape, support new disciplines and design methodologies such as service design, user-centred design and design thinking by offering design toolkits to designers, by organizing workshops for public organizations and designers and by offering a platform for future-proof designers with design exhibitions.

Yet another manifestation of change is the rise of the demand from public services in Mechelen and beyond to the Design department of Thomas More to help them with the improvement of their existing services by adapting their spaces, furniture, interiors and communications or to enhance their existing spaces by improving the service systems and experiences of the users. These organizations offer care and health environments such as elderly communities and hospitals, public spaces in the community e.g. allotments and city squares, learning spaces such as a library, nature experience spaces and school buildings. All these organizations behind the buildings face new customer expectations and needs. The concrete and ongoing demand from the local society have created the urge for a new design specialization and a new approach: Interior/Space & Service Design.

### Shifting the educational context and approach

The Interior Design course at Thomas More University of Applied Sciences was established 50 years ago. Students are traditionally taught to understand and create proportions and configurations of spaces and functions. In subjects such as design methodology, students still learn how to adequately apply the language of shapes and forms. Manufacturability, technical equipment and materialisation are key factors for a solid practice based interior design project.

Space is considered as a container and the end result of a design assignment as a finished project.

The education of designers is currently moving from the concentration on creating things towards a preoccupation with designing to serve people with their specific needs, acting in specific contexts (Sanders & Stappers, 2012). Some define it as a new discipline (Holmlid & Evenson, 2008), others as an evolving design attitude that includes a holistic approach of services from the user's perspective (Stickdorn & Schneider, 2010). Be that as it may, these new concerns and contexts entail an alternative educational approach.

Since 2014, bachelors in Interior Design at Thomas More have the choice of the five design specialization tracks in the third year of the bachelor. The study option Interior & Service Design is one of them. In this course, space is no longer considered as a container but as a touchpoint for services, supporting organisations, people and activities. The design supports a continuing use of spaces and objects, meeting the needs of all the users (Felix, 2011). The design of the space is not the end but the start of continuous interaction with people using that space. Therefore the aspirant designer should learn how to create a space as a system by identifying the services and defining the interactions between people, space, objects and communication tools. Spatial design and service design is used to create better experiences.

The conventional interior design process follows the double diamond model (British Council, 2005; Design cube, 2018). In space and service design education we combine this model with the service design approach and tools (Felix, 2011; Vezzoli, 2014; IDEO, 2015; Thoelen et al., 2015), in order to offer the students the necessary knowledge, skills and attitude. Based on the demand of real-life clients, in Interior & Service Design there is always a space, spatial object or context, or a building involved in the design process. We consider an Interior and Service System Design (ISSD) as a set of spaces, objects (e.g. furniture, communication tools) and services jointly capable of fulfilling the user's need.

The following table (Fig. 1) illustrates this modified approach in spatial design education at Thomas More University of Applied Sciences. Hereunder we attempt to unfold a framework consisting of a few key principles to integrate service design principles in interior design education.

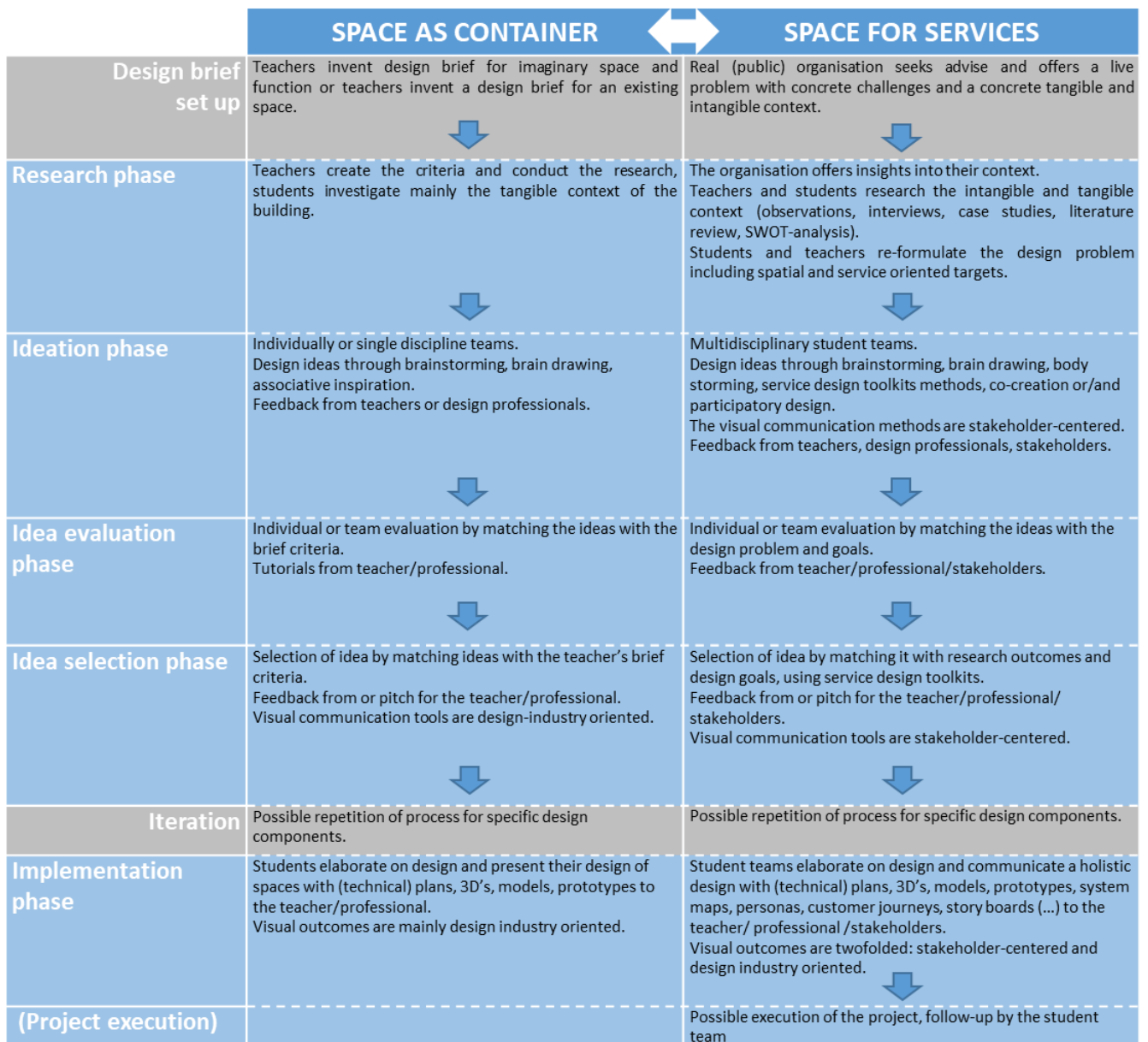


Figure 1. Evolution didactical approach from Interior Design education towards Interior & Service Design (by Van Geetsom, N.)

### Key principles of the Space & Service design course

The key values of service design formulated by Design Flanders<sup>i</sup> are the central starting point and function as the basis of the methodology: *user-centered, iterative, holistic, sequential, qualitative insights* (Thoelen et.al., 2015).

The key principle in Interior & Service Design is *user-centeredness* in order to design spaces and services which first and foremost respond to the needs of the users and stakeholders. Although design should be aesthetically pleasing, designers often dedicate more time on how interior spaces look (design as a container), rather than how it works (design as a service space). One has to reassure that the tangible spaces and objects and intangible experience are desired and user-friendly. To this end, the stakeholders and end-users are closely involved in the design process as professionals or user-experts providing the aspirant designer with information, as future-users giving feedback or/and as co-creators of design ideas and concepts (Boyer, Cook & Steinberg, 2011; Felix, 2011; Manzini, E., 2015).



The design briefs of the Interior & Service Design courses at Thomas More cover only real-life design problems of real-life projects to make it possible to involve the actual users and stakeholders in the research phase, the ideation phase, the production phase and the evaluation phase. This does not only allow the students and teachers to arrive at authentic insights, but also provides for creating desired outcomes. The aspirant designers understands that if the user experience improves and thus, (emotional) profit, efficiency develops and costs are reduced. By generating personas and by looking into the entire customer journey within the existing or future spatial context, all the users are consciously taken into account in the service design process. Interior & service designers students use also visualization techniques such as scenarios, customer journeys and story boards but immediately in the realistic, tangible spaces in order to arrive at embedded, tailor-made solutions and communication besides the traditional plans, models and 3D visuals.

The involvement of the stakeholders is essential in gaining up-to-date, accurate insight information. They can participate as trend-watchers, test panel, co-designers, usability testers, co-creators, co-owners and evaluators (Nigten, 2010). The users will have to convert the final service design into service practice. The design process is an *iterative* process. The design students will involve the knowledgeable users at different stages in the design process and start the process again for specific underlying components or sub-functions if relevant. After all, a designer is not a nurse or a teacher, nor a social care worker.

Consequently the qualitative communication between (aspirant) designer and user is also important. Therefore the student is taught to orally and visually communicate their research, ideas, concepts and design outcomes in such a way that it is clear for all the stakeholders, hence non-designers. The development of these skills is supported by subjects such as Design Communication and Intercultural Communication

Interior & Service Design is *holistic*. Each link and each step is essential in service design, as well the pre-service, as the service itself and the post-service are significant. As a consequence it is important that the touchpoints including spaces, objects and communications and the services and experiences are composed as a well-orchestrated entity. Each phase of the customer experience is supported by a logical space and the relevant objects and communication tools. Interior & service design is *sequential*.

Interior & Service Design briefs demand a thorough research of the tangible and intangible context. A subject in Applied Research for Design provides the necessary knowledge and skills. Students work in multidisciplinary research teams and conduct mainly qualitative research, using techniques such as (group) interviews, body storming, workshops with users, observations, cultural probes, experience interview toolkits and customer bull's eyes. They yield *qualitative insights* expressed in research presentations and user friendly reports, personas and giga-mapping. The often emotional background of the users cannot be uncovered by means of quantitative research methods. We tend to not train future designers to write academic papers to report on their research but to produce adequate stakeholder-centered communication tools such as comprehensive reports, self-explanatory posters and well-structured oral presentations. The stakeholders can use the visually clear reports in their turn in the communication toward users, for fund-seeking and in the realization of the project.

The following part of this paper illustrates the didactical approach by means of an example of a real-life interior & service design project at Thomas More.

# Space and service design into education practice, the case “Design for education”

## The design problem

From the requests received from social or cultural organization, public services or NGOs, three design challenges are annually chosen. In order to meet the key principles of the course, the choice of the design brief is determined by the following criteria:

- The design challenges aim at sustainably tackling contemporary socio-cultural design problems.
- The organization is willing to contribute, participate and interact before, during and after the design process.
- The project is a real demand, a real challenge.
- The client is prepared to share knowledge.
- It is likely that one of the student teams’ outcomes will be executed or that the research and outcomes will be used in tackling the design problem.

In 2016 Interior & Service Design worked for the social non-profit organization, subsidized by the Flemish government, Samenlevingsopbouw Provincie Antwerpen vzw<sup>ii</sup> (Community development Province of Antwerp asbl).

The focus of the interior & service design brief, *Design for education*, is on the design of mobile spaces/objects and services/experience in order to invite toddlers to go to primary school. In this challenge, children of vulnerable families are invited and encouraged to go to school by means of a “Play&learn-bicycle”, an attractive cargo bike which contains all kind of information about ‘going to school’ in a sort of mobile outdoor furniture and thus becomes a sort of mobile school environment in and of itself. It is an essential touch point in the service design for the parents, toddlers, teachers and social workers.

## The design context

Child poverty numbers have been growing enormously over the last decade. Recent research of OESO shows that the number of Belgian children and youngsters living below the poverty level increased from 10% in 2007 to 12,8% in 2010. In 2012 22,5% (n=4426) of the children between 0 and 19 year old in Mechelen have been living in a family with an income below the limit for financial compensation by the government.

Child poverty is shown in many dimensions: lack of material welfare, poor accommodation and living environment, problems with education and upbringing, health problems and lack of wellbeing. In terms of education, school delay is common in vulnerable families. Stumbling blocks are lack of knowledge about how schools operate, shame of low socio-economic status and problematic school experiences of the parents themselves.

Increasing the collaboration between schools and parents can positively influence toddlers’ school participation and educational opportunities during early childhood. Schools have to show interest in the parents and vice versa. Proactive support can bring the vulnerable and disadvantaged families out of isolation and can lead them to community participation (Canon Design, VS Furniture & Bruce Mau Design, 2010; Devos, & Nicaise, 2016).

The organization Samenlevingsopbouw aims at supporting these vulnerable families in giving them a voice, in offering concrete help, in looking for structural improvements. To improve educational opportunities they launched the pilot project Schoolstart in 2016 in three particular districts (Arsenaal, Oud Oefenplein and district Tervuursesteenweg) in Mechelen. They established a care network with volunteers who filled the gap in the professional assistance network. Social workers and volunteers inform and support young parents before the child actually starts at school. The main goal is to get all toddlers enrolled in early childhood

education and to enhance a good school-parent collaboration. This will ensure a better school participation. To accomplish this goal they work with house visits and offer different activities.

But how can designers contribute to this challenge of society? How can (interior) designers proactively intervene and enhance the involvement, encouragement and learning of parents and young children?

### Spatial service design result and evaluation

In 2015-2016, students of Interior & Service Design designed the new Laboratory-classroom and its' services for future early childhood teachers in collaboration with the Teacher Training Department of Thomas More Mechelen. Students conducted research and delivered relevant designs for future proof learning spaces and experiences. One of the design was executed and is currently in use.

These experiences together with research for future proof learning environments conducted by Thomas More teacher-researchers provided excellent knowledge and inspiration for the Design for Education project (Coorevits, S., Marit, K., Tutenel, P. & Van Geetsom, 2016).

The examination of the current service system of Samenlevingsopbouw Antwerpen Provincie revealed the lack of tangible touchpoints. Interior & service design student teams developed and optimized the current service design of “School start” by means of a “small mobile school”. This “mobile school” contains all the necessary information about “going to school” and triggers parents and toddlers to explore school experiences by means of educational tools. Before the start of the design process Samenlevingsopbouw vzw applied for funding for this project to BNP Parisbas Fortis Foundation and won the competition. The budget for realization of the project was 7000€.

The “mobile school” was designed by multidisciplinary and international design teams. The composition of these diverse teams was possible due to the participation of Thomas More interior & service design students and exchange students from different design disciplines such as product design, environmental design and graphic design.

Throughout the research and design phase which ran over seven weeks, starting in September 2016, teacher training students and teachers and Samenlevingsopbouw management and social care workers were involved once or twice a week. Design students conducted qualitative research via observations, interviews, literature review and case studies (Fig. 2 and 3).

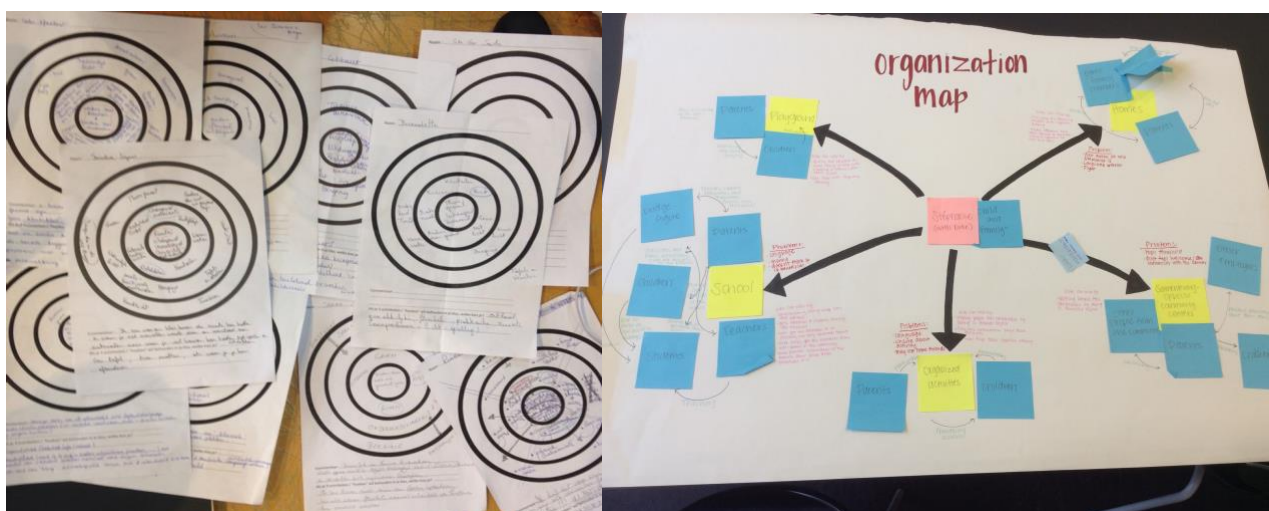


Figure 2 and 3. Research tools and research visualization tools examples (Photos: Van Geetsom, N.)

One project was chosen by the client: Playbike (Fig. 4). With this electrical cargo bike the volunteers can easily access districts of attention in Mechelen. It is an approachable touchpoint in the customer journey of parent and child. The information, tools and plays in the cargo of the Playbike reassures that parents and children get acquainted, informed, sensitized, excited and inspired about early childhood education (Fig. 5). Playbike is supported by other touchpoint such as matching folders and 1:1 scale drawings of Playbike on school buildings. The realization of the prototype fitted within the pre-set budget offered by BNP Paribas Funding. The student team of Playbike looked for a sponsor for the e-bike and collaborated with a social wood workshop ('t Houtatelier – Mechelen) for the pricing and realization of the cargo. Together with the teacher and a social care worker they supervised the realization. They tested several components of the Playbike with children. Ergonomic and technical standards for the “mobile outdoor furniture” were crucial.

The prototype of the Playbike (Fig. 4 and 5.) was put into use in May 2017.



Figure 4 and 5. Playbike design: Tytgat, E. (PG Space & Service Design), Blockx, L. (BA Interior & Service Design), Fendt, T. (Erasmus exchange student from Industrial Design, Hochschule Magdeburg, Germany) (Photo: Rottiers, I.)

### The evaluation of the project

After completion of the interior & service design brief Design for Education (December 2016) for Community development Province of Antwerp, researchers analysed the dynamics between the different stakeholders involved in the design process and the process itself in order to get a deeper understanding and to anticipate shortcomings and pitfalls. A group interview involved the interior & service design students (n=4), students of the teacher training department of Thomas More who will use the object of design during their internship (n=2), design teachers (n=1) and teacher training teachers (n=1), a graduating student in family sciences involved in the design process and the social workers who would have to use the object of design and coordinate the service (n=2) (Fig. 6 and 7).





Figure 6 and 7. Group interview with researchers, designers and stakeholders concerning Interior & Service Design process evaluation (Photos: Van Geetsom, N.).

The group interview revealed that the consequent involvement of (future) users empowers the users. It gives them the feeling of having a voice, in being able to provide valuable information. Through the assessments of critical components, it offers the possibility to predict and avoid potential problems when using the actual space/product/communications and service. Subsequently, the viable design will be economically sustainable.

The group interview's transcripts show that also non-designers understand the different steps in the design thinking process but are not always aware of the role they can play in the process. They mostly stick to their role of information provider. Consequently, they sometimes refrain from giving creative input, feeling overwhelmed by the more experienced design students. Furthermore, the group interview showed that aspirant designers have the impression that they are designing relevant outcomes because they were checked by the end-users and service providers, more than when only a teacher tutors. The financial constraints forced them to request information from manufacturers and companies which they never had to do before, making this holistic approach take two-to-three times as long as the "design as container" approach. At the same time, however, the constraints never served as a barrier to creativity but created a greater sense of reality.

In addition, social workers currently using Playbike have communicated their satisfaction about the collaboration and the end result.

*"The collaboration with the students and teachers of Interior & Service Design led to a fascinating design process, with a lot of educational exchanges between different actors, paying attention to the needs of socially vulnerable families and with a beautiful final result: the Playbike!" Vandenbossche, S., Social Worker, Community Development Province of Antwerp asbl*

### Completion of the service system

The user experience of Playbike unfolded that more service design touchpoints were necessary in order to expand and optimize the dialogue with parents.

Interior & Service Design student teams contributed once more to this new challenge of Samenlevingsopbouw, Design for Play, by creating attractive Play-spaces and the necessary objects for existing community spaces in community house Abeel and Oud Oefenplein in Mechelen. The service system of the Play spaces and the relevant touchpoints needs to be developed and shaped. The Play spaces should contain surprising, attractive, challenging and educational play objects. They aim at enhancing the involvement, encouragement and learning of parents and their young children through play activities and to preparing children for school with pre-school skills. Parents play with children, children play with children, parents socialize

with parents and social workers. Social workers can pro-actively intervene when discovering latent problems. Design will be used as a strategy.

Consequently, the same design methodology and educational approach was being used: user-centered design by involvement of the stakeholders, international and multidisciplinary teams, thorough research of the tangible (e.g. available spaces) and intangible context (e.g. current users and future users), a holistic design paying attention to the sequencing of actions, supported by relevant spaces and objects. As a result of the evaluation of the Playbike project process, the stakeholders were informed about their roles and encouraged to contribute with their ideas and not solely with feedback. By doing observations of interactions with Playbike, design students also detected some technical errors and malfunctions in Playbike. These errors will be solved by students when executing the Play Space project.

Samenlevingsopbouw vzw won the Queen Paola Award in 2017. The money will be used to build the prototype of the Play Cabinet. Also in this real-life project (illustrated by Fig. 8 and 9.), the budget needed to be taken into account during the design process. The chosen project will be realized in 2018.

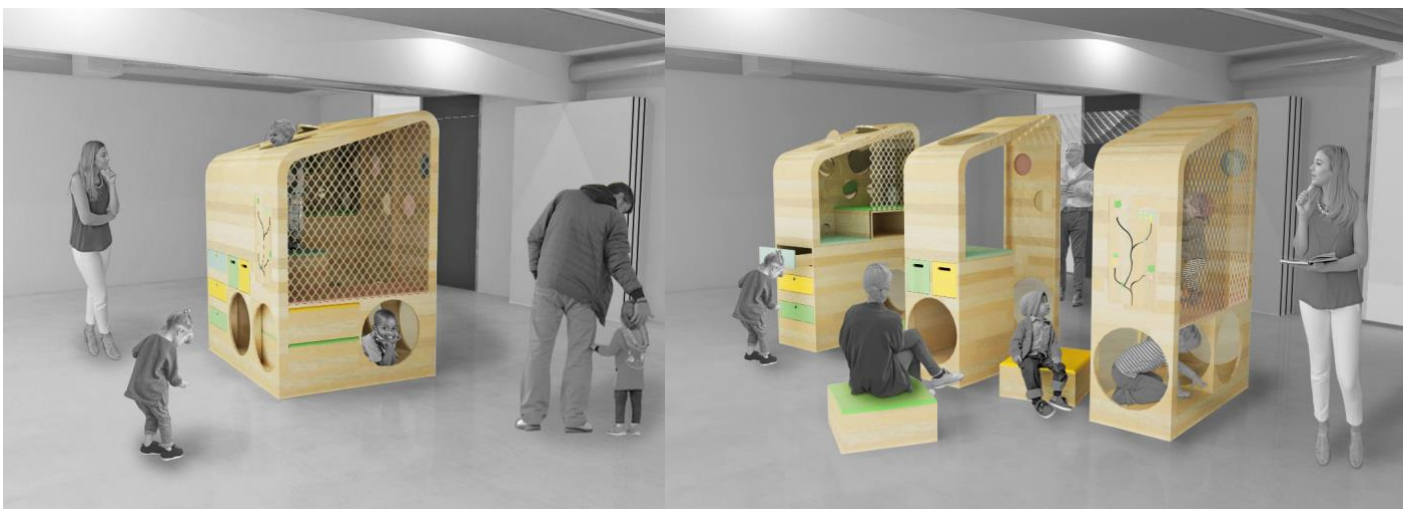


Figure 8 and 9. Example The Play Cabinet (design: Schepers, E. (BA Interior & Service Design); An, J. (exchange student MA Design management, Jiangnan University China), Liebrechts, E. (BA Interior & Service Design).

## Conclusion

The design of spaces and public services are intertwined. The real demand of social or cultural organizations, public services or NGOs to adapt, reinvent or converse their spaces and services created the need for a new design approach: a combination of spatial design and service design. Thomas More University of Applied sciences offers this combination in a new course with a specific approach. The design of spaces and services demands a user-centered approach, is holistic and iterative. Services for public spaces are sequential. A thorough qualitative research of the tangible and intangible context is a key principle of the process.

As a consequence, collaborating with real-life clients is essential in the learning and design process. The collaboration with stakeholders enriches stakeholders, aspirant-designers and the design school. Although the engagement is time consuming for all parties and weighs on the collaborative organisations, it is essential to create the adequate learning circumstances for Interior & Service Design students.

One of the social challenges tackled by the Interior/Space & Service Design course is the challenge of future educational environments. The project Design for Education led to an

enhanced and broader service for the local communities. The completed projects are rather small scale interior, furniture and communication solutions. A future challenging project could be a complete school building, a library, a learning centre. Further research in order to evaluate and improve methods and tools should be undertaken.

In order to create authentic learning environments for Interior & Service Design students, the ideal situation would be that a design proposal can be executed. Obviously an execution of students' interior/space & service design is not always guaranteed.

The design of spaces for services necessitates more than a new design attitude. It entails specific knowledge and new skills on top. By offering a course which addresses two inseparable concepts we aim at setting up a constructivist, authentic learning environment for future-proof designers.

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<sup>ii</sup> [http://www.samenlevingsopbouw-antwerpenprovincie.be/nl/over-ons\\_2.aspx](http://www.samenlevingsopbouw-antwerpenprovincie.be/nl/over-ons_2.aspx)



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# Refugees Welcome Italia ONLUS, shaping the new hospitality system

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## Abstract

The birth of Refugees Welcome Italia ONLUS (RWI) comes at a critical moment in history, in which both the European Union and the national states have failed to respond in a timely, effective and coordinated manner to what UNHCR has called *“the greatest migration emergency since World War II”* (UNHCR, 2015).

RWI was founded in December 2015 as part of the international Refugees Welcome network, in order to develop a system for the reception of refugees and asylum-seekers by and into host families through a web platform ([www.refugees-welcome.it](http://www.refugees-welcome.it)). RWI was created to respond innovatively and sustainably to the needs of refugees with respect to reception and inclusion in the community, in light of the inadequacy of the existing. The 80 co-living experiences shaped through RWI's methodology are the tangible proof that the physical space of private house with its deep interactions has the right characteristics to promote reciprocity, sharing and participation.

**KEYWORDS:** domestic hospitality, refugees, cultural and social change, sharing, reciprocity, participation

## Extended Abstract

### Background information

The birth of Refugees Welcome Italia ONLUS (RWI) comes at a critical moment in history, in which both the European Union and the national states have failed to respond in a timely, effective and coordinated manner to what UNHCR has called *“the greatest migration emergency since World War II”* (UNHCR, 2015). There is a clear inability to balance international obligations of protection, inherent in the founding principles of the EU and in many national constitutions, including the Italian one, with a preference for security measures based on emergencies, which may violate the rights of migrants. These policy decisions are counterbalanced by an exceptional and widespread mobilization in favour of refugees and asylum-seekers on the part of activists, third sector associations and NGOs from almost all member states. RWI was born in this movement.

## **Description of the service: what it offers, who offers it, to whom it is addressed, what needs it solves**

RWI was founded in December 2015 as part of the international Refugees Welcome network, in order to develop a system for the reception of refugees and asylum-seekers by and into host families through a web platform ([www.refugees-welcome.it](http://www.refugees-welcome.it)). RWI proposes a radical change to reception policies, which are outlined and managed by the Ministry of Interior with European funds, through partnership with the third sector and municipalities (for second-phase reception).

RWI was created to respond innovatively and sustainably to the needs of refugees and beneficiaries of international protection with respect to reception and inclusion in the community, in light of the inadequacy of the existing system and the potential risk, concerns about, and occurrences of social disruption in various parts of the country. These issues are largely due to the presence of medium and large shelters that don't have the proper resources or processes to benefit either the refugees and asylum-seekers or the communities involved.

The RWI project has the following goals:

- To actively involve local citizens in the integration of refugees and beneficiaries of international protection through a new model of participative and inclusive reception;
- To include a new element in the often-dysfunctional relationship between social workers and beneficiaries, by creating a methodology based on proactivity and a relationship between equals on a human level, to help the refugees recover their natural resilience and resources, and to facilitate the knowledge of the socio-economic context; this can be possible only by breaking through the segregation and isolation experienced in reception centers;
- To propose a change in the national reception policy, to include the broad implementation of a sustainable system that would be effective for both the beneficiaries and the community; this system would be oriented toward rebuilding social cohesion and making resources available for integration;
- To support a cultural change in public opinion, through strategic communication and awareness-raising campaigns disseminated via multimedia and through multiple stakeholders, in order to affect the perception of migration that is often manipulated by politics and a stereotyped media narrative.

## **Service structure: the actors involved in the system and the role of the different actors involved**

RWI addresses “active citizenry”. This term refers to all those who wish to participate in the promotion of a strong cultural change in terms of equal rights, opportunities, resources, reciprocity and social well-being. The three main actors of the service are: citizens who decide to host “unknown” people at home, called “host families”, those who need to be hosted and citizens wishing to commit themselves to ensure that this hospitality can be concretized, called “activists”.

The organization is overseen by a governing council, which consists of nine people who dictate the strategies, manage institutional relations and advocacy and communication activities, define and adapt the methodology, and coordinate local teams and planning and fundraising activities. Local teams, which began in Rome, Milan and Bologna during the start-up phase, have been added and trained in Turin, Alessandria, Cuneo, Genoa, Como, Padua, Macerata, Siena, Florence, Catania, Palermo and Cagliari.

To arrange and support the co-living situations throughout the country, the regional groups listed above carry out a complex process, beginning with an in-depth telephone interview of

people interested in hosting, followed by training for the families, a home visit to assess suitability, and writing up a profile of the family. When suitable families or individuals are found, the best possible matches are made with refugee candidates. Co-living situations start after one or more meetings in which the family and refugee get to know each other and decide whether to continue or not. The RWI tutor then helps the host family and the refugee-guests work out a co-living agreement that defines all aspects of the co-living arrangement. Tutors are in continuous contact with the families and refugees-guests.

### **How the service differs from other similar solutions on the market and what the elements of innovation**

The main aspect of innovation of the service is the philosophy that gave birth, have grown and moved RWI: the promotion of a cultural and social change achievable through domestic hospitality. RWI considers this model exportable to all those areas of social intervention concerning the people registered in “vulnerable categories”.

Another important aspect of innovation are the tools and the methodology published by RWI in the manual for domestic hospitality. The manual arises from the experiences of 3 years of activities and from the direct and participated observation of reality. RWI decided to publish these guidelines in order to model the path made and to demonstrate the validity and scalability of the approach used.

RWI was also able to create a new narrative frame. Its commitment is based on the concept of reciprocity in the relationship and in the decision-making processes, the circularity of resources and the sharing of experiences. Every actor involved in the relationship has an equal role respect the others, none should feel “beneficiary” or “charitable”. These aspects are clearly reflected in the communication, defined as “counter narrative”.

The last aspect of innovation is the use of technology. Thanks to the CRM and the platform for community engagement RWI is able to automatize processes, collect and systematizes the data related to families, refugees and activists and monitor the co-living situation and the progress of hosted people.

### **How it was designed: by whom, how and in how much time**

RWI was founded through the activism of a team of professionals with solid experience in the field of immigration, reception and social inclusion policies. These professionals are active in non-profit companies and social innovation processes; they have promoted an initiative of active citizenship throughout the country, involving hundreds of willing host families and hundreds of activists willing to create local groups.

This multidisciplinary team of experts has developed a methodology to promote the development of co-living experiences with high quality standards, with attention to psychosocial factors, the creation of resilient and proactive communities, and the reactivation of the refugees' resources to facilitate their integration into the country.

### **How and why the case fits into the theme of the track and why it is a proof or concept for a given approach or solution**

The basic assumption of RWI is that there is no a “migrants emergency” but the need to develop a social awareness about the modality of presence on the territory of young foreigners forced to live long waiting times in places often isolated from the city and, consequently, not facilitated to know the territory and to socialize with the local population. The majority part of those people, once obtained refugees status or other form of international protection, are forced to leave the reception center without having developed a social network, having found an accommodation and without having started a path of integration into the labor market; in few words, without being autonomous

The current situation shows that places like medium and large shelters don't have the proper resources or processes to benefit either the refugees and asylum-seekers or the communities involved.

RWI is the proof of concept that domestic hospitality helps the refugees recover their natural resilience and resources, and to facilitate the knowledge of the socio-economic context; this can be possible only by breaking through the segregation and isolation experienced in reception centers.

RWI, thanks to the methodology developed, has succeed in shaping a new “space” for hospitality: the family. The physical space of private house with its deep interactions among people living in it has the right characteristics to promote the reactivation of the refugees’ resources that facilitate their integration into the country.

### **Future challenges and possible developments**

A future challenge for RWI is to create partnerships with local organizations. RWI does not initiate co-living situations where there isn't a local team. Therefore, it is necessary to strengthen existing teams in partnership with other organizations in regions that are not easily accessible, but that offer high potential for medium- to long-term receptions projects that would also benefit the communities, including the repopulation of various areas and the recovery of skills in various fields, such as agriculture and crafts.

Another important challenge is to make domestic hospitality an integral part of the social welfare system. RWI affirms that the results achieved in autonomy, such as bottom-up participation, strengthening of social and relational networks, support and social cohesion, cannot be overlooked by the organization of the welfare state.

RWI is seeking support from national and local institutions for the development of its method and collaboration to rethink reception policies.

RWI strongly believes that the framework developed will, as the number of co-living situations grows, contribute to the development of policies for better and more effective reception.

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## Starting up communities in housing spaces

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### Abstract

The service presented consists of an enabling system called the “Community Start-up Process” which is made up of a guided process together with various tools (such as a web platform, “social” cards, and “design/generation” cards). The service is aimed at assisting groups of residents involved in collaborative social housing projects to manage and design spaces and services.

KEYWORDS: housing, community, shared spaces

### Starting up communities in housing spaces.

Description of the service: what it offers, who offers it, to whom it is addressed, what needs it solves.

Fondazione Housing Sociale (the “Fondazione” or “FHS”) was founded for the purpose of developing Fondazione Cariplo’s “Social Housing” project. This was aimed at implementing real-estate projects of a social nature, experimenting with new approaches for intervention, with integrated design of the architectural, financial and social aspects involved. The idea behind this was to create a platform to raise the awareness and availability of social housing in Italy and to make this type of intervention systematic and therefore more virtuous. Social housing in Italy had, up until then, been rather random and sporadic.

In carrying out its mission, FHS absolutely intends to promote the creation of living and social contexts in which the inhabitants are directly and responsibly involved, supported by an appropriate network of services.

Social Housing is an integrated program of interventions that includes the offer of accommodation, services, activities and tools aimed at those who cannot satisfy their personal housing needs on the market, for financial reasons or because there are no suitable solutions available.

The scope of Social Housing is to improve and strengthen the living conditions of these people through the creation of a quality residential context in which it is possible not only to get access to an affordable home but also to actively participate in the experimentation with

new or reinvented forms of living in which the residents themselves are called upon to construct a sustainable community.

The methodology described here has been developed within a private social housing project while it was underway and implemented through a Sistema Integrato di Fondi (SiF – Integrated Fund System) managed by CDPI sgr. The System operates through FIA (Investment Fund for Housing) which invests in 32 local funds distributed throughout Italy. The accommodation proposals offered by this project include affordable accommodation, primarily for lease, and shared communal spaces. The aim of the program is to create 20,000 new homes by the end of 2019, of which around 6,000 have already been built or are in the process of being built. The FIA has € 2.028 Bn of available funding, all of which has already been allocated.

With respect to public sector residential accommodation, which necessarily is built with public money, the social housing developed by FIA is characterised by its use of private capital in partnership with public funds.

### **Service structure: the actors involved in the system and the role of the different actors involved**

The actors involved in the community start-up process are: the residents and the social manager (in all the collaborative social housing projects there is a social manager whose role is to take care of all matters relating to the residents and the buildings).

### **How it was designed: by whom, how and in how much time**

#### **How and why the case fits into the theme of the track and why it is a proof or concept for a given approach or solution**

To spread and facilitate such initiatives in the residential environment as well, it is necessary to equip individuals and groups to be able to build their own neighbourhoods by making relevant platforms available to them.

Offering relevant platforms means making the following elements available: tools to facilitate organization and communication, spaces (other than those that are strictly residential in nature), a structured process, resources and knowledge that will speed up the process of group formation, the implementation of the services and the design of spaces.

This, therefore, is what we offer: the tenants sign up to a housing project that is based on the sharing of spaces and services aimed at optimizing the day-to-day and improving their own personal living conditions. In return, the tenants expect to receive tools and an appropriate level of organisation.

In practice, the project is structured as a “Community Start-up Process” that starts around 6 months before the first tenants move in and finishes when the residents have been living in their homes for 1 year. It is a process whose objective is to equip the tenants to plan the use of the common spaces available to them and to define the rules that will govern their use.

The methodology adopted for working with the residents is closely connected to the culture of the project: we ask them to design and manage their activities and we assist them to implement the project in a short time and with minimum effort. In order to achieve this, we have designed several tools to design and prototype the activities, a platform to manage the project and facilitate communication among the tenants, tutorials on how to efficiently perform each activity in a short time and how to structure the governance. Our intervention has the “final product” of the creation of services and the putting into practice of the ways of inhabiting the shared spaces proposed by the residents (that is, helping to give form to something that starts life as an idea emerging from a concept generation session).

The spaces that host the activities are set up by the residents, who also decide how the spaces should be equipped. These spaces are designed with a certain degree of flexibility that enables them to be used for a wide range of purposes and to be modified over time.

The ultimate objective of our activity is to make it possible to repeat an experience which, outside our project, has up until now been done casually and spontaneously; that is, to try to put into place tools which will allow us to spread and reinterpret the models that emerge from this experience and from the resulting idea of living

**How the service differs from other similar solutions on the market and what the elements of innovation are.**

When the project had reached a first concrete stage through the setting up of a fund which enabled the creation of 20,000 homes throughout Italy, the planning activities concentrated on the identification of which housing model to put forward. Undertaking a project of this magnitude has brought us to the realisation that this could be the opportunity to experiment with different ways of living that would make the tenants more responsible and more independent. Among the examples we studied, both Italian and foreign, two stand out for the influence they had: cohousing and the Italian co-operative experience. Two examples that are very different from each other, but which have several key factors in common: the leading role played by the residents themselves. Co-housing is identified as a bottom-up activity, meaning it is completely driven by the residents and implemented in properties for sale, even if recent experiences have been developed also in properties for rent. The undivided-ownership cooperatives have also always adopted a model based on sharing, but with top-down governance. Our proposal is certainly more similar to cohousing in its outcomes but not in its development and management strategies

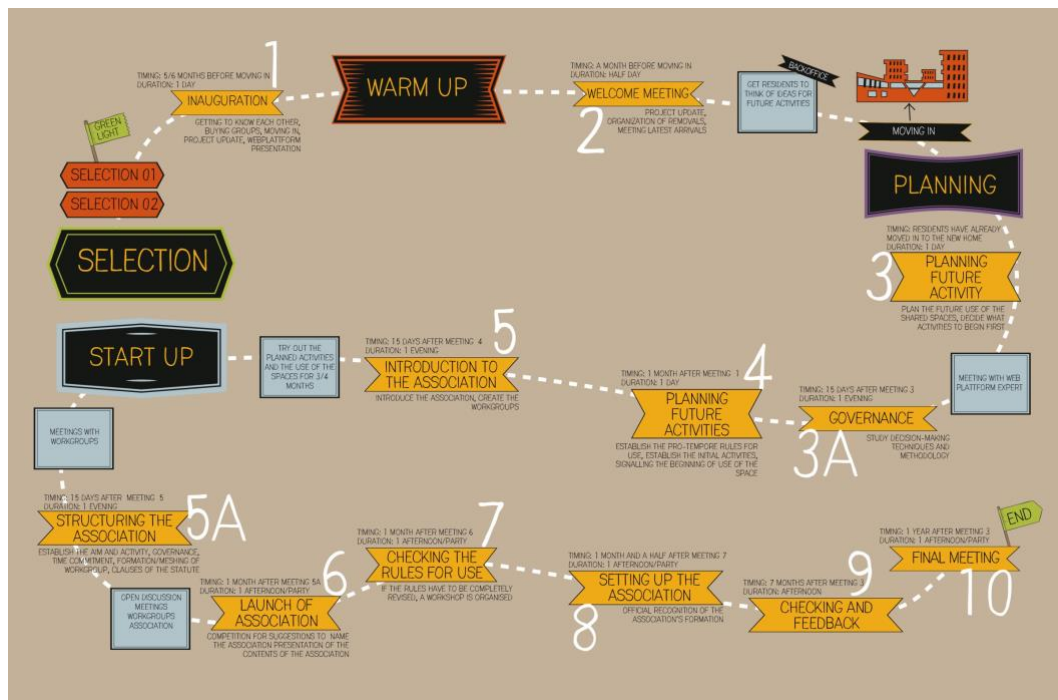
### **Future challenges and possible developments**

These initiatives, if they work, expand: if they expand, they require increasingly higher levels of commitment, professionalism and continuity. How, therefore, can we make these initiatives efficient without losing sight of their collaborative nature?

These questions can be answered, as mentioned before, by opening up towards a wider user base. In the case of a residential project, this means visualizing the spaces and collaborative activities as being destined to a section of the neighbourhood rather than to a single building. Imagine, within your own neighbourhood, having access to self-managed functions that are - like collaborative living itself - an extension of the home but which also bring people together based on a geography that is freely-chosen rather than just physical. This is already happening spontaneously if we think about social streets and social districts that actually bring people together through their common desire to build a neighbourhood based on shared initiatives.

## **Title and Authors**

Starting up community  
Giordana Ferri



Guided process scheme

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## *Track 7: Community and relationship building*

The design of a service requires the definition of a paradigm of social organization and of models for human-to-human interaction. This, together with tools and policies for internal communication, decisionmaking and information sharing, characterizes the quality of the experience and reflects an interpretation of needs, roles and values.

It is acknowledged that services can originate out of a peer community or, conversely, create a community with shared values and interests. Both cases imply a deliberate effort to build relationships and manage the community over time. In fact, the quality of the experience within a service is closely related to the suitability and meaning of the human interaction, while the continuity of engagement depends on intrinsic and extrinsic motivations. As a consequence, service design also deals with the sense of belonging and the definition of an identity.

This track focuses on service design as an opportunity for community building and on services as physical/digital environments of social aggregation and dialogue. It aims to reflect on cases, practices and relevant methods and tools. Specific issues regard:

- approaches to the creation and management of communities;
- experiences reflecting specific cultural perspectives and expressing the point of view of specific groups;
- the role of digital platforms and virtual spaces in social networks;
- forms of decision making, power management, knowledge production and organization in community-based services.

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# New paradigms related to community building and identity in service design: Exploring global and local design initiatives

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## Abstract

The paper concerns how service design is developing as a field, and calls for new paradigms for social organization as well as new models for human-to-human interaction. The authors present and discuss the key themes and contributions presented at the conference ServDes 2018 concerning the role of community building in service design (track 7). We reflect on expectations for the call in light of the contributions received. The paper provides an overview of different perspectives in the contributions, including case studies on local and global design experiences and theoretical issues. A main concern is the changing role of the designer in terms of fostering community and identities through meaning-making in service design practice. In conclusion, there is a review of the challenges facing community-oriented designers, along with discussion on the changing paradigms for service design and human-to-human models of interaction.

**KEYWORDS:** community building, identity building, meaning-making, human interaction, social organization

## Introduction

Service design as a field, a discipline and as a professional activity has achieved maturity. An ample variety of case studies demonstrates the effectiveness of design theories, methodologies, and practices in several different application fields and contexts. The conference ServDes 2018 explores, through its eight branches, the role of service design as a

source of innovation for economic and industrial systems, and as an opportunity to experiment and enact new forms of dialogues between private and public actors. Focusing on Track 7 - Community and Relationship Building, we are aware that the term community has been adopted in service design in ways that are not always consistent. Community is somehow adrift, volatile, boundless. This may be due to the common roots of words like community, common, communion and communication, stemming back to Latin *communicare* "to share, divide out; communicate, impart, inform; join, unite, participate in," and related to *communis* "common, public, general". It is always true that community refers to engagement in social contexts and participation in social life through a process of active dynamic negotiations of meanings, which combines individual and collective aspects, and produces physical and conceptual artefacts reflecting the shared experience. As far as service design uses and develops words, tools, concepts, methods, stories, documents, it links to resources and other forms of *reification* (Wenger, 2010), it can be associated both with craft production and soft organizations, at the local or global dimension. In fact, web-enabled systems have introduced communities and networks as two types of structuring processes: community emphasizes identity and commitment to a partnership, highlighting the social dimension of the interactions; whereas network emphasizes connectivity, which is able to open up the boundaries of the community itself because of enabling technologies. Connectivity shakes up community, providing unexpected inspirations because of the brand-new, incoming profiles and competences, and inducing groupthink. In this paper we refer to community as characterized by self-governance, voluntary participation, personal and collective meaning, identity, boundary crossing, peer-to-peer connections. We discuss participatory culture by introducing the contribution of interaction design and discussing the contribution of design as a meaning-making process rather than a solution provider (Manzini, 2015; Bertolotti, Daam, Piredda, Tassinari, 2016).

## Defining the paradigms of social organization and human-to-human interaction

In service design, we consider defining the paradigm of social organization and human-to-human interaction as a primary issue, one that provides the implicit or explicit bearing axis of a service structure. No service exists without a model that defines the goals and modalities of human-to-human interaction giving origin to the service. Even the simplest definition of the service must be capable of identifying a recipient – user, customer or member of the peer community, depending on the specifics of the service paradigm – who can be described or identified by his/her needs, potential or motivation, whatever these may be, as part of the system enacting the service. More often than not, the creation of a service implies the definition of at least two different social identities, which relate in complex ways. One social identity is the *service-provider* (or a network of stakeholders acting as providers). The other social identity is the *service-user*; and the prefiguration of the optimal conditions for value exchange between providers and users during service delivery is one of the main activities in service design (Kalbach, 2016; Newberry 2013). A service designer often aligns with and crosses between these identities.

A paradigm of social organization and interaction always lies at the base of service creation, but in various ways. Interaction is always there, whether explicit or not, whether low or high tech. Even when the delivery of performances and value is carried out through a technological solution that filters the direct human to human interaction, through automation or indirect content and function exchange.

Indeed, each service can be framed as either the adaptation of an existing paradigm of social interaction or as the creation of a new one, and for this reason service design could be conceptualized as a discipline aimed at fostering different forms of social cooperation, trading or value exchange.

Actually, the historical role of some services should be evaluated in terms of their contribution to the understanding and spreading of novel forms of social organization, of cooperation and/or negotiation between stakeholders, together with the real contribution to

the solution of problems and the satisfaction of needs. In fact, we should point out that some important case studies in the realm of new services appearing in recent decades - such as those aimed at the sharing of material goods and properties, to the collective creation of contents, or to the autonomous solution of local problems by the citizens living in those quarters - have produced effective outcomes in terms of cultural change, contributing to make explicit the potentials of new forms of self-organization, of participation, and of collectively searching for innovative solutions to shared problems.

The contributions to track 7 reflect two main perspectives: most of the papers refer to the creation and management of processes and tools for enhancing the participation of the community, on the one hand, by the means of digital interfaces and digital platforms; on the other hand, by leading in-field participatory actions.

For these reasons, investigating the variety of processes and purposes that lead to the definition of a community or of a social group, with its particular attributes and identity characteristics, should be considered as a main topic in service design research.

## Our expectations regarding the call: the role of service design as a social catalyst

When we wrote the call for track 7, our main idea was to trigger a conversation about the role of service design practice in shaping new forms of organization in society. Indeed, the flourish of new services as a way to create solutions for people's needs and to exploit the creative potential of local contexts, is one of the most significant phenomena of our time, a framework capable of orienting policies for the development of economic and education programs, and a privileged paradigm for improving the wellbeing of citizens. We focused on service design as a social catalyst, as a means of creating new occupations and professions, and a way of mapping emergent skills and abilities, as well as new forms for value exchange between different groups of citizens. For a new service to be born, it is necessary that a group of people become aware of a condition, their own or someone else's, and of the possibility of inventing new scenarios through the implementation of new activities or of new modalities for relationship and aggregation. In other words, the creation of an innovative service is closely related to the capability of defining a system of human entities, and to imagining a game based on roles, activities and interaction; a scenario aptitude to be convenient or, in the best case, desirable and tantalizing for all the involved parts. So, while writing a call on *service design and community building* we were expecting to collect stories about service design experiences in local and global contexts, in which the implementation of a new service could also be an opportunity to foster the emergence of new social actors or, at least, to make some social actor find new ways of aggregating peers, and new forms of belonging. Our expectations emerged from our preoccupation with key questions regarding design as potentially having impact on communities, also on a political level.

## How can design impact on a community?

Designers may make their contribution as newcomers entering an existent community and offering their competence, which may or may not be embraced by the community, or they may take part in the very first stage of community building. Design contributes from the outside to shape or support community practices leading to a process of realignment between socially defined competence and personal experience, providing language and tools to open up dialogue and enact meanings. We should also add that a community of practice may sometimes be dysfunctional and appear counterproductive. Even though service designers can facilitate a dialogic process there is still an improvisational logic of engagement and sense-making in action in any community. Even when institutions, management or research activities structure design processes and provide tools, design is never simply a matter of output or implementation: the design impact is a dynamic response to a community - based on active negotiation of meaning.

## How can design play a political role?

Design potentially plays a political role by fostering the meaning-making process of communities: it is a matter of accountability. It is about power. The accountability and the identification that form the basis for power in communities is horizontal, mutual, negotiated, often tacit and informal. There is nothing that says that communities of practice are egalitarian or harmonious. Conflict can be a central part of the practice that claims competence and creates an *economy of meaning* (Wegner, 2010). Over time, this kind of economy gives rise to a community as participants define a "regime of competence", a set of criteria and expectations by which they recognize membership. In order to nurture this kind of informal and dynamic social structure among participants, enabling and managing platforms are provided reclaiming participation, which can in some way contribute to sustain the institutions themselves and their power. Many traditionally hierarchical organizations in many contexts show interest in fostering horizontal communities and networks: the obsession with participation favours business models based on the economic exploitation of user data. In an ecosystem where social media and other platforms can operate whenever digital interactions take place and where people use these platforms to create and feed political and consumer opinions, these platforms become gatekeepers (Srnicsek, 2017). Media studies extend their fields of analysis and research so that designing a service means designing media and the other way around.

## The response to the call: contributions explore a variety of themes

As sometimes happens, our expectations were only partially fulfilled by the contributions of the several authors responding to the call – and we learned a great deal about the breadth of design service. The themes in the contributions were broad and less political than we expected. We did not receive any report on service design related to gender issues or to ethnic communities; neither did we find any case discussing the issues of power management and decision-making in participatory services, which was also a topic proposed in our call. On the whole, the contributions to track 7 provide a rich basket with food for thought. We find it worthwhile to highlight some topics while we also want to emphasize their variety. Below, we summarize the overall topics in the following statements.

- Service design is now carried out in an ample variety of different contexts, and faces goals and application fields of growing importance, being also recognized as a main leverage for urban development and re-development. A designer working towards the creation of a new service is a political actor, i.e. a subject who, in order to carry out his/her mandate, must clearly communicate the project goals and the specific complexity of the reference context.

- Flexibility seems to be one mandatory professional characteristic for designers, in the sense that a service designer must be capable of communicating with different stakeholders so as to be able to contribute to the definition of the organization and technological system supporting the final service. However, since designing services is a collaborative activity, always involving different actors, designers need a clear (if not final) definition of their specific professional skills and capabilities in order to upgrade them beyond the mere value of being able to adapt to different situations.

- Designers still play an important role in the project making process mainly in terms of producing meanings; they also act as social mediators thanks to their sensibility and knowledge about languages and, notably, about non-verbal languages, being capable of coding and decoding the symbolic dimensions of artefacts and signs. Service designers have not yet found a satisfactory definition of their specific area of skill and expertise and must find the most appropriate way of making them clearly evident. Thus they need to clarify the specific role played in the development of new solutions. The capability of design to create new meanings, and shape both material and non-material spaces, objects and communications is needed.

- Designers learn by analysing case studies, and apply their learning to change or evolve existing services, with the participation of customers and users. Through the critical

analysis of case studies, designers contribute to the progress of service design theories, as well as to the development of a social awareness of the consequences of innovation.

- As service design is potentially a catalyst for change, discussions about the real impact of changes on communities and context is a mandatory activity for our times.

### Three clusters in the contributions

We suggest three overall clusters for the contributions that demonstrate how service design offers various effective approaches to fostering local efforts for economic and cultural local growth.

#### Cluster 1: Place-based model

This cluster refers to the "place-based" community model defined by Carroll (2012), which is divided into three main aspects: "community identity", meaning the sense of belonging deriving from the sharing of values, traditions and experiences; "Participation and awareness", i.e. the perception that each member has an impact on community decisions and initiatives; finally, "social support networks", meaning the different roles and relationships that can be activated among the members of the community, who interact with the purpose of supporting each other.

The creation of convenient forms of independent, sustainable growth in underdeveloped environments requires a preliminary analysis of the different subjects and communities living and acting in the territory, so as to recognize the potentials of the local context, and the actors capable of acting as protagonists of social and economic innovations. Furthermore, in the creation of collaborative and community-based solutions, the exploitation of explicit and implicit elements contributing to the definition of the identity of local actors and social groups is an important, strategic activity. It may lead to an awareness of common interests and motivations, and thus facilitate the engagement of local people in the co-design process, in the implementation of experimental initiatives, and in the follow-up activities of refinement and improvement.

In this respect, the case study presented by Priscilla Ramalho Lepre (2018) and set in Porto de Pedras, Brazil, is a very moving testimony of how a local community is engaged in the construction of a sustainable future. The community is tackling the complex task of developing new and more convenient ways of organizing old activities, such as those aimed at developing the tourism economy, while ensuring economic dignity for low-income citizens. The paper maps the role of different service design tools in the co-design process, and highlights the close interconnection between the possibility of creating innovative services in local territories, and the ability to help communities to grow toward the construction of more structured associations and clusters, provided with an **enhanced identity**, sense of belonging, and self-awareness.

Self-awareness, engagement and the ability to adopting an active and collaborative attitude are also the main issues discussed by the paper written by Fabrizio Maria Pierandrei, Silvia Remotti, Tang Tang, Shilumbe Chivuno Kuria, Stefano Anfossi (2018), which presents a case study of an EU funded project in Southern Africa. The paper deals with the deep and radical social changes experienced by some local environments, also producing effects of marginalization and disorientation especially in young generations. In this case, service design activities reveal their potential for becoming part of innovative **education** processes, and local human resources are enabled through actions aimed at supporting young people in developing the awareness of their personal potential, and in offering practical and conceptual tools that help them to **become active protagonists of their own future and agents of transformation** in the contexts they live in. The project focuses on a tool-book supporting local communities in actions such as organize meetings and discussions, jams, brainstorming sessions. The project also aims to create empathy and build an ethic of reciprocal respect as preliminaries that prepare the ground for creative engagement. Storytelling, sharing dreams and aspirations, discussions about behaviour and feelings are part of a process that leads to self-awareness, to fertile knowledge of the local conditions, and to creative interpretation of

local potential, and works toward the involvement of individuals in the identification of problems, and their taking a responsible and active role in the definition of solutions to those problems.

The contribution by Geertje Slingerland, Ingrid Mulder and Tomasz Jaskiewicz (2018) provides an insight into engaging citizens within a shared territory, such as a neighborhood park, through digital and physical activities. It proposes the application of digital technologies and, in particular, of social media like matchmaking with peculiar characteristics in terms of connecting people with mutual interests. The research goal was to increase participation and foster community engagement after the initial start-up enthusiasm.

*“Interestingly, park users are oftentimes open to participate more actively in the community, but are unaware of how to get involved. This lack of awareness is omnipresent, despite the efforts of park initiatives to attract new park users by actively organising various activities to recruit new volunteers.”* (Slingerland, Mulder and Jaskiewicz, 2018).

The outcomes delivered are a service design and guidelines for using matchmaking for further applications. In this case, service design was a practice of de-materialization, using the term materialization as it was defined by Mosconi et al. (2017), or to put it better, a practice based on establishing a relationship between the real-world activities located and rooted in the park which the intangible digital environment refers to. In fact, the evaluation phase highlighted that the main interests of the park users do not match the actual offer, so that the community might be better understood as a networked public (Mosconi, Korn, Reuter, Tolmie, Teli, & Pipek, 2017; De Lange & de Waal, 2013), in which activities and engagement are heterogeneous. Personal motivations then represent a key issue for the design of the service, which is not oriented to provide support for the negotiation of meanings, but to supply the lack of offering. It is configured as a personalisation-oriented community service, which sounds like an oxymoron, but it is representative of networks where the commitment to shared values is not the main collective goal. Identification with the community is not the core issue and engagement in practice implies some degree of alignment (Wenger, 2010). The social media matchmaking platform was useful for getting data from and about the park users and tailoring promotion of the activities.

## **Cluster 2: The issue of identity and of participation in global services**

From a completely different point of view, we can develop an analysis of the role of community building and on personal identity in service design, discussing these topics in relation to service facilities provided on a global scale by international providers. In countries that have a more developed, mature industrial and economical infrastructure, large scale services play an important role in the definition of the evolving social and economic assets, and any discussion on the effects of their progressive growth and diffusion is a complex task, not free from controversy. For instance, we can refer to the paper presented by Miso Kim (2018), who discusses Airbnb as a case study. The author focuses on this service, discussing the principles of participatory economy, its cost-effectiveness and the related opportunities for new diffused entrepreneurship initiatives. We would particularly point out the significant analysis of the role played by the emergence of the personal identities of the subjects acting as service providers, in creating fascinating representations of local environments, and in eliciting interest in the choice of hosting. Nevertheless, the optimistic analysis of the author is debatable. Moreover, we consider the development of critical sense in global services to be of increasing importance: on one hand it is appropriate to have consideration for the communities that are the representatives of the service, but on the other hand designers should be aware about those that are defined by exclusion. Even when born from a bottom-up innovation process, when a service becomes a global platform, it becomes itself the mainstream at the edge of which we need to find the emerging forces and creativity to enact new sustainable solutions.

The second cluster of contributions also tackles some theoretical key issues in the realm of service design, such as the concept of relationship.



Jan Koenders, Dirk Snelders, Maaïke Kleinsmann and Jürgen Tanghe (2018) provide a customer relationship experience (CRX) framework and guidelines that bring together marketing theory and design practice to assist larger service organisations in designing for relationships between the company and its customers, as well as among customers themselves. In this case, the global dimension of the service refers to customers defined by the market of reference and the topic of identity is much more consistent with the idea of brand loyalty because of the product service system provided. The following contribution, instead, addresses a global community, developing specific skills and practices in the field of design due to the design contribution. In fact, Massimo Menichinelli (2018) applies his reflections to the specific context of the Maker movement, where communities of experts and non-experts collaboratively design and produce artefacts. Within the wider field of ICT technologies supporting and shaping new forms of working and assessing projects, from research to manufacturing and distribution, Menichelli proposes a meta-design platform to foster community building and management by providing concepts and visualizations that help users in the mindful and reflective design of the activities of their community-based collaborative design processes.

### **Cluster 3: The unique role of professional designers when everybody designs**

Designers have been dealing with services for decades now (Pillan, 2003; Meroni, 2011), thus forcing their competence and their activities out of the realm of material objects and spaces. This change has imposed an evolution and upgrade of design skills and capabilities. As service design has evolved, the questions about the social and professional role of designers have again become topical, both from the point of view of defining professional potential and awareness, and with respect to education issues.

The collection of papers presented at the ServDes conference in the track about community building is quite rich, and it contains, in its complexity, a significant contribution to the investigation of the different directions that the profession is taking.

In this respect, the paper presented by Laura Warwick, Paola Pierri, Claire Bradnam and Emma Field (2018) is an interesting reference, as it represents a case study of an initiative for the diffusion of service design culture based on local activities oriented toward a large-scale experiment. The project reported by the authors was developed in cooperation with a federated charity organization named Mind assisting citizens with mental health problems through 135 local institutes. Within Mind, a community of practice focuses on the capitalization of service design approaches and methodologies so as to involve non-designers in the creative generation of effective and efficient new solutions. The paper demonstrates how service design knowledge seems to offer a very appropriate approach to a systematic renewal of the policies adopted in the solution of cogent and complex social problems, and a promising way to develop an inclusive conversation about the sustainable and yet effective use of economic resources, even when they are scarce. Due to the extent and dimensions of the Mind institutions, and to the extreme delicacy and social importance of the content of their activities, we consider the research reported in the paper as very interesting and significant. It demonstrates that, in some contexts, service design is now accepted as one of the main leverages for the generation of new approaches to the quest for new solutions to social needs that, in the past, were considered to be exclusively the responsibility of specialists in the care field. The paper also demonstrates the importance of creating suitable conditions – in terms of time and space – for the appropriate preliminary research that is sometimes required to prepare effective interventions in specific, complex situations.

The paper presented by Alla Pihalskaya (2018) is also an interesting demonstration of the evolution of designer roles in project processes for service design. The case study is located in Visaginas, a city in Lithuania originally created to be the location of a nuclear plant, and now seeking new prospects for economic and social development. The project aims to map the urban environment, in search of new opportunities for the formerly mono-functional town. The activity of designers within the project deals with the multiple identities of the local citizens, at a point where the primitive technocratic vocation of the city and the still dominant influence of Soviet Union culture, meet the new vocation towards a national Lithuanian identity that unfortunately has no local traditions, and is caught in the grip of

economic and industrial crisis. The paper reports firstly, the specific role of designers in mapping the territory, with its social and cultural complexity and contradictions; and secondly, the importance and originality of the contributions offered by designers in the interdisciplinary research team, which relies on its members ability to gather hints and clues expressed in visual ways, and on their skill in acting as mediators and enablers in multi-cultural environments.

The contribution by Matteo Colombo, Elena Enrica Giunta and Paola Papetti (2018) proposes branding as a powerful tool to help the creation and delivery of new forms of welfare services, just as new dynamic forms of public-private networks are emerging. The paper refers to branding without mentioning the strategies commonly developed in the field of brand communication and marketing. In fact, the outcomes and the processes developed during the in-field activities mostly focus on logo design and naming. The authors focused on co-creation, understanding how it could be applied in building the graphic identity with and for welfare organisations. They started from the assumption that if brands, and the values they underpin, are not only passively received, but also co-created, a continuous extension, re-appropriation and re-socialisation of these values can be achieved, contributing to the sense of belonging that collaborative processes can foster. Comparing the structure of the three co-design workshops with the ones we are already familiar with in the field of service design, they used tools that focus far more on the expression and collection of concepts, and their translation into images. Colombo, Giunta and Papetti suggest that the solutions "... are not always visually refined, but rather are meant to foster engagement and create ownership within an organization". One of the tasks for professional designers involved in the process is the evaluation of communication impact. It is interesting how this kind of co-design activity deals with representation, shaping and translating shared imagery. It is for certain a good example of self-reflective process, nevertheless as White mentions, it would be useful to adopt the same process of horizontal (within the peer community) and vertical (among the community and other stakeholders) reflective feedbacks from participatory video processes (White, 2003).

## Conclusions

To summarize, we review some of the main abilities and roles that designers of service appear to have nowadays across various contexts. Thereafter, we close the paper with perspectives on changing paradigms and models regarding design service practice.

- An overall ability for service designers today concerns context analysis. Preliminary research into the potentials and needs of a given environment is the starting point for all service design processes. A context analysis typically includes the main actors and the institutions that are or could be involved, the material and cultural resources available, together with their problems, needs and potentials; for each one of the social parts acting in a context, the preliminary analysis must provide a model for their engagement, including values, motivations and goals beyond mere awareness of and direct statements about them.

- Designers participate in preliminary design research, and use their expertise in understanding and creating meanings, in order to gather clues and hints and thus provide a unique contribution to the representation of a context. By using different communication and representation approaches, designers can provide innovative envisioning of environments and of the social dynamics that take place in a context; this contribution is very important to elicit new awareness and to produce the evolution of mental frames and shared schemes toward innovation. In the tradition of design (Cross, 2011), an assigned project brief can be dismantled and re-framed if the analysis of the context in a design-approach reveals new and more promising creative potentials.

- Designers are innately optimistic since in an explorative "designerly" approach every non-predicted context is analysed with positive expectations of finding unexpected potentials. This attitude can be fostered to create the suitable ground for innovation in

problematic contexts, i.e. when one or more stakeholders actually has a sceptical position toward the project.

- Designers can give very important support to the further development of complex service design processes. They are unique candidates in providing a suitable evaluation of the resources needed, even including those dedicated to non-material activities, and in managing a sustainable time schedule and planning.

## Changing paradigms for service design

Service design has a range of paradigms for the relationship between customers and designers – from the more traditional division of service provider/user to collaborative practices, including co-design in a complementary collaboration. Service designers therefore deal with a variety of models for the organization and management of power and decision making. There is a lack of clear conceptual tools to deal with the different degrees of freedom when designing new services such as social interaction between stakeholders.

Service designers inherit the traditional knowledge and expertise of industrial design, and acquire new skills when designing experiences. The traditional capabilities (such as crafting) still play a very important role in the design of a service, where designers are asked to invent credible and desirable scenarios. However, it is one thing to envision the dialogue with stakeholders to create consensus, but it is much more challenging to involve real people. Whether called participants, co-designers, partners or collaborators, working with stakeholders who are actively involved in new solutions gets messy.

Service design is growing and developing a specific corpus of knowledge that is showing its effectiveness far beyond the issues relating to the design of material objects and spaces. Yet service design seems to be deeply rooted in the tradition of industrial design and in its ample variety of reference knowledge, including art, communication, drawing and creative thinking. The changing paradigms for service design indicate that explicit and implicit knowledge about collaboration are increasingly important for designers in the creation of services.

## Changing human-to-human models of interaction in relation to identity

As far as the specific topic of track 7 on “community and relationship building” is concerned, we would like to underline in particular the contribution of design on identity building. Identity creates a focus on building relations and establishing communication models that are not based on a division between service provider/user. Understanding identity can guide design practices so that a design fits with ongoing human everyday experience. Identity adds a dimension of dynamism and unpredictability to practices and production processes, as each member struggles to find a place in the community. It adds a human dimension to the notion of practice: it is not just about techniques. It is also about enabling “becoming”: becoming expert, becoming accountable, becoming agent of meaning, which even the most effective power cannot fully subsume. When design contributes to identity building and to the reification of values of fluid communities (Manzini, 2018) practicing and producing artefacts and intangible relations may not be a revolution, but it does have a transformative potential.

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# We are brand: Brand co-creation as an engine for new forms of welfare services

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## Abstract

The paper investigates the role of brands in new forms of welfare services, introducing the concept of brand co-creation as a mean to bring cohesion, motivation and alignment inside the new networks that underlie these services. Three real cases will illustrate the potential of community branding as an engine of belonging and civic engagement, and thus as a new tool in the hands of designers involved in the development of new generation welfare services.

**KEYWORDS:** participatory design, branding, visual solutions, co-design, co-production

## Introduction

Design for services has long been investigating its role inside of a **new generation of welfare services**. These new services introduce innovation both at governance and at operational level. Instead of the hierarchical model of welfare, where the state provides services in a transactional manner, new forms of welfare create dynamic public-private networks able to tackle societal problems in a relational way, by putting the individual at the centre (Maino, 2012). In this frame, branding can be seen as a powerful tool to help the creation and delivery of new forms of welfare services.

Indeed, **brands are more than just a logo**: brands also comprise an invisible part, which contains meaning-intensive values that underlie all the brand system. In new forms of welfare services, this part of brands is fundamental. Brands can be the way organisations define and use meaning-rich values while communicating and operating – with the additional benefit of driving the organisation, and all its individuals, towards more cohesive and impactful activities. Able to comprise both tangible indication (symbol and characteristics) and intangible assets (values and behaviours), brands can broadly influence, for the better, services at organisational, system and interface levels.

However, contrary to the traditional way of managing brands, which is through tools that are fundamentally normative and that create, as Armstrong and Stojmirovic (2011) call them, ‘brand monologues’, designers who use brands as a tool for community-building need to **engage in a conversation** and be open to co-creation. This approach creates a reciprocity which enhances the brand value through interaction of “consumers”, the organisation and its

stakeholders, mutually influencing each other. This goes beyond the traditional consumer–firm dyadic, as mentioned by Voyer et al. (2017).

In a **transformation design** perspective, as described by Burns et al. (2006) and further described by Sangiorgi (2011), and given the nature of these services, brands for new forms of welfare organizations can express its full beneficial effects only if two conditions are met. Firstly, they have to be created in a participative way; secondly, they have to be manageable by internal stakeholders, users and external audiences, thus building capacity, and not dependency on designers. Although this shift of power leads to a loss of control in how brands are traditionally managed, their values, character and culture are directly determined and shaped by the people who use them. When these stakeholders are provided with an infrastructure made of simple empowering tools, they are enabled to engage with the service communication artefacts and touchpoints and to adapt them to different contexts.

## From storytelling to storydoing: how brands are changing

Brands are three things in one (Landa, 2005): **brand identity** (conception of a brand from the point of view of the brand owner), **brand image** (constellation of all elements that express the identity) and **brand perception** (ultimate mental image of a brand by each stakeholder).

**Brand identity** can be understood by looking at brands through the lenses of four similitudes, as described by Aaker and Joachimsthaler (2010). As **symbols**, brands are characterised by recurring visuals and metaphors. As **products**, brands relate to the characteristics of the product/service they represent. Subtler is the concept of brand as **person**: this explains how brands seem to have a distinct personality. Finally, brands can be seen as **organisations**: through this lens, we can see how brands contain **values** that underlie the brand system, and that act as beacon to give meaning to the actions of the organisation and the individuals who compose it. These aggregates of meaning are becoming more and more important for brands, to the extent that brands nowadays are more about organisations, and less about products (Fabris and Minestrone, 2004). A distinction, therefore, can be made between the *visible branding* (visuals and product characteristics) and *invisible branding* (values and positioning) (Grimaldi, 2014).

To get an audience to internalise all these concepts, these elements have to be translated into a series of actions and artefacts, which make up the **brand image**. The constituents of a brand image (from purely communicational artefacts, such as a *brand videos*, to very concrete and functional items, such as the *touchpoints* of a service), working as a hypertext, narrate the original brand idea and contribute to the individual understanding of the brand, which is ultimately the **brand perception**. The translation between brand identity and brand image is usually controlled through evocative artefacts that evangelise about the core values, such as brand books, and normative artefacts that mandate the graphical expression, such as manuals. These are usually technical tools, made by designers for other designers.

A summary of this framework is found in Figure 1.

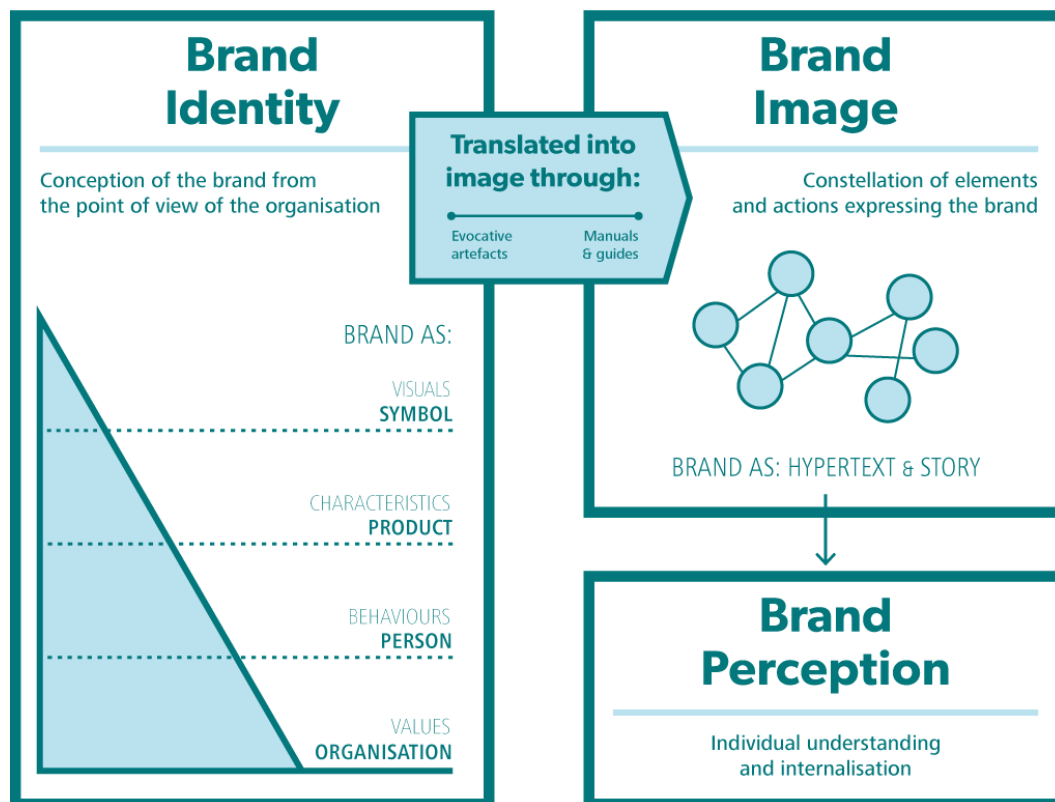


Figure 1 – Brand identity, as a complex system of values, behaviours, characteristics and symbols, is translated into a brand image, which in turn shapes the brand perception

Branding is, intuitively, an expensive activity in terms of time, commitment and money. Therefore, why do organisations need brands? Brands are an effective way to communicate the benefits that the user can expect from using a product/service, and this was their original function: functional, emotional, and self-expression benefits (Aaker and Joachimsthaler, 2010). This, however, is not the only reason for branding, as this activity can bring **internal organisational benefits**. The value system of brands can help building internal consensus, giving higher sense of mission and belonging in individuals contributing in a community. When a brand and its intangible components represent a shared ground within an organization, members are not only aware of the vision and mission, but also of the organization strategy. Thus, every member of the network is a potential brand agent who can bring a positive external image of the brand, as Monfort et al. (2015) explain.

This new view on brands encompasses more than profit, and therefore can become **beneficial for non-profit organisations**, too. Brands become a strategic asset that serves the mission of the non-profit organisation. In this perspective brands can be the way organisations define, protect and use meaning-rich values while communicating and operating – with the additional benefit of driving the organisation, and its individuals, towards more cohesive and impactful activities and programs. Indeed, due to the blurred line which separates brand consumer and brand creator, the brand value lies in the community.

This becomes possible only if the view on branding changes from a tool of competitive advantage used to drive profit, to a way to **express the unique identity of an organisation**, as already advocated by Laidler-Kylander and Stenzel (2013). To do so, brands must reflect deeply the values and mission of an organisation. Moreover, brands must be managed with engagement, and not normative control, in mind. If brands and the values they underpin are not only passively received, but co-created as well, a **continuous**



**extension, re-appropriation and re-socialisation** of these values can be made, contributing to the sense of belonging a brand can foster.

Communication theorists and practitioners already advocate this change from profit to value, from manipulation to authenticity and from authority to inclusivity, not only in the non-profit sector, but also as a general and much needed shift in all communicational paradigms.

As Morace (2017) has said [translated from Italian]:

*To face the future of communication, we need to understand the shift from storytelling to storydoing, which is telling what we are doing. [...] What will keep brand identity together will be the tale – in real time – of what that brand is doing, which projects is activating, which social and civic mobilisation it is able to back, in a rich and varied manner.<sup>1</sup>*

The author goes on in explaining how manipulation will become an ineffective way of communicating, as users become much less passive consumers, and much more “*consumAutori*”, that is, in English, *authors-consumers*, users who become originators and protagonists in the tale of a brand. This paradigmatic shift is explained in Figure 2.

As designers involved in the creation and management of new generation welfare services, we recognise the potential of branding, but we also understand the needed change from traditional ways of managing it. Therefore, we focused on **co-creation** tried to understand how it could be applied in branding with and for welfare organisations.



Figure 2 – Storytelling / storydoing, translated from Morace (2017)

<sup>1</sup> “Per affrontare il futuro della comunicazione, dobbiamo comprendere il passaggio dallo storytelling allo storydoing: raccontare ciò che si fa [...] Ciò che terrà insieme l’identità della brand sarà il racconto – in tempo reale – di ciò che la brand sta facendo, quali progetti sta attivando, quale mobilitazione sociale e civile è in grado di sostenere, in modo ricco e variegato. [...]”

## Brand co-creation: co-design and co-production applied to community branding

The theoretical frameworks on co-creation are many, often with conflicting or ambiguous terminological boundaries around the words **co-design**, **co-production**, and **co-creation**. In this article, we take co-creation as the umbrella term that comprises both co-design (designing with users, at design time, before use) and co-production (delegating production and design decisions to users, at use time, after the design process is concluded, without the direct presence of designers). Figure 3 illustrates this framework, along with fundamental references in literature.

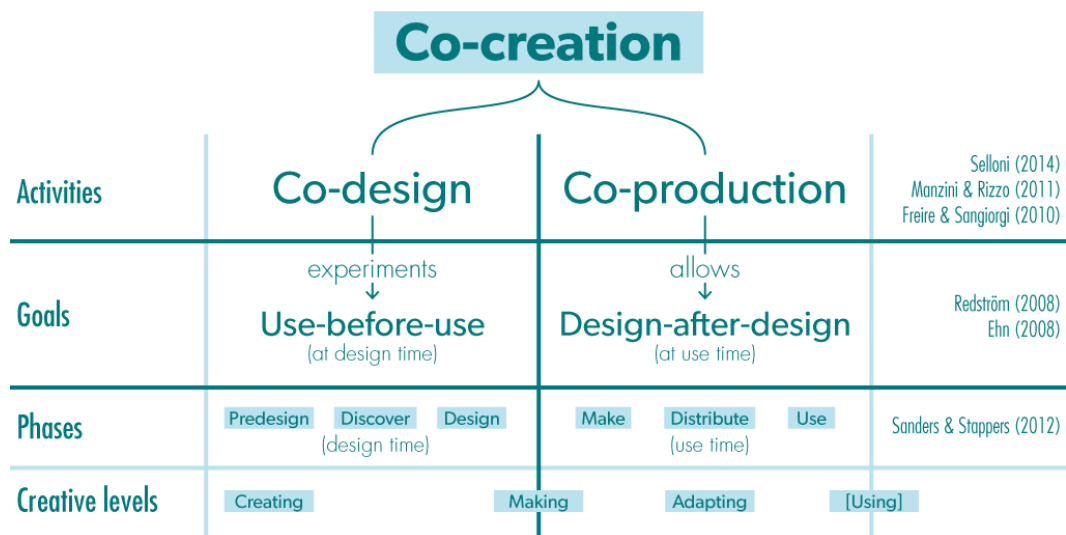


Figure 3 – Comparison between co-design and co-production

How can we apply co-creation to branding? We can see brand identity as something that is created *a priori*, before it is translated into a usable brand image. In this **use-before-use** analogy, **brand identity can be co-designed**, by involving users and stakeholders in the definition of a shared set of values (the “invisible”) and symbols/images (the “visible”). Of course, deciding what parts of the brand identity are to be co-designed and what parts remain traditionally designed is up to the designer’s sensitivity.

Instead, **brand image**, as act of translation of brand identity into a tangible, visible set of artefacts, offers **opportunities for co-production**. The translation, instead of being fully designed, can be left partly open for **design-after-design** by users. In this sense, designers help building the social, cultural and technical infrastructure that empowers final users and service deliverers as designers and producers of the artefacts that express the organisation’s brand. As in brand co-design, not all elements of the brand image have to be co-produced, but only a strategic subset.

It is not excluded that the co-production of brand-image elements could have a feedback into the definition of brand identity: the fact that final users and deliverers are asked to engage with the brand makes it possible that the brand identity itself, in the long term, is changed and realigned. Such manipulation of the brand allows to define new meanings and to create value-in-use which is defined and shaped over time by its co-producers, making it a living entity.

A synthesis of the concepts of brand identity co-design and brand image co-production is found in Figure 4.

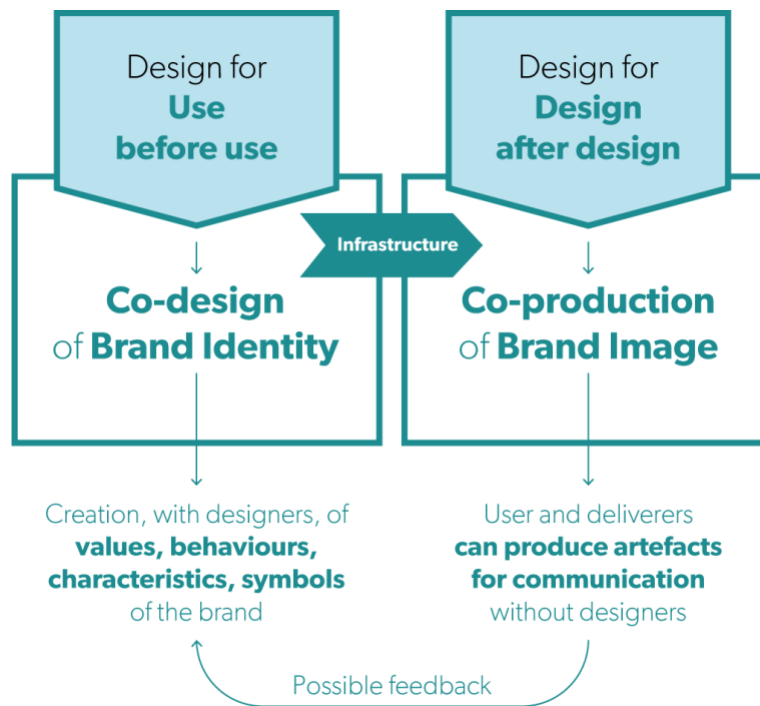


Figure 4 – Integration of co-creation and branding

## Experiences from the field

### 1 – Brand as foundation for a non-profit organisation

When a new service is being born, co-designing the brand identity could be the first step of a series of engaging activities. ANFASS Borgomanero was upgrading its system of residences for disabled individuals, starting from a complete restore and refurbishing of an old structure in Gozzano, Novara. Users, caregivers (generally parents of users) and educators of these Centres are the “living infrastructure” of the Organization; their beliefs, affections and behaviours may keep people close to the cause and to the activity of the Organization itself, or not. A professional designer was involved, since the beginning, in the process of re-thinking about the identity of the new Centre.

Apart from users, unluckily too compromised for being part of an exercise of this sort, both caregivers and educators have been involved in a co-design activity, in three sessions. The first session was about ‘naming’: a guided brain-writing activity, focused on keywords and icebreaking interludes, got the goal to collect a shared semantics' cloud capable of "giving voice" to the big idea beyond the new service (Figure 5a). Second session's goal was an open discussion to assign the concerted brand identity to the right brand image, by choosing between a series of options developed by the professional (Figure 5b). The third and last session was dedicated to strategic design, enabling future production of communication materials. Needs of communication, channels and contents' priority have been widely discussed to achieve a shared planning that was given, again, to professionals responsible to execute the artefacts.

The process allowed to align visions about the future of the Centre and strengthen the values linked to the Organization and to the cause. In addition, caregivers and educators gave a great feedback: it was the first time they have been close to the organization ‘head’. Co-design sessions created deep sense of belonging and had a positive impact on brand perception, as individuals that have been engaged are both inside the cause and part of external community.



Figure 5a – The first co-design session, entirely devoted to play with concepts and words, by freely brainstorming them and then clustering them.



Figure 5b – In the following sessions, through the input and proposal of the designers, the final set of visual symbols have been collectively defined.

## 2 – Brand identity as a vehicle for community value re-generation

Welfare Lodigiano di Comunità (WLC)<sup>2</sup> is an innovative welfare project that aims to support people who are dealing with a moment of temporary crisis. Through a solid network of associations, local businesses and volunteers, WLC supports people in the whole Lodi district, a constellation of 62 municipalities close to Milan. The innovation driver of this project is to go beyond the traditional welfare models, providing people with tools that can empower them to get through the hard time they are facing. Therefore, the project operates on three vulnerability areas, which constitute the three main actions: food distribution, social housing and business counselling.

When the design team joined WLC, a logo was already been developed, but there were some inconveniences: in reality, the brand perception did not suit the brand identity, not even for the stakeholders involved. The first decision of the design team was to refresh brand values with a participatory brainstorming session (Figure 6a). This activity allowed convergence in terms of visions and vocabulary: this was mainly a process of re-appropriation and realignment. Within a context with a substantial number of stakeholders, internal alignment represents a key factor to define the organization identity and to communicate it externally.

The next challenge was to co-design, with all the stakeholders involved, a system of visual references for the different actions of the project. Through a series of workshops and iterations lead by the design team, in which members of the municipality and the local associations ideated about the hidden meanings of the service, the group built a set of common values to be used for the design of the service touchpoints. This phase was fundamental to create a shared understanding of the project mission and purpose, and to activate the participants as brand-service ambassadors.

After unveiling the invisible part of the brand, the focus shifted on the creation of principles to guide the design of the service touchpoints (brochures, postcards, social media, events) across different channels (Figure 6b). Through a participative process, the team worked on two main aspects. First, the team defined the semantic values of the logo colours and of the visual brand components to design a set of guidelines for each of the three project actions, creating different visual declinations of the main brand image and remarkable elements such as prefix #RI (which stands for the prefix re- in English, to underline the concept of iteration). Then, the team investigated the use of the brand for building a series of artefacts with different communication goals and able, at the same time, to maintain the philosophy of the project itself, which is to empower people. The insights gained during this phase were the base for the design of user booklets and job-sheets that support the dialog between different service providers (housing, food, job services) and the users, and ease the engagement of external stakeholders for structuring a shared collaboration plan with WLC (Figure 6c).

This approach helped the organization members to design tangible elements that not only embed the brand values per se, but also use the communication to assist the service itself. Within this framework, co-design becomes a driver to define solutions that are not always visually refined, but rather are meant to foster engagement, create a sense of ownership within an organization.

This outlines new scenarios in which the brand image becomes an open system that can be manipulated in different ways by a variety of actors.

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<sup>2</sup> The project was developed in the context of “Welfare in Azione”, an initiative curated by Fondazione Cariplo, one of the biggest Italian philanthropic organizations.





Figure 6a – In this case, as well, the group of stakeholders have been engaged into a words and concepts initial session.

scheda artefatto | TARGET.....

Obiettivo di comunicazione

DATI ..... EMOZIONI

<input type="checkbox"/> informare	<input type="checkbox"/> incuriosire	<input type="checkbox"/> colpire
<input type="checkbox"/> documentare	<input type="checkbox"/> affezionare	<input type="checkbox"/> coinvolgere
<input type="checkbox"/> alertare	<input type="checkbox"/> convincere	<input type="checkbox"/> attivare
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Linguaggio / Estetica

Contenuti specifici

AMPIEZZA CONTENUTI

☐ overview progetto    ☐ dettaglio azioni    ☐ specialisti

PROFONDITA' INFORMAZIONE

☐ one:one    ☐ one:many    ☐ many:many

Dati mancanti

**NOTE REDAZIONALI**

Idee/esempi/buone pratiche

Figure 6b – In subsequent sessions more technical aspects have been dealt with. This asked for more complex tools to be used with actors involved in sessions.

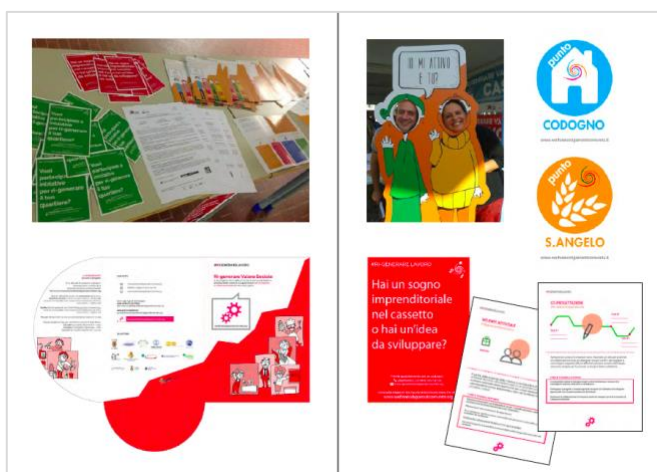


Figure 6c – As a result, with the choices made during sessions, designers have been able to develop new communicational artefacts.

### 3 – Più Segni Positivi: from co-creation to co-production with the community

Più Segni Positivi (*More Positive Signs*) is an innovative public-private welfare organization based in Sondrio. The project aims to support people with economic difficulties through informal aid and community networks of volunteers and associations. By giving the possibility to rise stronger from personal and family issues, the organization's goal is to empower users and make them a "positive sign" for other people.

The project comprises three sub-projects: Cantieri, which pursues the education and the job placement of jobless individuals, Emporion, a social market where selected beneficiaries can have free access to food and services that can bring them psychological and physical well-being, and Diffuso, the connection unit between the organization and the local communities.

Più Segni Positivi brand has been open, since the beginning, to a participative co-design process, whose result was a set of distinct values and behaviours, characteristics and symbols. The whole process was carried out by a team of designers through a series of community workshops and public activities to engage the local community.

The co-design of the brand identity involved the organizational board of *Più Segni Positivi* and the whole network of internal stakeholders. During these sessions, the group developed the values of the brand: positivity and hope, cohesion, and the will to challenge the common definition of crisis. These deeper values of the project can suggest the behaviour of the current and future actions: *Più Segni Positivi* traces temporary, light, smart interventions on and with the territory and its community.

In order to extend the set of values and to involve people from the local community, a public-activity was carried out: the broad public of Sondrio was asked to contribute, during a public event, to the value-system of *Più Segni Positivi*, through engaging visual artefacts (Figure 7a). As a result, the gathered keywords have been integrated in the brand, and have been often used in subsequent artefacts made by the design team.

Once the brand image was defined, the design team has tested a co-production process to develop the communicational artefacts for the daily operations of Emporion. Thus, a system of technical, social and cultural elements was infrastructured to facilitate the communication between users and service deliverers, while staying in brand.

As for the technical infrastructure, a price tag system, a wayfinding system, and a system of chalkboards used to share money-saving recipes were set up (Figure 7b). All these elements were designed to be usable and modifiable by the team of volunteers that run Emporion, allowing them to self-produce visual artefacts.

Without a social infrastructure, the use of these elements would however be sporadic. Therefore, the coordinator of Emporion got assigned the role of brand hero, to make sure that all communication stays on brand, giving guidance and recognition, and fostering the use of the artefacts. To ease the process for service providers, which are not professional designers, a "behavioural manual" was conceived (Figure 7c). This little book, the co-production version of a brand image manual, aims to instructs the co-producers about the brand and the modalities of use of the artefacts they can produce, allowing them to communicate effectively.

This set of technical, social and cultural interventions is what can really enable deliverers and users to become active co-producers of the communicational values and materials of the service, giving to the community a powerful tool to design an end-to-end communication system.



Figure 7a – Public event in Sondrio

During the public event of *DonoDay* (“Gifting Day”) we asked people of Sondrio: “What is your positive sign?”. The collected keywords became an important set of concepts, used in subsequent artefacts.



Figure 7b – Artefacts open to co-production

Inside Emporion, artefacts have been designed so that deliverers could freely use them, while keeping brand coherence. For “money-saving hacks” blackboards, deliverers are encouraged to share tips and tricks on a defined *template*. In the case of price tags, the *modularity* of the system allows the necessary flexibility.



Figure 7c – Behavioural manual

The first part of the behavioural manual is devoted to convey the fundamental values of the brand. The second part instead illustrates the use of artefacts through tips and examples.



## Conclusions

Brands sit between organisational and interactional levels of a service and thus can bring benefits both in communicating the intangible characteristics of a service, and in building consensus, alignment and engagement in communities, which are a fundamental asset for new generation welfare services. As services are inherently human-based, brands can be a powerful instrument for service designers. Theory and practice show that it is possible to co-design brand identity, and co-produce brand image: by doing so, the positive effects of brands on services are amplified, and the brand stays truer to the individuals who compose the stakeholder community of a service.

As designers focus more on processes and less on final outcomes, the core goal of design is not concentrating on form and function per se, but producing shared value. This, applied to brands, makes brands tools for creating community bonding and sense of belonging. As Manzini (2015) says:

*We can recognize some emerging modes: expert designers [...] are progressively shifting from dealing with traditional products and communication artifacts toward design processes in which what have to be designed are hybrid, dynamic artifacts where products, services, and communication are systemized and presented as a whole. (Manzini, 2015, p.42-43)*

This means shifting power and responsibility from professionals (who only conceive a process) to users, who are now able, as highlighted in this paper, to contribute to brands in a more “hands on” way, mediated by a structure/process conceived by designers, yet uncontrolled. This loss of control is highlighted as an empowering tool not only across design discipline, but also in marketing literature regarding brand co-creation: see, for reference, the extensive paper review by Ranjan & Read (2016).

As seen in the first case study, brand identity co-design can be the kick-start for a new service, whose structure and operation may be already defined, but whose deeper meanings and motivations may be still hidden and poorly aligned within the community. By starting with meanings and values and, through subsequent co-design activities, by translating them into visual symbols with which everybody can identify with, the community of deliverers and users is driven by a common set of values, towards a shared goal. The structure of these co-design workshops is not inherently different from the usual co-design activities widely theorised and practiced in the last years, but the tools used focus more on the expression and collection of concepts, and on the translation of them into images.

It's interesting to reveal, to non-experts, the “hidden” potential of a brand. By working together on the pyramid base of the brand (the “invisible branding”, as Grimaldi, 2014, calls it) it is possible to drive the group from shared values (the foundations), to the extraction - and abstraction - of peculiar characteristics establishing the self-perceived “competitive advantage” (or, for social sector, the “core” of the cause or of the service), gradually climbing up to strategic positioning, crucial for all sorts of public messages.

Brand co-design can also be used as a recovery for a poorly perceived brand, as seen in case two. Again, by starting with values and gradually, with the help of designers, by conceiving an imagery, stakeholders are asked to rethink, negotiate and re-appropriate the deeper values of their community, while also building a set of symbols able to communicate them to even more people. In this case, expert designers pull the group above the line of invisible branding engaging the stakeholders also in visual development. Brand identity co-design results in brands that are more in tune with the involved community, and this makes community engagement a natural consequence.

In the third case, the use of brand co-creation has been more broad and open to experimentation. Since the beginning, the service brand has been conceived as an open system. Not only it has been initially designed with iterative co-design workshops, but it also

made use of public events as a tool to gather more values from the broad community. On the other hand, the experiment of brand image co-production inside Emporion, the social market, made possible to build an infrastructure on top of which users and deliverers alike could become active bearers of the higher message coming from the value system of the brand, without direct intervention of designers. Brand image co-production provides for the necessary flexibility that allows users and deliverers to engage with the service touchpoints and modify them to the context, avoiding that the service is perceived “too closed” for the users to be fully involved. Following this line of thought, the success of a brand is measured not only by the extent of exposure and recognisability, but also by the degree of usability by users and stakeholders.

The tools used to achieve brand image co-production are not necessarily complex and can be as simple as a blackboard with a fixed template, but have to be conceived with modularity and templates in mind, so that user-creators can combine elements with freedom of expression, while ensuring brand recognisability. In addition, these user-creators also need cultural tools to fully embrace the brand.

In practice, during the process of brand identity co-design, designer can be the orchestrators of co-design sessions, while also providing design proposals (mostly in the graphic design part of a brand system), to be discussed during consequent sessions. Moreover, to set up the infrastructure for brand image co-production, designers have to design a system in which recognisability is assured by the process of production, and not necessarily by the use of normative instructions regulating the form in all details. Given this principle, opening the production of some elements to non-designers does not necessarily undermine recognisability of the brand, if the infrastructure helps co-producers to maintain some fixed elements.

In general, as the experience in many other design fields has suggested, designers have to take the role less of an author, and more of a facilitator. In this shift, designers lose control of parts of the process and of the result, but they become able to create solutions that are more relevant for the individuals for whom and with whom they design.

### Further development

Further work can be done in validating and monitoring impact on such endeavours. We would like to conclude this dissertation with some proposed qualitative checks that might be done in short- and long-term perspective, both on brand identity co-design and on brand image co-production.

Even if brand identity co-design is participated in nature, the outcomes of it still need end-user validation, especially if the co-design group was a small subsample of the final public, or even more narrowly (as shown in the three case studies) the stakeholders of a new, growing service. Endeavours such as the public engagement activities illustrated before, even if not rigorous, can be useful to test and iterate the co-designed brand with a broader public, while also taking the opportunity to gather more input, negotiate some of the main brand values and make the brand richer and more shared.

On long term, instead, the role of designers should be to continuously challenge the brand as status quo, to make sure that, as the user base grows in number and diversity, the brand still is inclusive, and its mission is really shared within the organisation, at all levels. This continuous check can be achieved by constantly involving stakeholder and users not only in the definition of the core brand, but also in its brand image manipulation.

Concerning brand image co-production, designers have the role to collect feedback and to adapt the system to emergent users and infrastructure needs. Moreover, it's fundamental to validate the relevance of the tools used by the co-producers, and how they apply them, since

this has a vast impact on how the brand is perceived by its end-users. In this task, the key people that comprise the so-called “social infrastructure” (e.g. *brand heroes*) can be act as bridge between designers and the wider community.

In the long run, the positive impact of brand co-production relies on the relation between the brand constraint, represented by the brand ideas system and the creative freedom of its stakeholders. A success factor within this context, is the ability of the co-producers to translate the brand identity and strategy into artefacts which are still effective, albeit not refined as traditional design outputs.

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# Service design tools to engage marginalised youth in San communities of Southern Africa

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## Abstract

This paper reports the findings as part of a EU funded project which focuses on the participatory development with the Youth in marginalised communities of Southern Africa. It discusses the advantages of the adoption of Service Design methods in providing self-awareness, engagement and active collaboration among participants. Based on the literature review of Social Innovation, Participatory Design and Service Design, a framework is proposed and suggests a different overview of the role of individuals in a contemporary community, with the aim of identifying features that enable and empower the youths as change agents in their communities. A tool book is created as a result of a selection of the most effective tools and techniques developed and used in a series of workshops carried out with local Youth. Through a case study, we illustrate the use of process and tools that enables and creates an ethical, equal and open platform where the basic skills can be transferred, and issues or challenges identified individually and collectively can be transformed into solution-oriented opportunities.

**KEYWORDS:** participatory design, service design, youth empowerment, design process, marginalised youth.

## Introduction

Youth are experiencing the difficulty of understanding their role in society and having their voice heard in many of the contexts in which they find themselves. This is especially the case for the youth from marginalised communities, where the entire group is denied involvement in mainstream economic and social activities, and is even more exposed to the risks and challenges of a world that is undergoing a metamorphosis (Beck, 2016).

On one hand, young people who are members of disadvantaged and marginalised groups have comparatively little control over their lives and lack access to social services to meet their basic needs, e.g. health and education, the labour market and the opportunity for social participation and its effects on the social fabric (e.g. juvenile delinquency) (Duchak, 2014).

They can be the target of the negative beliefs or judgements from the public, and are often unequipped to participate fully and feel like they are making social contributions (Kagan et al., 2002; Evans, 2007). Consistent invalidation of their intelligence leads to low self confidence and self-esteem (Stoneman 2002).

On the other hand, research suggests the positive attributes and resilience of people at the social margins can be highly helpful in supporting collective social action. For example, Kagan et al. (2002) discuss that oppressed people's resistance and resilience in the face of oppression has a potential for an enhanced, reclaimed and re-invented identity. Joly, et al., (2014) identify that traditional ties of marginalised groups, their strong family values and emotional attachment among each other in the neighbourhood and village can be the sources of strength, knowledge and a driving force for social cohesion.

Service design is essentially a sense-making process that supports strategic conversations, idea generation, prototyping and new business model development for collaborative solutions, and often rely on the new media to allow people to connect, contribute, collaborate and share (Meroni and Sangiorgi, 2011). Public services design in Western economies have been reformed by acknowledging that people who use such services have unmet needs and latent resources. It is a common practice to enable the dialogue among the community members, ignite the connection with stakeholders and promote civic engagement toward a sustainable community development in Europe (Mulgan, 2007). Due to the diverse characters and needs of communities, many studies criticise top-down approaches and the passive role of the citizen in public innovations for being inefficient and ineffective, and emphasise the importance of a collaborative way of creating solutions "from people to people" (Meroni, 2007; Jégou and Manzini, 2008; Clarence and Gabriel, 2014). Participatory processes are at the base of a new relationship between the citizen and the governmental and administrative institutions. Service design is seen as a discipline that would enable rejuvenate the ways in which people participate (Jäppinen et al. 2015) to co-create a specific value through optimising service offers and channels (Holmlid, 2012). Service providers are putting the competence, ability and knowledge of service users and the wider community as a primary power for the service development. This suggests there is a strategic role for designers to influence the participatory process for "citizen engagement" or "service user involvement". It is important to recognise this more broadening role of design, to catalyse a transformative process in unlocking situated knowledge, developing people's skills and capacities and moving them to make their own futures (Akama, 2014).

This paper presents the outcomes of the PARTY project, where a framework is proposed to apply innovative service design methodologies (Miettinen and Koivisto, 2009) that provides the opportunities of experiential learning and problem solving skill development for the San youth. This is an attempt to get to the heart of young people's individual experience of community and their connection to community in order to better use social and human capital within the San community and empower the youth to solve daily life problems faced by their community. Through preliminary research, we create "environments" for and with young people that promote the development of their skills and capacities and reveal their local, situated knowledge and prepare them to become change-agents in the continuous process of making and designing their own futures.

## Youth in marginalised communities

"We live in a world that is not just changing, it is metamorphosing" (Beck, 2017), and this is particularly evident in the case of the indigenous youth, stuck within the traditional values and cultural norms of their parents and that of western society. With the influence of social media (mainly through mobile phones), indigenous youth became a generation with the burden of a legendary, even though anachronistic, ancestral past and the dream of a future as the next pop star or international football player, and a generation facing limited access to Fabrizio Maria Pierandrei, Silvia Remotti, Tang Tang, Shilumbe Chivuno Kuria, Stefano Anfossi  
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resources in their everyday life and challenged by the same global problems of all other youth in the world. If these conditions are often the cause of marginalisation, they also are the reasons why many young members of indigenous communities feel a commitment to “doing something” for their communities and themselves. They feel the urge to “determine their own identity and their own life project” (Manzini, 2015).

## Youth engagement

These very conditions are that the social innovation literacy considers possible to set the basis of creative collaborative organisations, where design experts can enable collaborative ecosystems and nurture the design capabilities of each individual. As “social actors”, these experts have a role to play in creating strategies, processes and initiatives that would engage the youth in the community development.

Youth engagement should take into consideration how to attract young people and understand how personal capabilities, values and visions could trigger a common action, as well as a sense of belonging to a local group and even a larger and “fuzzier” social unit. According to Putnam (2000), the engagement should leverage on a personal involvement, on elements of a bonding social capital, related to the community of homogenous people, and on features of a bridging social capital, related to community of heterogeneous groups.

## The research method

The challenges faced by the marginalised youth in developing countries, such as unemployment, are not simple or easy to be solved. They are influenced by a number of factors, such as levels of education, gender, self-esteem, geographic location, physical ability and physical location. Employment and educational opportunities are two factors which impact on the future success of young individuals.

The PARTY project, a EU funded initiative involving six academic and non-academic institutions (University of Lapland, University of Leeds, Paco Design Collaborative, Namibia University of Science and Technology, Cape Peninsula University of Technology and South African San Institute), is trying to endorse human development and assist in reducing youth unemployment by increasing the involvement and inclusion of young people in service development in South Africa and Namibia by using participatory and exploratory service design tools. The research focuses on San youth and young adults, especially living in poor or otherwise marginal conditions who either are or face the risk of becoming marginalised. During the first two years of project, a series of workshops have been run both in Namibia and South Africa with local NGOs and organisations who are already working with the San youth. More in specific we have been working with: SASI in South Africa and //Ana-Djeh San Trust in Namibia. A practical handbook has been assembled by selecting the most effective tools from testing during the workshops with the youth and the local stakeholders.

## The model: “me, me+, me++”

Defining the boundaries of a community has always been difficult. The global digitalisation has made these boundaries even fuzzier. We simultaneously live in a hyper-individualistic “global village” and are still part of specific communities, more than one at the same time. We defined these three levels as ME, ME+ and ME++. The boundaries of these three levels vary from context to context, from action to action. We considered an approach based on these three levels in any action engaging the San youth.

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ME: It is the level of the individuals focusing on their personal beliefs, skills and behaviours. Especially in a hyper individualistic society every participatory action has to start considering the drive to satisfy the inner needs of safety, belonging, self-esteem and self-actualization of the individuals.

ME+: It is the level of the immediate interactions of the individuals, mainly related to their family or the close local community they belong to. It is the level in which the interaction occurs with people of the same kind, the one in which we feel to be part of a group. The sense of belonging to the local community is often based on the bonds created by the shared identity, the habits and traditions of the groups.

ME++: It is the level we can access by using social media that makes us feeling to be part of a larger group. At this level the individuals open themselves to the others and to the diversity and common patterns between different groups. The interaction occurs within similar groups in different contexts (the Youth of the World) or between different people bridging different cultures.

Developing a participatory process according to the ME, ME+ and ME++ framework makes possible to start from collecting personal stories and experiences and then mapping them into common aspirations and expectations, supporting the understanding of the role of traditional communities in a global context.

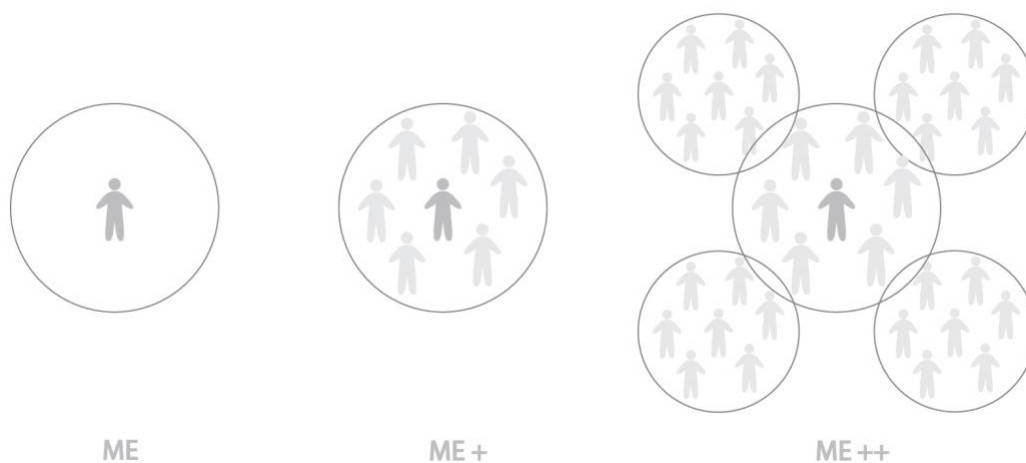


Figure 1: “me, me+, me++” model

The PARTY model aims to provide service design tools to the youth who are willing to activate themselves as agents of change within their community. The model is based on the principles of Design Thinking, structured in phases and steps. It is intended to start a dialogue at different personal and social levels, increasing the awareness of the participants about the possibility to create ideas, small actions and co-designed services that support the livelihood of the communities and sustainable local businesses. The model can be used in a specific project and a long-term commitment among communities and stakeholders through education, capacity building, curricula design and training for the service design capacity building.

The youth can participate in the project with different levels of engagement, experiencing through concrete experience (feeling), reflective observation (watching), abstract conceptualization (thinking) and active experimentation (doing), which are characteristic of an iterative experiential learning, as defined by Kolb (1984). In PARTY project the learning experience it is framed around the Me, Me+ and Me++ levels of the individual relationship



with the community and are represented by the state of awareness (empathy) of the challenges of the youth, by a moment of co-creation (conceptualization) and by a call to action (finding resources, doing).

## The process

The process is structured in order to involve young individuals on a personal level at first and as part of a local and global community in a second time. This structure reflects the passages among the ME, ME+ and ME++ model and aims to leverage on individual self-awareness to enhance participation, the capability of implementing ideas into projects and to deliver them in the community.

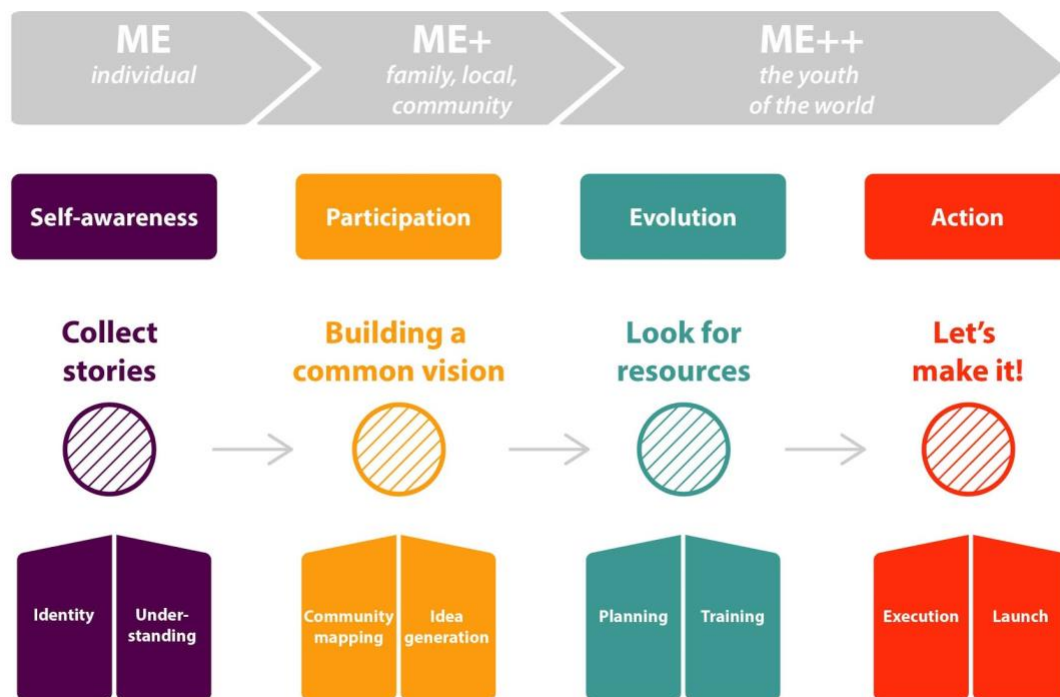


Figure 2: The process

Self-awareness, Participation, Evolution and Action are the four consecutive steps of the process.

The actions related to understand the sense of self-awareness of young individuals are developed at the ME level and allows to explore the personal sense of identity and belonging to the community. Helping the participants to collect and tell personal stories has being defined as the most suitable action to explore people sense of identity.

This approach has been proven useful in several directions:

- it supported the individual empathic connection with the youth
- it helped detecting those individuals who are more reactive and motivated in the workshops
- it revealed those individuals in the community with stronger leadership skills

Following Self-awareness it is the call to participate, leveraging on the sense of belonging to the community of the Youth.

This second phase helps in mapping the community and giving roles to the participants, guiding the generation of new common ideas. The activities related to this phase are developed at the ME+ level, the level of the local community; the specific action related to this step is the building of a common vision.

Two other phases follow, called Evolution and Action, which are related to the implementation of the idea into a service, its production and delivery. These phases refer to the ME++ level and aim to transfer design and managerial skills to the Youth.

As any conceptual model, it has been conceived to identify the logic of the process, which is not necessarily linear: many activities and tools described in one phase can be used iteratively in different moments and applied to reach different goals, to involve individuals, groups and communities. All phases of the process aim to help the youth to understand the position it covers in the community, amplify the sense of belonging and give the opportunity to the young people to have a productive role.

To resume the four actions related to the four phases are:

1. Collect stories
2. Building a common vision
3. Look for resources
4. Let's make it

## 1 - Collect stories

Storytelling is a powerful way to exchange and address the barriers to knowledge transfer within community members (Prasetyo, 2017): this is one of the reason why an initial approach based on collecting stories has been considered.

The engaging phase of the process starts with activities in which the Youth is asked to create, collect and tell stories from their individual perspective. The actions aim to increase the self-awareness of the participants. Workshops and methods are aligned to facilitate an introspective activity with the Youth, understanding their feeling, their actual status in the community and their personal expectations for the future.

This phase is divided into two sub-phases:

- Identity: participants identify their challenges and wishes, reflecting upon their position in the community
- Understanding: participants understand more in-depth the identified challenges and wishes, share knowledge about each other, raise up the real motivations behind the first answers.

## 2 - Building a common vision

In this phase the activities with the Youth are scaled from the individual perspective to the community one of the ME+. The actions aim to start group participation in the process, working on a sense of community. The workshops included in this phase are the most generative. Some of the activities could be also played at a ME++ level.

This phase is divided into two sub-phases:

- Community mapping: participants move from the individual wishes/challenges to the group level, sharing and clustering the personal challenges with the ones faced by the community.
- Idea generation: challenges and wishes are converted into insights which are used to generate innovative ideas/solutions.

### 3 - Look for resources

This phase includes a series of initiatives aiming to find resources to support the implementation of the ideas generated in the previous step. Some of these resources are skills that the San Youth need to develop to implement the projects: in these cases some training courses are provided to the Youth. Almost all activities include the participation of relevant stakeholders (ME++ level), as possible supporter of the implementation.

This phase is divided in two sub phases:

- Planning: participants develop more in-depth the design concept in order to define what/who they need to do/know to make it real.
- Training: participants learn basic design and managerial skills to implement, produce and deliver their concepts.

### 4 - Let's make it

The final and operative phase see the San Youth working to bring their concepts into reality, from the pilot project to the implementation of the final proposal.

This phase is divided in two sub-phases:

- Execution: participants develop the idea into a pilot project in order to test it in a protected environment.
- Launch: the idea is launched in the community.

## The tool book

A tool book has been designed as a practical manual by the local actors for organising and running workshops with marginalised communities and more in specific with the San community. The scope of the manual is to support local communities in a series of participatory actions, including meetings, brainstorming, co-creative moments, jams, prototyping sessions and presentations. The handbook introduces tools with instructions that support the youth who have participated in the workshops to be facilitators in small co-design sessions within their community. The youth to act as facilitators are often those that are active in the workshops and have a reputation of being impartial, open-minded and “active listeners”. They are able to inform the discussion from what has been perceived by the audience and quickly learn the necessary basic skills of being facilitators.

The book provides insights on how to set the right mood for the meeting, involve the community members in a workshop, promote interaction and co-creation between participants. The book is structured in two parts: the first collects a series of behaviours/rules which are important to consider before starting to work within a marginalised community; the second introduces all the tools divided into the four phases explained above.

- Phase 1 “Collect stories”.  
Sub phase “Identify”. Tools collected: paper collage, digital storytelling, face the future, the big 4, family tree.

Sub phase “Understanding”. Tools collected: peer interview, back to the roots, future CV, in & out.

- Phase 2 “Building a common vision”.  
Sub phase “Community mapping”. Tools collected: future us, social sculpture, drama acting dancing, community on a map, development spectrum.  
Sub phase “Idea generation”. Tools collected: 4 quadrants, insights generation, structured brainstorming, musical chairs.
- Phase 3 “Look for resources”.  
Sub phase “Planning”. Tools collected: BMC simplified, resources blueprint, single organization stakeholder map, mapping.  
Sub phase “Training”. Tools collected: create a poster, storyboard, presentation tool, team building, proto-acting.
- Phase 4 “Let’s make it”.  
Sub phase “Execution”. Tools collected: execution line.  
Sub phase “Launch”. Tools collected: pitch.

## A case study - The San youth living in Windhoek

Participants in the Windhoek workshops are between the ages of 18 and 34. The participants are predominantly from the !Xun and the Khwe San tribal group and reside in Windhoek most of the year mainly for educational reasons. Some of the educational activities the youth are engaged in include attending school to improve their grades, vocational studied for skill training and furthering their education in colleges or universities. The youth participants were recruited to participate in the workshop through NUST’s collaboration with //Ana-Djeh San Trust. //Ana-Djeh San Trust was started by young San students in Windhoek in 2014 and was formalised as a legal entity registered at the Masters of Court as a trust in November 2015. //Ana-Djeh is a word from Xung (a San dialect) that means ‘New Light’. //Ana-Djeh is contributing to the development of the San communities by educating their societies on the importance of education and remaining in school. The wider goal by the Trust includes a right to education, no discrimination in schools or workplaces, provide assistance in education, minimise dropout rates, and improve school performance for all San communities.

With the youth in Windhoek, we had a series of workshops during the last two years of research. Thanks to the strong relationship built with them over the years, we managed to work on all the phases of the processes with the same group of youth.

All the workshops were held in English since the San youth came from different tribal groups that speaks different languages.

We started with a series of workshops related to the first phase of the process “collect stories” where we explored:

- young people’s dreams, aspirations, fears, statements, and commitments;
- places and people they usually meet with in their daily life;
- behaviours and feelings when in different contexts (e.g. at their school, village, or at other meeting points like bars) and with different people (e.g. teachers, family members, friends, unknown people).
- awareness of their skills and characteristics
- value system in relation to their own traditions, stories and cultural backgrounds
- capacity to creatively link the understanding of themselves and current obstacles/daily challenges to their knowledge of their roots and values.

During these workshops we tested new tools designed ad hoc for the project or we adapted service design tools already tested in other contexts.

“My super power is...” is an example of one of the tools that was developed using skill/characteristic of each person declared during the energiser activity, which each participant tried to define using their own superpower. Facilitators have a key role in helping the participants to understand what a superpower is, how it would work, and how they might use it. Each participant creates an accessory or piece of costume that demonstrates their superpower. By creating this accessory, the participant analyses why and how his/her superpower would be important and useful to himself and his/her community. Facilitators have the role to help each participant to understand the meaning of superhero accessory. Before offering ideas about how to create this item, the facilitators support the analytical process through which the participants become aware of their best skills and the potential to add value for themselves and their community. It is key that the participants understand the significance of their accessory.



Figure 3: Youth presenting their superpowers

The second series of workshops were related to the second phase of the process “building a common vision” in which we focused more on the ME+ dimension. The youth started to think as a group in order to explore the challenges related to the family, their home villages, their education, their employment, and more in general, the future of Namibia. From mapping these collectively, we asked the youth to choose one challenge they wanted to work on. They decided to focus on how to bring skills and knowledge back into the villages that are presently isolated from the cities. Participants worked in groups throughout the design development process and generated three design solutions to overcome the challenge:

- 1 - TIME TO GIVE BACK: Creating a service/system that the students could offer their community with free knowledge when they return to their villages for a short period of time. The service/system would help villagers to acquire the knowledge, skills and attitudes they need to tackle the common problems being faced by community members living in the city.
- 2 - WATER ISSUES WITHIN THE VILLAGES: Community group lead by the youth, that aims to raise awareness about water issues within the villages, such as, ways to purify water, collect, distribute and save water.
- 3 - PROMOTING LITERACY SKILLS: Raising awareness of the importance of literacy education in villages focused on the elderly and the youth.

One interesting tool used during this phase is “In 5 years time”.

The tool was created to understand youths’ perception of five key topics in relation with themselves: my country (Namibia), my village, my family, my job, and my education. The topics were presented in the form of a question: “How do you see your job in five years?”. Participants chose a topic and created a discussion group, moderated by one facilitator for every three people. This tool works best with groups of 4-6 people, so smaller groups may be clustered together - or unattractive topics discarded. The discussion has a three-step procedure: 1) participants individually write on sticky notes what they wish to happen in the following five years, and then attach the post-its on a poster explaining to the others their perspectives; 2) after a full round is concluded (or a few), each post-it is re-interpreted as a challenge and a group discussion is held to identify factors constituting barriers to the realisation of the challenge being analysed; 3) wishes and challenges together are finally clustered to determine dominant and common factors. At the end of the discussion, each group presents in front of the others, their thoughts and conclusions.

In the third phase “look for resources” the youth developed the ideas in details defining step by step how the services/systems work, the stakeholders to involve and the resources needed for the implementation. One of the tools used in this phase is the “simplified service blueprint”. The tool was created to help with the development of the details of the solution proposed by the youth in the phase 2. To better identify how the service works step by step they started to write on post-it all the actions related in a chronological order. For each action they then identified the main stakeholder to be involved and wrote the name on a new post-it that has been set under the action related. A third line of post-it is then set under the stakeholder with the resources (financial or physical resources) needed for each action.

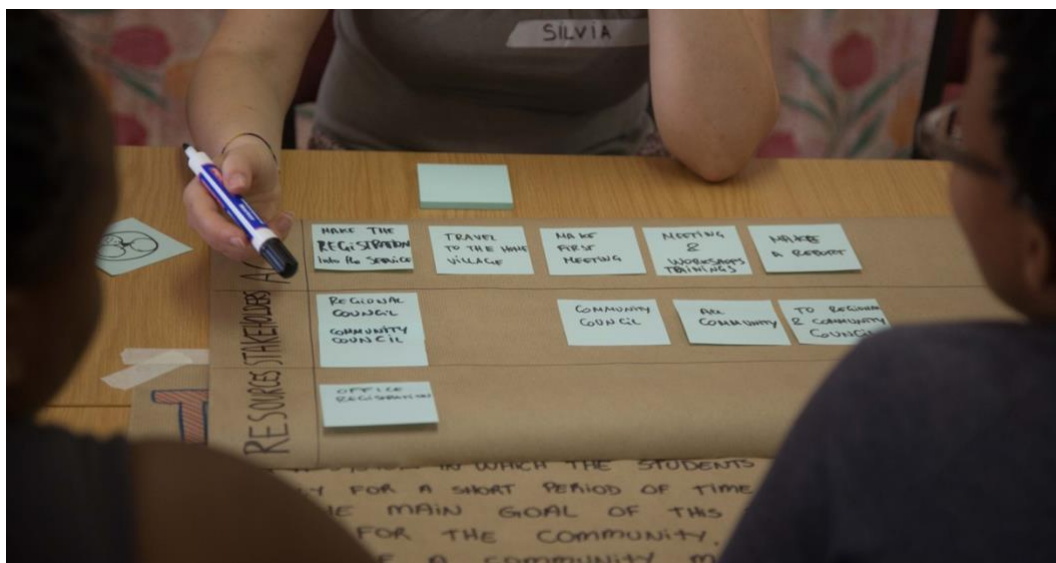


Figure 4: Simplified service blueprint

In the fourth phase “let’s make it” the youth presented their ideas to a group of selected stakeholders. A series of workshops have been organised to help the youth to prepare the materials for the pitch with the stakeholders. In the meanwhile the //Ana-Djeh association selected the stakeholders to invite and sent the invitations via mail. The pitch was successful and at the end of the event an informal discussion started where stakeholders gave suggestions and tips about future development and implementation. A tool used during this phase was the “presentation” tool that is divided into 3 parts:

- The context in which the youth work that has to be represented with drawings and words
- The problems the youth are trying to solve, that has to be represented with acting
- The solutions proposed that has to be represented with drawings, words and acting





Figure 5: Pitch event

## Conclusion

“All men are designers. All that we do, almost all the time, is design, for design is basic to all human activities” (Papanek, 1985). Applying service design methods to engage youth of indigenous communities definitely helps in enabling creative and collaborative ecosystems, supporting the participants in discovering their being “designers”: a process which starts from the self-awareness of the potential they have in creating a change in their community and ends with action plans that potentially have impact on their own lives and future.

The suggested framework (ME, ME+, ME++) has been useful to structure the different phases of the co-design sessions with the Youth, starting from sharing personal stories to trace unspoken values and expectations, till defining common strategic directions for the project development. Surely more has to be done to validate the framework from the theoretical and practical perspectives: it would be important to define the differences between the bridging relationships that are happening not between different communities but at a deeper level beneath the community, affecting the traditional hierarchy and the role of the Youth. What is more, the use of specific techniques with the tools (e.g. the use of props or leftover materials when prototyping, which seems to affect people’s engagement) in the toolbox can be further analysed and tested.

The role of design experts in the participatory design process with the Youth of marginalised community is essential for concretizing and planning the steps to solve the development issues that community has raised. Community-led design creates ethical, equal and open platform where the basic skills can be transferred, and issues or challenges can be transformed into solution-oriented opportunities. These PARTY activities are well perceived by the Youth, because skills, tools and “space” provided are valuable for both their personal growth and their professional career.

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# Research by design and collaboration in the perspective of post-soviet 'nuclear' town Visaginas –RDCPP-SNTV

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## Abstract

The role/perspective of a designer in the interdisciplinary project *Mapping Visaginas*, a former mono-functional town is studied. Conflict multilingual environment makes reconsider the designers' practice in the context of tensions between authority regulations and everyday communication practices as they are. As well as the re-evaluation of the position of the designer in the process of designing the projects for Visaginas. Language vulnerability of the local people from Visaginas reveals the degree to which designer is used to identifying him/herself with the authority. This raises the question what does is social dunction of designer in the context of changing cultural, political and economic circomstances such as soviet and post-soviet.

**KEYWORDS:** design research, multilingual typography, modernity, participatory design, post-soviet design

## Introduction

Political, social and economic upheavals allow us to uncover those conventions that structure the professional design field. Thus, the study of design in the post-Soviet space is a testing ground for understanding such important issues as the position with which the designer is speaking (making design project) and algorithms, the trajectory of interaction between designer, communities and authorities. What make the designer's work satisfactory or even successful: ready solution embodied in the material product (whatever it could be) or process of creation/production of friendly regimes for visibility for those to whom the design project is addressed to?

To tackle the issue, it is proposed to analyze the designer perspective and participation in the interdisciplinary research project *Mapping Visaginas. Sources of urbanity in the former mono-functional town* that is being conducted at the European Humanities University by Laboratory

for Critical Urbanism. A number of research conferences, seminars and summer schools with the participation of researchers from different fields and students were held in Visaginas. Some courses of bachelor's and master's levels of European Humanities University are focused on the problems of the city of Visaginas. In the article will be considered those topics in the development of which the designers participated. The case of Visaginas shows that the development of a specific design solution can not give a tangible effect, only the creation of visibility regimes that allow the actor to build productive relations and connections in the community can be considered promising.

## A brief history of Visaginas and issues discovered during research

The construction of the town of Sniečkus (initially – Sniečkus (After Lithuanian Communist Party leader Anatanas Sniečkus), later renamed Visaginas, is a city in Lithuania) was built from the scratch in 1975, as a city directly connected with Ignalina Nuclear Power Plant (INPP). The city was built for INPP workers and their families. Nuclear scientists, engineers, construction workers and their family members brought from all over the Soviet Union, founded the city as a modernist project. The project of Sniečkus (now, Visaginas) was created in Leningrad (now St. Petersburg) and was a symmetrical composition in the form of a butterfly. The city is built with pre-fabricated panels and concrete structures popular in the 70s and 80s in the USSR. Thus, the city is a holistic modernist project, architecturally, socially, economically and politically. The city was a triumph of the technocratic approach, in which local contexts and traditions were not taken into account. Thus, since the founding of the city, INPP is the main employer and therefore the city is considered a mono-functional. After the collapse of the Soviet Union, the city's residents became part of Lithuania, an independent state. Since 2004, it was decided to close INPP, which should be fully completed by 2038.

There was a contradictory situation in many respects, in which residents of the city who built it from the scratch in the 1970s and 1980s consider themselves as local residents, nevertheless, their integration is greatly hampered by a number of factors, some of which determined by language barrier. So, on the stage the construction of the city engineers, builders (people with a predominantly technical education) were invited from all over the USSR. After Soviet Union collapse they found out themselves in Lithuania, but neither Lithuanian culture, nor language weren't either considered in any way native or even familiar. Social, economic and political context is also difficult, which is especially evident when discussing the future of the city, as INPP is the main place of employment still today (in 70s 7000 employees, today about 2000). In Visaginas local identity is based primarily on professional belonging (nuclear scientists, engineers, construction workers and their family members) and the short term history of the town's construction, rather than on national culture and tradition. In addition, the lack of a large employer, such as INPP in the future and as a consequence labor migration and the growth of the number of empty flats in town. Depopulation leads to decline in the use of educational infrastructure (schools and kindergarden). The results of the Visaginas study on the results of various activities are published in the book *Mapping Visaginas. Sources of urbanity in the former mono-functional town* (Ackermann F., Cope B., Liubimau S. Eds., 2016).

## Design as Mapping and Processing

The participation of designers in this interdisciplinary research and participatory project, along with sociologists, anthropologists, social geographers, political scientists, social historians, architects from Lithuania, Belarus, Germany, Ukraine, made it possible to identify specific aspects visible to designers.

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The complicated situation in Visaginas puts into question the focus of design work on creation / production and gives an opportunity to focus on the research and process, considering design as creative practice. What kind of research is productive for the designer and how can the knowledge gained about Visaginas be transformed into a design project relevant to the city?

In 70s transformation of workplace driven by introduction of computers led to reconsidering and re-configuration of design practices resulted in appearance of participatory approach to design (Robertson and Simonsen 2013, Greenwood, D. J. & Levin, M., 1998). The development of different scenarios for the future of the city of Visaginas could lead to the transformation of many spheres of city life and therefore presents an interesting case for testing the approaches in which the designer acts as facilitator in order to create a mode of visibility for all participants in the process. Therefore, it is important for designers to involve decision makers and those who will be affected by them.

Of particular significance is the historical reconstruction of Visaginas' routine practices, including communication, to understand the context in which the design project can be implemented, in order for the designer to form his own position: instead of identifying himself with a position of power (a Taylorists approach to design), oriented to solutions rather than to design of interaction process.

This is a continuing project; at the moment it is possible to speak about the first stage – cartography or critical mapping. It was important to discover the visual forms in the public space contributing to interaction and configuring routine everyday life. Based on the results of mapping, it is planned to develop projects for various institutions of Visaginas, which participates in the development of scenarios of the city future. Mapping results with the participation of local residents have been already published in the book *Mapping Visaginas. Sources of urbanity in the former mono-functional town* (Ackermann F., Cope B., Liubimau S. Eds., 2016). The article presents the results of the research determined by designer's professional optics, and which supposedly reveals visual forms of representation of the routine forms of communication that have been developed in the past. The results of the study of the visual forms of communication of public spaces make it possible to formulate questions about how the communication in the city can be configured in the future, what contribution of designers could be, taking into account emerging scenarios for city development.

## Public Space Typography in Visaginas

Typography of public spaces allowed to map those tensions that touch communications in the city. So, in the city both in the Soviet, and post-Soviet periods visual communication of public spaces were structured in a similar way, but reproduce different meanings and values. In visual communication (signboards, shop windows, advertising) there are both industrially created signboards, and hand-made or written in manual. In Soviet times, the hierarchy of significant plots in visual agitation throughout the country were reproduced (the decisions of the Communist Party of Soviet Union, the five-year plans and obligations were industrially produced, high-quality typography) in Russian within Cyrillic alphabet, and hand-made plots that were significant for a particular enterprise or sometimes cities (the foremost producers, or those who failed to fit the obligations of socialists' competition were named) (Fig1,2). In the visual communication of soviet times standardized policy for communication in public spaces were used with the thematic hierarchy, which is aimed at creating a homogeneous ideological space (a similar thematic hierarchy and graphic means were used for its presentation in public space in all republics of the USSR).

In the post-Soviet period, international (mainly Scandinavian) brands fill the public space, with the Latin alphabet and the Lithuanian language (the only official language in Lithuania). At the same time small entrepreneurs manifest themselves in the public space via signage using the Cyrillic alphabet, in Russian, sometimes with translation into Lithuanian. Visual communication of the post-Soviet period reproduces tensions between the official language

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policy of Lithuania and the language used in everyday communication by local residents. This circumstance leads to Visaginas being manipulatively labeled as potentially disloyal to the Lithuanian state in the context of current tension between Russia and NATO. Meanwhile, the fact of the town's housing blocks were collectively constructed by residents in the 1970s and 1980s facilitated local belonging and an identification with place. That is why locals feel they have the right to use their native language (most often Russian) in communication in public spaces (hand-made signs of workshops, advertising of public organizations and centers) (Fig3,4,5,6).

## Mapping public space communication through newspapers headlines design

Communication in public spaces were studied within visual communication in newspapers, that reveals institutional logic of communication and the way it deals within the language tensions.

Newspapers "Energetik" in russian and "Energetikas" in lithuanian with the same content were issued in Visaginas between 1980 and 1989. In the late Soviet period, the newspaper "Peaceful atom" was launched in 1988-89. Then, the newspapers were united under the name "Peaceful Energetik". It can be seen from the newspaper's article that all the materials of Energetikas, Energetik, were prepared in Visaginas, but newspaper were printed in Vilnius.

Both newspapers cover local INPP news, as well as news from the cultural, sporting life of the city. The first version the newspaper's headline, which lasted the first two issues, were a bizarre combination of writing and technical drawing. The second version of the headline design was written by hand with a wide-angle (poster) pen with a strong right slope. The third version of the headline was based on sans serifs font, written by hand, but imitating mechanical typesetting. All versions of the newspapers "Energetikas", "Energetik" headlines drawn by hand, but refer to the machine produced aesthetics and in different degrees refer to the aesthetics of the technical drawing, engineering graphics. This kind of approach to design of hand-written typefaces was typical for soviet culture as it was discovered by Youri Gordon, such kind of typefaces was used even in the textbooks for children who starts to master writing skills (Gordon 2010).

The publication of the newspaper in two languages, based on two alphabets: Latin and Cyrillic, entails the creation of an equivalent design of the newspaper's headline. Difficulties in realizing this task lie in the fact that the traditions of teaching and practice of writing in Cyrillic and Latin are significantly different. At least, in Soviet arts Latin writing were less influenced by technical drawing and engineering graphics, then Cyrillic (particularly in Soviet context) one as it is evidenced from the collection of proposed typefaces for visual agitation in handbooks published in USSR. Thus, the general framework of modernity and the aim of the establishment of a homogeneous space created a result that, though seen by Soviet authorities and designers as legitimate, was highly questionable in terms of graphic quality (Fig. 7,8,9,10). Comparing Latin and Cyrillic headlines, judging their visual characteristics: how balanced is the lower baseline, the uniformity of the rhythm, the organic nature of the letters, we can assume that in Lithuanian title the basic line is much worse than in Russian, the rhythm in the first part of the word "Energe" differs from the second "tikas", it looks more discharged in comparison with the first part of the word. This means that the handwritten font was originally developed for the Cyrillic script and at first Cyrillic version of the headline of the newspaper was designed, and then on its basis created the newspaper's title in Lithuanian.

An assumption that Lithuanian version on the headline design on the basis of Latin alphabet had appeared after Cyrillic is surprising, because the tradition of writing and the degree of elaboration of fonts and letters in the Latin alphabet is much larger. After all, in the books by Villu Toots and Paul Luhtin (the most significant typeface designers in Baltic States during

late Soviet time), the alphabet developed in Latin in some cases is expanded to Cyrillic. In their books the secondary character of the Cyrillic alphabet is stressed in many ways. In the third version of the headline of the newspaper, sans serif font is used, still written by hand. Sans serif font allows to create a more convincing version of the equivalent of the Cyrillic and Latin inscriptions. Nevertheless, in the third version the Cyrillic and Latin inscriptions are made with different quality. The inscription in Russian looks more complete, while in Lithuanian the name of the newspaper splits into several parts: "Ener" "ge" "tikas". Designer didn't made kerning in a number of letters couples. This also push to the conclusion that the headline in Lithuanian was also created after the Russian one.

Reproduction of this kind of hierarchical relations is unusual for Lithuania and for the rest of the world, since a deeper history and much greater development of Latin fonts, both calligraphic and typographical. In the books on fonts and calligraphy of Villu Toots and Paul Luhtin, the hierarchy is reproduced by the placement of the Cyrillic alphabet, which clearly indicates its secondary nature. In the later book of 1986 Taranov, another significant soviet type designer and calligrapher with origins from Ukraine (Cyrillics region), raises the question of graphical translation of Latin scripts and typefaces to Cyrillic one, but this is done by establishing analogies between the letters of the Latin script and the Cyrillic alphabet. In most cases, it is suggested to borrow a letter form Latin alphabet if the grapheme coincides, in cases where there is no similar letter, for example, the letter "Ж", then it is suggested to collect from two letters "K" being flipped horizontally (Taranov 1986). For typography and calligraphy - this is an extremely superficial approach, since it ignores the technique of writing and the historicity of the graphics of the letter.

Another Visaginas newspaper "Mirnyj atom" (Peaceful atom) (Fig.11) was also affiliated with the INPP, supposedly the headline was designed following an example from the book by Snarsky O. Such kind of typeface was recommended to use for visual propaganda, as "Examples of using gas-light tubes in fonts for visual agitation" (Snarsky 1978). The design of the newspaper fits into the general setting of the Modernity: an original composition is created from the standard elements, in this case, a graphic solution for the newspaper's headline, in which a neon tube motif and a letter with a pen were combined. The production of heat and light by the nuclear power plant is combined with the metaphor of heat/warmth in the communal life and brotherly attitude of city residents to each other, the newspaper emphasizes in every way the unity in the common affair. The combination of the machine set and the execution the newspaper's headlines by hand, imitating machine set or technical drawing softened the Cold War confrontation and rivalry associated with nuclear industry. The reference to the context of the Cold War is represented through the title of the newspaper, where peacefulness is put on the first place.

In 1989, the two Visaginas' newspapers merged into one " Mirnyj Energetik" (Peaceful NPP worker, literally energy worker), "Taikus Energetikas" (Peaceful NPP worker), the merge occurs in a design of the headlines as well: the style of the word "Mirnyj"/"peaceful" is taken from the newspaper "Peaceful atom", and "energetik" from the newspaper "Energetik". All particularities and flows in headline's design were preserved in Cyrillic and Latin version of newly emerged issues (Fig. 12, 13). As Russian version is placed under Lithuanian in public space communication, but Lithuanian headline was designed after Russian one in the newspaper, the controversial hierarchy were reproduced in routine everyday communication of Visaginas.

The bilingual inscription of the newspaper 'Energetik' as a form of visual representation embodies the desire for progress, expressed in the mechanization of labor, but in the Soviet context, combined with increasing demand in manual labor. Therefore, different approaches and forms of simulation of automated labor, in particular by means of a hand-drawn font, were becoming widespread in graphic production. The combination of manually made newspaper's headlines and the mechanical set of the rest of the newspaper, also represents the principle of the importance of the subjective, hand-made dimension of Soviet modernity. Soviet culture and language policy expressed in the slogan: national in form, Soviet in

content, juxtaposed to local and national traditions. Within the framework of the modernist program, the declared totality and homogeneity are realized in the form of tension, the visual expression of which is the malfunctions of hierarchies in communication in public spaces, as it happens with the headline design of Visaginas newspapers and in public space communication as it was revealed in previous part of the article.

## Collaborative design as a design of visibility regimes

Designer's professional optics allows to make focus on typography as part of city communication. Conflicting multilingual environment makes reconsider visual communication of the city in the context of tensions between authorities' regulations and everyday practices. As well as re-evaluate the position of the designer in the process of designing the projects, particularly connected with public space communication. Language vulnerability of Visaginas population reveals that designer is used (is made) to identify her/himself with the authority with intention to reach high level of functionality reducing or amalgamating differences (Scott J. 1999).

Study of the Visaginas case with the category of everyday life, in the interpretation of Michel de Certeaux (Certeau Michel de, 1990; Certeau Michel de, 2011), shows how important is the collaborative design process, aimed at production of visibility modes for tactics could be produced (voice, those who do not have access to legitimate channels of communication in public space). The educational interdisciplinary project, as a result, can be oriented towards design of the scenarios of reconfiguration of the institutional order, the strategies, according to de Certeaux concept of coexistence of oral and written communication.

The analytical model of the investigation of everyday life proposed by Michel de Certeaux, which posits the simultaneous existence of oral and written paradigms that explain the logic of disparate everyday practices, make it possible to study public space communication in the context of oral and written types of communication. The dominance of the oral paradigm in Soviet culture allows us to understand the function of writing as a daily practice and in the context of public space communication. The written paradigm actualizes cultural mechanisms that are structured according to „law“, private property, the "conquest" of space and individualization, while the oral paradigm is focused on the repetition of the familiar. In a culture where the oral type of communication dominates, "law" and private property do not matter, whereas everything that can maintain the integrity of the collective as a unity is highly appreciated. Taking into account that in the Soviet Union a huge amount of effort was directed first at the elimination of illiteracy, and then at the introduction of compulsory, eight-year, full secondary education, and that large quantities of literature, newspapers and periodicals were published, - the conclusion that in Soviet culture the oral communication type of communication was dominant may seem paradoxical. However, the role of the image (in comparison with text) in the dominant style of "socialist realism", legal practice, the distribution of "telephone justice", the absence of private property and so on, show that the practice of writing was aimed at consolidating the status quo of the dominance of the oral paradigm (Bonnell V. (1999), Boobbyer P. (2000), Greenwood, D. J. & Levin, M., (1998), Ong W. (2002).

In the post-Soviet period of Visaginas, attachment to previous forms of identity is preserved, i.e. 'professional' engineer background and Russian language (not a legitimate language after Soviet Union collapse – which is given a negative meaning in the current political situation) within oral type communication. Identity of local population, built around "professional" attachment to Soviet elites (nuclear power was a fairly privileged sphere), is considered in opposition to an identity based on national traditions, proposed by the Lithuanian authorities.

The questions on the floor are about strategies for integrating the Soviet past and the degree to which Soviet modernism is essential for identity in the global world for post-soviet countries. The issues of re-programming, reconfiguration, and refreshing the existing infrastructure in the context of creative industries, the global economy are also important.

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Different views on language by authorities and locals lead to the co-existence of official and partisan systems of visual communication in Visaginas. This raises the question what kind of approach to design of public communication should be chosen, in the context of changing social, political and economical environments such as Visaginas in its transition period from 'nuclear' past to unclear future. The participatory design (Greenwood, D. J. & Levin, M., 1998) leads to the idea of empowerment of local communities with the ability to more effectively control their destiny, in the case of Visaginas, it is more important to create channels for communication that will allow developing scenarios of the city future in collaboration.

## Conclusion

The research conducted in Visaginas has following framework:

Slow pace of the project and focus on visual representation of different stages the research allows to reveal sensitive topics and develop compassion to different social groups in Visaginas.

Elements of ethnographic approach to research allows to collect feedback on the way sensitive topics such as language issue are articulated and presented in the public space.

Results of the project are presented in as a book and uploaded in open access (Visagino 2016).

The malfunctions in reproduction of the language hierarchy may signify the identification of the residents of Visaginas with the Soviet paradigm of Modernity, with regard to invent an imaginary community.

The Soviet modernity were aimed not at production needs and demand, rather than industrial products, especially in the late Soviet period. This approach is based on the creation of social hierarchies, consumer requests were satisfied in accordance with established hierarchies (Oushakine 2014). Efforts to produce nuclear energy, as well as the city itself, the relatively privileged position of the technical intelligentsia in the socialist hierarchy of consumption of goods and services, created the prerequisites for the formation of an imagined community, which continue to exist nowadays.

Productivistic efforts in the Soviet era to produce the future literally (production plans and five-year commitments and intentions for their over fulfillment) and in the metaphorical (shifts in the language hierarchy in the newspapers - this is the production of a cosmopolitan future for the city, in which the connection with the national context was of small significance). In post-Soviet period the course of action is changing and directed to the production of the past, or rather, the production of the future in the past and legitimization of a Modernity project as a past which defines the future.

As design is institutionalized by the modernist program as a method of rational problem-solving, Visaginas, being a rational project, is a perfect space for the application of designers' efforts to reconsider the framework of professional foundations. The fact of participation and cooperation in the life of local communities of Visaginas, in dialogues with authorities allows us to consider the design as a facilitator in communication between authority and Visaginas population, to identify and make visible by mapping those processes that configure Visaginas' everyday life. The design project here is a process in which local communities, the municipality, political parties, non-governmental organizations are involved, creating an acceptable mode of visibility for each other, which is hardly possible with such degree of the existing political and cultural tensions.

In the process of reflection on what position the designer occupies in the process of researching the city of Visaginas as a case studies, rises the issue of sensitivity of designers toward cultural and historical, public issues and their interpretations toward current societal challenges. It allows to reveal the degree of emancipation of designers from traditional focus on production and socially-driven practice of consumption. Particularly it is important for Alla Pigalskaya

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post-soviet space where design as professional field is still in the process of institutional, economical reconfiguration.

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Figure 1 Manifestation dedicated to the celebration Labour Day on 1st of May, 1981

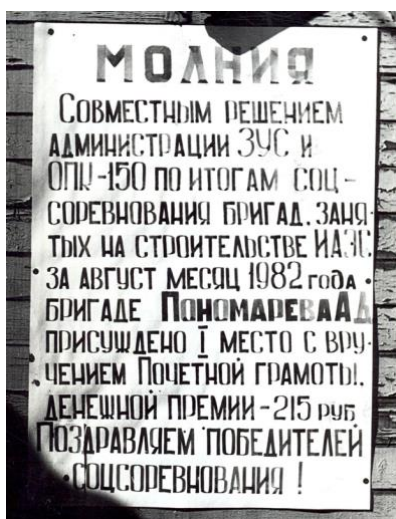


Figure 2 The Lightning – hand-made newspaper produced by NPP workers, the beginning of 80s





Figure 3 Hand-made signboard from Visaginas, 2016. Photo by Pigalskaya Alla

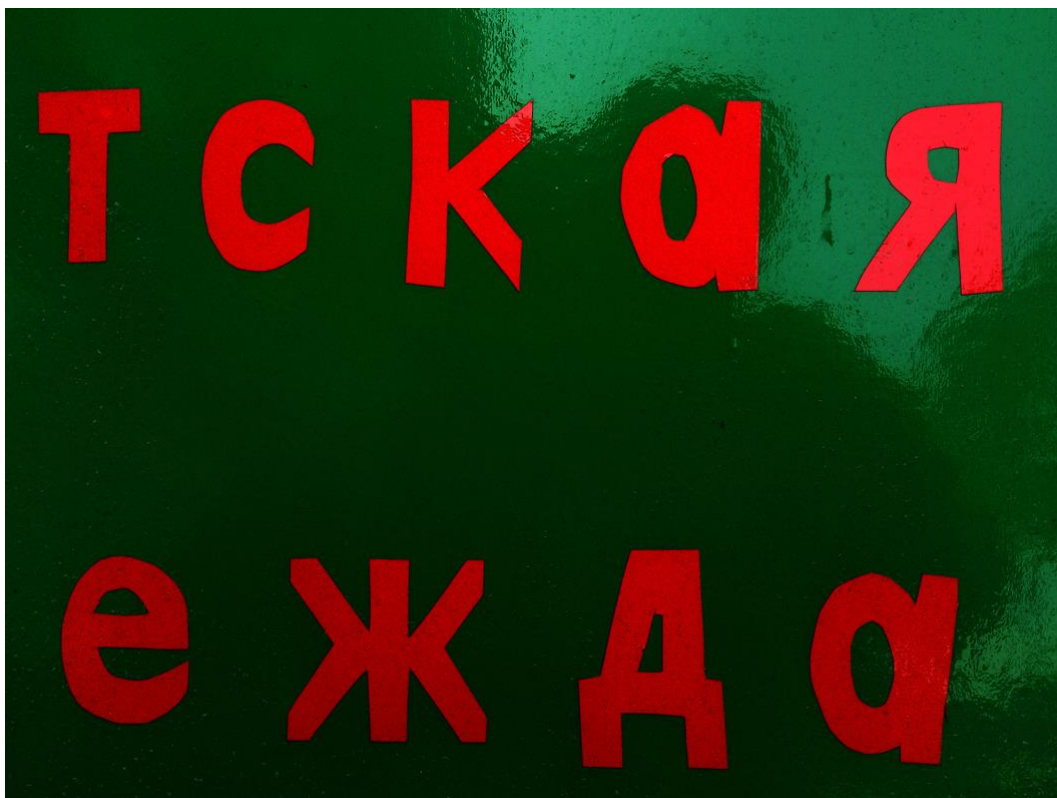


Figure 4 Fragment of hand-made signboard from Visaginas, 2016. Photo by Pigalskaya Alla





Figure 5 Hand-made signboard from Visaginas, 2016. Photo by Pigalskaya Alla



Figure 6 Graffiti from Visaginas, 2016. Photo by Pigalskaya Alla



Figure 7 Newspaper, issued in Visaginas Энергетик/ NPP Energy worker, 1980



Figure 8 Newspaper, issued in Visaginas Энергетик/ NPP Energy worker, 1980





Figure 9 Newspaper, issued in Visaginas Energetikas /NPP Energy worker, 1980



Figure 10 Newspaper, issued in Visaginas Energetikas /NPP Energy worker, 1981



Figure 11 Newspaper, issued in Visaginas Мирный атом/Peaceful Atom, 1988



Figure 12 Newspaper, issued in Visaginas Мирный Энергетик/Peaceful Nuclear Energy Worker, 1989





Figure 13 Newspaper, issued in Visaginas *Taikus energetikas/Peaceful Nuclear Energy Worker*, 1989

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## Service design for community based tourism - The Brazilian case study

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### Abstract

This article aims to demonstrate how low-income community and underdeveloped northeastern Brazil are organized independently to provide products and services of Community Based Tourism. For this we use the experience of Porto de Pedras community, that with the creation of a residents' association, organized the observation tourism Manatee Navy in its territory. In sequence presents the partial results of the case study started in this community by Design course at the Federal University of Alagoas. Finally, we discuss how service design can take advantage of this autonomy to help promote the development of these communities and the strengthening of the local identity sense.

**KEYWORDS:** community based tourism, service design, Brazil

### Introduction

In recent decades, new type of tourism has grown to offer alternatives to mass tourism. This article highlights, among them, the Tourism Community Based - CBT, in which the community comes together in clusters of, groups and / or associations to explore tourism in their territory and assets, reversing the benefits of activities for the own community. In Brazil, the CBT has been growing in small and underdeveloped communities, the case of coastal cities in the state of Alagoas, in northeastern Brazil, which, due to its prime location and environmental attributes, have great tourist potential, currently unexploited or exploited by Mass Tourism unsustainably.

Due to lack of Design Services support, almost non-existent in the region, these communities have, autonomously generated tourism products and services to welcome visitors interested not just know the place, but to establish symbolic exchange relationships with its residents. To evaluate this phenomenon and see how the design services can help when already installed, the improvement of these services for the development of these communities and strengthening their sense of identity, travel researchers design the Federal University of Alagoas - UFAL only public education in the state of design, conducted a mapping of coastal communities and the tourism services offered by them. The result of this research is presented in this article.

To better understand the needs of these communities, this text begins with an overview of the state of Alagoas, in Brazil, to then present the definition of Community Based Tourism and their contributions to improving the quality of life of the local population. Following, is illustrated State of the Art in the creation and autonomous product offerings and Community-Based Tourism services over the experience of the city of Porto de Pedras, that with the creation of a residents' association, organized the observation tourism the Manatee Navy in its territory and is transforming the local reality. Finally, discuss the autonomy of communities in the creation of tourism products and services, the impact of these actions to the population and the roles of front design services in this mode.

## Situating search: Alagoas, Brazil

The state of Alagoas is located in northeastern Brazil, hot climate region all year round and wide variety of endogenous biomes. Among the twenty-three Brazilian states is the second smallest in area of about 28,000 square kilometers and fourth nationally in population density (IBGE, 2017). Their human and social development indicators are among the worst in the country, as can be seen in Table 1, below:

ALAGOAS General data	Index of Gini <sup>1</sup>	IDHM <sup>2</sup>	poor%	Population in Extreme Poverty%	Illiteracy % Over 15 years	Yield Per capita \$
2014	0.50	0,667	47.84	8.69	21.97	161.00

Table 1 - Alagoas: Human Development Data

The data presented in Table 1 are part of the National Survey of Households - PNAD 2014 conducted by the Brazilian Institute of Geography and Statistics (IBGE, 2017) and point to the great inequality in income distribution in Alagoas. The income per capita monthly of its inhabitants is the second smallest of Brazil on average \$ 161, well below the minimum wage set by the federal government, currently at \$ 285.00. The general state literacy rate is 21.6% in some cities may be equal to or greater than 50% of the population. Life expectancy for men is the smallest of the country, reaching 66.5 years, and many premature deaths caused by violence, whose rates are high, reflecting the social disparity and underdevelopment (IBGE, 2017). In terms of sustainability, Alagoas occupies the 19th place in the national environmental pillar, which considers CO2 emissions, urban services, sewage treatment and disposal of waste. When it comes to social, the state is in 26th position (among the 27 federal states), which reinforces the need for investments and actions to improve human development, social equity and the quality of life of its population (CPL, 2017).

The economic basis of Alagoas, according to the share of GDP - Gross Domestic Product - are, respectively, services 68.70%, 19.34% and 11.96% agricultural industry. The production structure is unsophisticated and mainly focused on the cultivation and processing of sugarcane, predominant agricultural activity in the region since the colonial period. There is little government incentive for industrialization. This data, adding the climatic conditions of the state, marked by constant drought, coupled with low level of education and professionalism, make unattractive place for industries. Small enterprises, creation of cooperatives and local clusters are encouraged by the Secretary of State for Planning and Economic Development - Seplande (2017). However, according to the IBGE (2015), the state does not enjoy the full capacity of coordination between the various stakeholders in order to improve the quality of life of its population. Among the existing consortium, the largest number is formed between Municipal Public Agencies and the State Government

(IBGE, 2015). The participation of the private sector and communities exist, but in significantly reduced number front of others.

In this scenario, the participation of the Service Design becomes strategic, both in the identification of local potential, and in building systems to generate income through joints between actors from various sectors necessary to promote the development and sustainability. Among the most promising initiatives are those that focus on community-based tourism experience, whose characteristics are shown in sequence.

## Tourism community based: definition and implementation

The previous session presented some socioeconomic characteristics of Alagoas and, as seen, despite suffering with low human and social development, the state has great potential to significantly improve this condition opposite to the natural and cultural offerings of its territory and people. In this scenario, the development of tourism is a government priority, since it can benefit by creating services, its population of different regions. There are, however, fundamental issues to be discussed in this process, including 'how best tourism' to the state and the real socio-economic growth of the population. This session presents two forms of tourism explored in northeastern Brazil: Tourism Mass and Community-Based Tourism - CBT.

### Tourism definition of Community-Based -CBT

Tour sets the "movement of people, for a time, to destinations outside of their place of residence and the activities carried out during the time spent in the visited locations" (31 ° Congres de L'aies, 1981). In diverse forms, tourism drives the world economy and has grown even before the recent crises (UNWTO, 2016). As in many countries, in Brazil its economic potential is recognized and promoted by the Ministry of Tourism, federal government agency dedicated to the development of tourism activities within the national territory (Ministry of Tourism, 2017).

Among the most profitable forms and sought after in the country, both domestic and foreign tourists, is the so-called mass tourism, which, facing the middle class, offers travel packages at affordable prices and payment terms consistent with the financial availability of the users . In this mode, the packages can include tickets, accommodation, transfers, tours and food, causing the traveler does not 'worry' about these issues and just 'make use' of services offered (GhulamRabbany, 2013). There is therefore a form of passive visitor in their relations with local communities and visited, as these are constantly mediated by service providers.

Thus, for profit and large scale, Mass Tourism paralyzes the inherent tourism potential and standardizes the experiences, hindering the great visitor of the genuine experience of the site (Zaolaou, 2008). In addition, the Mass tourism often goes beyond the limits of environmental resilience and its negative impacts have been thoroughly described and evaluated over the past decades (GhulamRabbany, 2013). In social terms, their practices rarely involve the communities visited in an equitable and participatory manner, both with respect to the generation of direct and indirect jobs, as in decisions about the enjoyment of their space and their culture.

Against the mass tourism, other modality has grown and excelled in the country: the Tourism Community-based, emerging from proactive organization community or groups into associations or cooperatives in order to control their commodities (natural, cultural, symbolic etc. ), conceiving, organizing, providing and managing tourist activities in its territory (Coriolanus, 2006). In these cases, the community is the development agent and

subject itself because, knowing all the complexity, diversity and local realities (Bartholo et al., 2011) is able to make suitable offers to its characteristics, respecting their limitations.

Forms of community-visitor relations promoted by community-based tourism predict active players throughout the engagement process and are therefore based on mutual trust. While the Mass Tourism reduces the dialogue between community and visitors, minimizing the vividness of differences, artificializing them and reducing them to a folklore, the Community-Based Tourism promotes, making the actors "responsible and solidarity in their exchanges with other worlds" (Zaolaou, 2008, p.4).

The new tourist attitudes, felt and observed by academic, government and communities (Coriolanus, 2006), in a counter-movement of the masses, it has sought deeper relationships with the places visited, not only in fleeting change in habits, "but also ignored local cultural differences or rediscovery of what seems to them to be their own roots" (Zaolaou, 2008, p.6). In this sense, the key element for the establishment of The Community Base Tourism is the recognition and respect for the community of their condition and quality of 'site'. According Zaolaou (2008), website is:

*"(...) the shared belief space that defines the real, at any given time, as well as the concepts and practices of its actors (...) their beliefs, their knowledge and their behavior. (...) a site is, first of all, an immaterial entity, invisible. He secretly pervades the individual, collective behavior and all manifestations of a given region materials (landscape, habitat, architecture, know-how and techniques, tools, coordination mode and economic organization, etc.). from this point of view, is a "collective heritage" living that draws its consistency of "living space" by the actors. (Zaolaou, 2008, p.7)*

This 'worldview' (Zaolaou, 2008, p.7) are contained in the differences between one site and another, and between the community and visitors. It is in recognition of the differences born Identity (which is always dependent on these) (Woodward, 2000, p.40). Promoting therefore the recognition of the 'Identity Local' and its manifestations is paramount aspect of the Service Design Community Based Tourism as well as the commitment of its actors. In the next section, a Case Study in Community-Based Tourism developed in the state of Alagoas-Brazil and, as a result, the proposed application of Service Design by researchers of the Design course at the Federal University of Alagoas is presented (UFAL) .

## CBT case study: Porto de Pedras, Alagoas - Brazil

As previous session data, the Tourism Community Base shows how sustainable alternative to that of Massa, especially in low-infrastructure areas such as small communities, because involves the supply and management of tourism services that respect their cultural identity and their legacy immaterial, material and environmental. This session presents a case study of Tourism Community Base developed in the states of Alagoas: Marine Manatee Project in Porto de Pedras community. The data presented were collected through Literature Review and Interview Survey in situ. Further, it discusses the impact of this project to the community and analyzes how service design can foster community building and the creation of a sense of identity in the development of community-based tourism.

### Manatee Marine project - Porto de Pedras, Alagoas, Brazil

With the exception of the city of Maceió, the state capital, the coast of Alagoas, in its 230 km long, is dotted with small communities that integrate with numerous ecosystems reef and mangroves, developing different livelihoods from fishing and, more recently, through activities related to tourism (Correia & Sovierzoski, 2008). Much of this region belongs to APACC - Environmental Preservation Area of the Coral Coast, Federal Conservation Unit

for Sustainable Use established in 1997 by Federal Decree s / n° of 23/10/1997 with the aim of preserving the coral reefs, mangroves and all its biodiversity.

With more than 400 000 ha in area and about 120 km from the beach and mangroves APACC is the largest marine federal conservation unit in Brazil and is inserted between the states of Alagoas and Pernambuco. Its direct and indirect use is therefore regulated by the government through the approved Management Plan in 2013, which includes a description of the activities that can be performed on site, within the guidelines of sustainable development. Among them, this article highlights the Tourism Community Based whose actions, as described in the Management Plan, "aimed at diversifying the local economy encouraging the rescue of traditional activities consortium cultural enhancement and maintenance of biodiversity" (ICMBio, 2013) . It was within this premise that established, in the city of Porto de Pedras the Manatee Association - Tourism Community Based. However, before presenting the association, it is important to minimally meet the city of Porto de Pedras.

Situated on the northern coast of the state, Stone Harbor, beyond APACC also integrates the Atlantic Forest Biosphere Reserve -RBMA (Ministry of Tourism, 2012) and is part of the Local Productive Arrangement (APL) Coral Coast for tourism, which has the participation of public agencies, private sector, entrepreneurs and associations of the eight municipalities of its territory (Costa et al, 2012). With only 8000 inhabitants, the city is part of the statistics of low socioeconomic development of Alagoas presented above (Figure 1), having no sanitation and other infrastructure and services considered basic for the population. It has the highest illiteracy rate of APL and the lowest number of companies involved in their activities (Costa et al, 2012, p.12).



Figure 1 - Porto de Pedras Community. Author: Globe, 2014

According to the Department of Planning and Economic Development of Alagoas - Seplande (2014), 70% of the city's economy is generated by services, many of which related to tourism. Its infrastructure, which has only two hotels and few restaurants does not carry accommodate the number of visitors looking for local attractions. (Seplande, 2014). These overnight in nearby towns or in the capital Maceió, which far only 100km and owner of the nearest airport.

Against this backdrop, it operates the Manatee Association - Tourism Community Based. Its foundation took place in 2009,

*"From the desire to fight for the rights of the community to enjoy nature with conscience and responsibility, discussing and proposing solutions to local problems, united to a group of motivated community guides initially by conflicts around the observation tour of ox-sea fish in natural environment "(Manatee Association, 2017).*

The Manatee Marine (*Trichechus manatus*) (Figure 2), also known as Manati and around which formed a community association, is a mammal in 'critical threat of extinction' at the national level since 1989 (MMA, 2010) . Described as 'vulnerable to extinction' by the International Union for Conservation of Nature (IUCN, 2012), the species is also listed in the US as "threatened" by the US Endangered Species Act since 1973 (ICMBio, 2011).



Endemic among the coast of the US and Brazilian Northeast, Manatee Marine can weigh up to 600kg and measure 4 m long. Despite the size of this mammal is herbivorous and feeds mainly on grass and seaweed, having an important role in environmental balance location. Pulmonada of breath, need to constantly come to the surface to breathe, which,



Figure 2 - Manatee. Author: Manatee Association, 2017.

For the preservation of the species, the Chico Mendes Institute for Biodiversity Conservation, together with the Ministry of the Environment created the National Plan (PAN) Conservation of the Sirenia involving both the preservation of its natural habitat, as the management of specimens. protocols were generated for your constant monitoring and local rescue and created for receiving, processing, quarantine, rehabilitation and, where possible, their reintroduction into the wild. Stone Harbor was chosen as the basis for the latter stages: rehabilitation and reintroduction, including the period of adjustment or upgrading the Manatee rescued or born in captivity to the natural conditions, what happens since 1994 (ICMBio 2011, p.32 , 33). The estuary of the River Tatuamunha was chosen space and adapted to these activities, as can be seen in Fig.

Confined in these areas, however, the Manatee was vulnerable to hunting, fishing, the engines of the boats and the possible environmental imbalances (destruction of fauna, flora or pollution) generated by the local population and / or tourists. It became therefore imperative to sensitize the community to the protection of the species and one of the forms of education was to point the possible income generation by observing the Manatee in natural habitat. Thus began the Observation Tourism, which, as pointed out earlier, generated conflicts among its managers. These conflicts and the desire to organize around community management of equity in 2009 was the Manatee Association created, along with the "Conduct Adjustment Term (TAC) for spatial observation of manatee tourism in APA Coral Coast,

### Manatee Association and Community-Based Tourism in Porto de Pedras

The Manatee Association is made up of locals, fishermen and students, all inhabitants of the municipalities of Porto de Pedras and São Miguel dos Milagres. Currently, according to its President, Mr. Antonio Santas are 53 members: 20 drivers ride to the Manatee Sanctuary, 23 paddlers, plus artisans and collaborating partners. The community organization around an association gave rise to the Tourism Community Based in Porto de Pedras, in the above manner.

The Manatee Association of working conditions were, until 2014, very precarious, without even a receptive venue for the visitors, who were captured by fishermen in access to city

roads and led directly to the performance of the drive. Despite being part of the tourist routes in the state of Alagoas, investment in this his activities were and still are ignorant or zero. United with a common goal, members purchased land near the entrance to the swamp that leads to Tatuamunha River and began the construction of a place to carry out their administrative activities and receive tourists, following the investment possibilities of the partners.

In 2014, however, the Association signed up to participate in a frame on a television program whose goal is to "show (...) examples (...) hidden in communities throughout Brazil, that even with a small income, are always thinking of turning the environment where they live and help others "(Ball, 2014). As a contractual clause, the participants undertake to contribute, through their work and / or service provided in your property for improvements in their community (Globo, 2017). Contemplated, the association had completed the construction of its headquarters, whose architectural design considered the needs and activities performed and devised by the group, creating a space for receiving visitors, outside the waiting area, administrative rooms, mini auditorium, workshop for the production of consumer products and shop for your marketing. This phase included the participation of designers who worked on the redesign of the visual identity, website, printed generation and especially in the generation of products that could be made by local people and sold to visitors as a way to generate another source of income besides tourism Note.

In 2016, the Design Stroke researchers at the Federal University of Alagoas, started a survey in the region to establish partnership for design services related to community-based tourism. The partial results are shown in sequence.

### Service design - the beginning of a partnership with UFAL

As shown through the Case Study Porto de Pedras, it is found that with the process of empowerment and inner union, communities can create products and services to establish and manage their territory through CBT. The study shows that even in conditions of underdevelopment and without the participation of Service Design, these communities are able to generate and offer experiences value. That said, the question is how the Service Design can then contribute to the development of these communities and strengthen the sense of local identity, pre-established. This session presents the proposed partnership between the Manatee Association and the Design course of UFAL, whose goal is to refine existing services, propose adaptations, changes and new services in order to promote the acceleration of local development.

		Stage	goal	Method	Instrument
current context	1	Mapping of existing products and services	Identify existing products and support services to tourist activities;	Case study	site visits; interviews; image capture and sound;
		Evaluation of User Experiences	Evaluate the experiences of users in every step of the offered services	Case study	Interviews, questionnaires, analysis of online reviews on specialized sites, <b>Blueprint mental models;</b>
Opportunities Identification	2	Mapping the human resources of Porto de Pedras Community	Identify people and skills; Identify the needs and desires of the community;	Case study	Semi structured interview; mental models;
	3	Mapping of environmental resources for the practice of tourist	Knowing the environmental laws governing exploitation of local tourism; Identify new exploration opportunities for tourist activities	Case study	Literature review; <b>Ecosystem maps</b>



		activities	Establish operating limits for environmental sustainability;		
	4	Mapping User Expectations	Identify user expectations Check the alignment of supply and expectations Identify voltage points Eliminate points of tansão	Case study	Map of Experience; Alignment diagrams;
	5		identify strategies	Case study	
	6	Mapping of offers from neighboring communities	Identify products and services offered by neighboring communities; Identify opportunities for cross-integration;	Case study	spatial map
Service Design	7	Service co-design	Present the results of mapping the community; Align internal and external values; Generating improvements to existing services; Offer new services; Generate new services; Strengthen local identity;	Case study	mental models Working maps Service Design;
	8	Services Deployment	Offer the services to the community and visitors	Case study	
redesign	9	Check to investigate the effectiveness of services	Identify voltage points Identify possible improvements	Case study	Returning to steps 1, 2, 3, 4, 5, 6
	10	Co-redesign services	Propose improvements to the generated services	Case study	Return to step 7

**Table 3 - Design service for community based tourism**

As shown in Table 3, are placed 10 development stages that have four distinct phases: lifting the current context with the mapping and analysis services and experience generated; mapping opportunities, with the main objective of deeply knowing the site and align expectations; service design, which appears in the refinement of existing services and proposing new services and relationships, and finally, after implementation, monitoring of the results for possible redesign. The tools suggested for each step are shown in the literature by Kalbach (2017), Stickdorn and Schneider (2014), Meroni and Sangiorgi (2011).

Until this moment, the steps were performed 1 and 3 and is in progress Step 2 - Evaluation of the experiences of users of existing services. For this article, we present only part of the development of phase 1, which consisted of a preliminary survey of existing products and support services to tourist activities in Porto de Pedras region. The remaining steps are executed and completed in sequence. The results of this case study will be used as guidance for the design services for the Community-Based Tourism in several other coastal cities of Alagoas.

### **Preliminary results of field data**

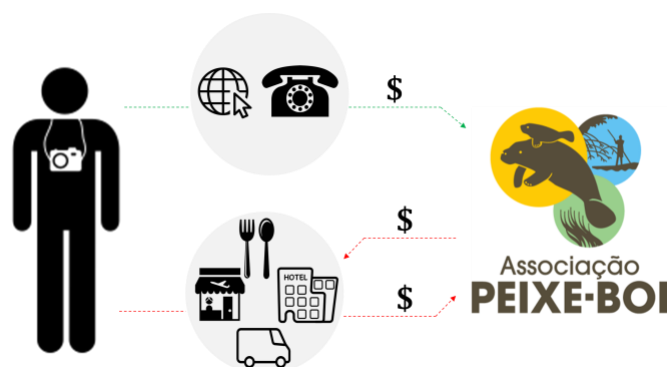
The first step began with raising theoretical data for an overview of Porto de Pedras and Manatee Association. A summary of the results was presented in the previous section. In result, there was a collection of field data through three site visits, which allowed the researchers to know the existing facilities, as well as experience the experience of the services offered. As a result, it was possible to establish the dynamics of the service and map interfaces between actors. That said, there is the manatee's watching tourism in Porto de Pedras consists of the following steps:

Stage	Responsible
	autonomous tourist Lodging Facilities

1	Tourist capture	restaurants Tourism agencies Tour packages - Tour vans Maceio
2	Tourist Reception	Association Manatee
3	Lecture on Manatee and local biome behavior guidance during the ride	Association Manatee
4	Walk by track suspended over Mangue	Association Manatee
5	Embark on raft and navigation	Association Manatee
6	Stop watching	Association Manatee
7	Return and landing raft	Association Manatee
8	Return - Walk for suspended track on the Mangue	Association Manatee
9	Check the Manatee Association - product offering	Association Manatee

**Table 2 - Observation tour activities at Porto de Pedras community**

As Table 2, the capture of tourists can be given by different routes. According to the president of the Manatee Association, Mr. Antonio Santos, this funding is always made indirectly, ie, the tourist goes to the Association. On the Internet to offer the tour can be found on the Association's website at tourism sites and social networks. When the offer is made by agency or tour guides, lodging and feeding means, they receive \$ 1.50 per tourist captured. This relationship is depicted in Figure 3. The tour costs \$ 14.50 per person and lasts for 90 minutes. Visits to occur between 10 AM and 5 PM. To be allowed to enter only 60 person per day in the Sanctuary, the previous schedule especially in high season is required.



**Figure 3 - Beginning of the Consumer Experience and Capture the Tourist. Author, 2017.**

Upon reaching the Association, tourists are welcomed, and the first contact with one of the members, responsible for scheduling and payments. After confirming the time, visitors are directed to a lecture on the Manatee and its Sanctuary, in which they learn about the fauna and local flora, on the preservation of the manatee project and the rules for observation tourism. Under no circumstances can touch the animal, or feed it, even if it interacts with the vessel (some have a habit of putting his paws on the raft). The tourists are prepared for the possibility of non-ox sighting of fish, as they are free at their habitat, or may not be made to see during the ride. Once the lecture, there is beginning to visit with walking through a trail through the mangroves of the region (Figure 4) leading to the bank of the River Tatuamunha. Accompanied by an associated guide, tourists will have a class on the biome of the mangroves, stopping to observe the fauna and flora. The walk culminates with the arrival of the vessel, human-powered, to the confinement of animals in local adaptation, however, all the way one can see manatees. The descent of the river is made on rower company and guide, both often trained and qualified for the functions. The summit takes to reach the surrounded containing mothers and cubs, before which the vessel remains for consideration and final classes. to the containment of animals in local adaptation, however, all the way one can see manatees. The descent of the river is made on rower company and guide, both often trained and qualified for the functions. The summit takes to reach the surrounded containing mothers and cubs, before which the vessel remains for consideration and final classes. to the containment of animals in local adaptation, however, all the way one can see manatees. The

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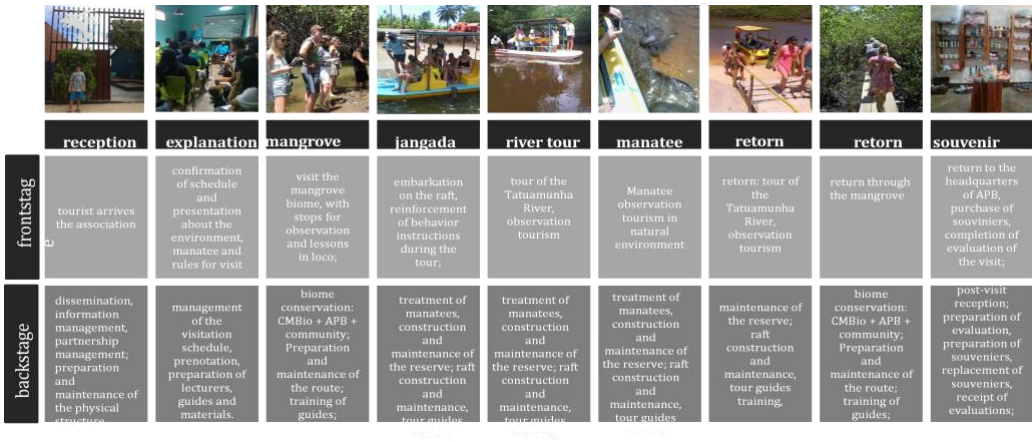


Figure 4 - Core of Manatee Tour Experience - BluePrint. Author, 2017.

The return is through the same path to the Association. Back at headquarters, tourists are invited to acquire images made during the tour, as well as souvenirs (Figure 5) for sale in the small shop of the project and made by community artisans. Among the products beyond regional, are those proposed by the TV show's designers already mentioned, including: handmade soaps, environment Flavors, scented waters for sheets, keychains, calendars, stuffed animals, shirts, caps, slippers, crockery, pens, calendars. All inputs and machinery for the manufacture of this product and community training, were donated by the partners of the television program.



Figure 5 - Manatee Association Souvenirs.<https://www.facebook.com/associacaopeixeboi/>

Although the original design Globo provided for the manufacture of products in the headquarters of the workshop, after training, many local residents took these services, some of which have opened their own home stores to meet the visitors, always using the manatee identity as the base. Therefore, it is in the services and products around the community-based tourism develops much of the local economy and made real community identity. Stone Harbor is currently the city's Manatee Marino.

## Discussion

In this article, it was noted that the benefits of the Community-Based Tourism and the formation of the Manatee Association for the city of Porto de Pedras and its inhabitants, even if still modest, are palpable. Today the association is supported by government partners, private and NGOs, responsible for the income of many families. In addition to activities related to watching tourism, the association participates in the Green City Project, which promotes the cleanliness of the beaches of Porto de Pedras and São Miguel dos Milagres through task forces formed by fishermen and entrepreneurs. It also carries out social and educational activities with the population and debates between the civil community and government agencies to improve the quality of life on site. Through its members, the association is involved in participatory management processes, This union of the population in search of improvements to the site is facilitated by the notion of belonging to this community and this identity. As Association, the population can participate in social projects selections to capture the public initiative incentives and private, national and international initiative that benefit directly or indirectly the whole population. Aware of your needs if empowers the search for solutions to their problems, dreams and realize and do not appear more like just statistics waiting for public policy solutions. Based on the data presented, is that the identification of an opportunity for a community and exercise their autonomy as site contribute effectively to it to take possession of the tourist routes in its territory and, even without the aid of design, conceive and oferte quality products and services to visitors from around the world. The conclusion is that communities, although poor, with the aid organizations that promote the recognition of their identity have the ability to establish relationships with internal and external stakeholders, creating networks in the form of participatory economy, which generate profits for everyone involved and community development.

## Conclusion

This article showed that in low or no industrialization places like the coastal towns of the state of Alagoas - Brazil, the supply of Community-Based Tourism services may represent a viable alternative work and desirable. It has also shown that these communities are able to autonomously generate quality products and services that minimally meet the expectations of users. In this scenario, it is concluded that participation of the Service Design, although not employed at first, can help to refine existing offerings and identify new opportunities. Through the use of tools such as diagrams, maps and blueprints, you can see the community the negative and positive points of offers and promote alignment between your desires and possibilities with the desires and mental images of users,

It follows also that communities are strengthened with the creation of associations, groups and clusters and that this movement can be of great use to as Service Design can facilitate dialogue with the community and the understanding of their identity factor fundamental for the effective co-design of services. In addition, it was shown that the approach of the design of educational institutions is desired by these communities, eager to aid their development and improvement of quality of life.

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# Empowering community volunteers through matchmaking services

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## Abstract

In Rotterdam, the participatory turn has spurred various bottom-up communities around public parks. These communities aim to take care of the parks in their neighbourhood and search for ways to demonstrate the societal value of their initiative. The current work explores how digital matchmaking services can strengthen community relationships. A research-through-design approach is applied to identify the main barriers hindering community participation. The final design Park Makers uses both Citizen-to-Activity matching and Citizen-to-Citizen matching as ways to engage citizens in the community. The corresponding research demonstrates that connecting park users (or better: future volunteers) with another citizen or activity matching their personal interest fosters community engagement. From this point of view, it might be interesting to focus further research on the potential value of other matchmaking principles, or even other services, for bottom-up citizen communities.

**KEYWORDS:** citizen participation, community engagement, public parks, service design, social cohesion

## Introduction

Cities are facing a participatory turn. This shift is, on the one hand, driven by top-down voices, such as the promise of smart cities, the big society, and the corresponding decentralization of the social domain (Mulder, 2014). On the other hand, autonomy is a fundamental human need, emphasised, among others, in the self-determination theory (Deci & Ryan, 2000). The need for autonomy drives people to exercise responsibility and exercise control over their social and physical habitats. The participatory turn has spurred a demand for new forms of self-organizing governance. The Municipality of Rotterdam has embraced the “Right to Challenge” (Right to challenge, 2017), as part of their transformed governance structure aiming to enhance active participation. This (citizen participation) policy instrument has stimulated the upraise of several bottom-up initiatives around Rotterdam public parks – the “park communities”, aspiring to self-manage public parks in their neighbourhood.



In a preliminary inquiry into the park communities, we investigated the stakeholders of these communities and their relations among each other (Slingerland, 2018). This inquiry distinguished four stakeholder roles. *Park coordinators* are key-figures in the community, who have a large network and experience in setting up a citizen initiative. They keep an overview of the management of the park. *Board volunteers* are citizens who have taken formal responsibility to take care of the park. They facilitate and organise the several activities that take place and think about the future of the park. *Regular volunteers* are people, who live close to the park and/or visit the park for their (social) activities, and regularly contribute to volunteering tasks to maintain the park. *Park users* are citizens that occasionally visit the park. Figure 1 gives an impression of how these different groups interact within the park.



Figure 1: Park coordinators, board volunteers, regular volunteers and park users meet each other in their neighbourhood park.

We have observed a “participation divide” between park users and other, active park community members. At the moment, park users are marginally involved in organising or participating in the community activities. This is a problem for park communities, because involving more citizens in the initiative is an important factor for a community to become mature (Rowe & Frewer, 2000). Also, overcoming the participation divide can help with sustaining participants’ engagement after the initial start-up enthusiasm. Interestingly, park users are oftentimes open to participate more actively in the community, but are unaware of how to get involved. This lack of awareness is omnipresent, despite the efforts of park initiatives to attract new park users by actively organising various activities to recruit new volunteers. In response to this problem, we distinguish two different engagement strategies. One engagement strategy is based on *enhancing the activity* park users already do or intend to do in the park, such as strolling, doing sports or having a family picnic. The other engagement strategy is based on *providing added value* to park users in return for their participation, for instance learning a new skill or meeting interesting people.

Due to contemporary technology, meeting people is no more limited to the physical space, and instead often happens digitally (Hampton & Wellman, 2003). There are many best practices of using digital social services to foster building of friendships or relationships among people. In particular, digital matchmaking services that prompt people to contact each other based on their shared interests are increasingly popular (Flanagan, 2014). These services are a specific type of social media, on which people create a profile for themselves to find others (Golbeck, 2015, p.211). Although *matchmaking* is often associated with romantic relationships, one could consider applying same principles to other domains of life. These services use people’s characteristics, interests and motivations to propose potentially interesting people to contact.

The aim of the current work is to explore how service design in general, and design principles of digital matchmaking services in particular, can foster citizen engagement and strengthen community relationships. In the present work, we elaborate upon the design principals of digital matchmaking to engage park users in bottom-up communities.

## Service design for community building

Traditionally, services are understood as experiences between provider and user, often designed with a co-creation approach. Researchers have shown the potential of service design to go beyond co-creating client satisfaction and economical value, by describing case studies on how service design redefines social interactions and creates new patterns among actors (Cipolla, Joly, Watanabe, Zanela, & Tavares, 2016). Understanding services as social relationships, opens up the potential for services to foster community building. Service design for social innovation allows designers to identify and use the current operational model of citizen initiatives to create new models by enabling new relationships (Joly, 2015). At the same time, governments increasingly acknowledge the potential of design to find innovative practices of governance and citizen services (Bailey & Lloyd, 2016; Deserti, Rizzo, & Cobanli, 2016).

Citizens are intrinsically motivated to engage with their neighbourhood (Juujärvi & Pessa, 2013; Mulder, 2015). Several digital platforms or applications are already available for citizens to meet people in their neighbourhoods. Nextdoor is a platform specifically designed for neighbourhoods (Masden, Grevet, Grinter, Gilbert, & Edwards, 2014), and provides a digital space for citizens to interact about their neighbourhood. Other services like Craigslist (Kroft & Pope, 2014) are not intended for establishing social connections, but are often used to get into contact with people inhabiting specific areas. Similarly, Airbnb, which is now mainly used for finding holiday accommodations, was started up as a platform for building friendships through sleepovers. At the same time, using generic social media platforms for establishing social connections in a neighbourhood is also common.

Involving citizens in bottom-up communities is not straightforward. Current community platforms do not address the diverse motivations of people to participate. Interestingly, other types of services, for instance in the world of online dating platforms, seem to have found the key to engaging and connecting people. These platforms are specialized in matching people based on personal dating profiles. For example, applications like Tinder illustrate how matching can be simple and quick, using a picture and some personal information. Although citizens are not necessarily looking to find a date in the community, becoming involved in a community has to do, as with dating, with connecting mutual interests. Therefore, a service that is based on matchmaking principles promises to stimulate bottom-up participation and to strengthen community relationships. In the remainder of this paper, we explore the matchmaking concept based on personal interest as a motivational strategy to engage newcomers in the community. The corresponding question is: how can matchmaking principles be used to develop a service that addresses the diverse interests of citizens and strengthens the community relationships at the same time?

## Matchmaking and community services

Current matchmaking services connect one person with somebody else with matching interests (Figure 2). Using matchmaking principles in community building, however, implies that a huge variety of people can be connected to many other users, based on their preferences and personal profiles. It can be assumed that these principles are also a helpful strategy for lowering the threshold of participation by creating a tailored connection between each unique park user and the park community. In that way, the service would offer a tailored connection to the park community for each user, based on their personal profile.

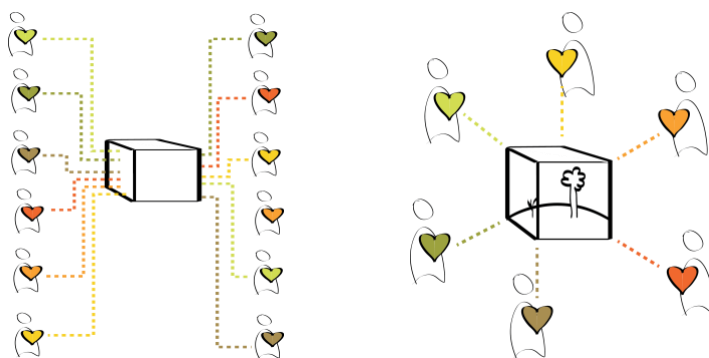


Figure 2: Current matchmaking services connect a huge variety of users based on personal profiles (left). The principles of matchmaking could be exploited to create a tailored connection between each user and the park community, based on the personal profile (right).

In keeping with the common distinctions between communities of interest and communities of practice, we refer to communities as “groups of people who share concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2011). In similar vein, citizens can be matched to the park community on two levels: activity-based matching (Citizen-to-Activity) and interested-based matching (Citizen-to-Citizen), see Figure 3. Citizens can be matched to a certain practice, for example, organising an activity in the park aiming for neighbours to meet each other. Different types of citizens can participate in this practice based on their personal interests, for instance by cooking a meal for during the event or designing flyers for the promotion. Interest-based matching is then based on the personal interests of citizens, not being bound to a certain practice, creating a community of interest (Obst, Zinkiewicz, & Smith, 2002), for instance an interest in flora, and exploring this interest in the park with other citizens.

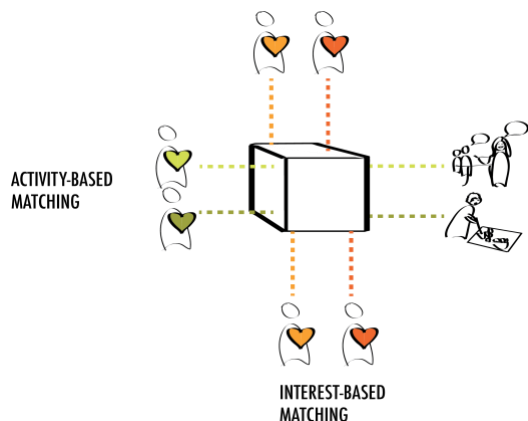


Figure 3: The platform offers matching on two levels: activity-based matching (Citizen-to-Activity) and interest-based matching (Citizen-to-Citizen).

## Approach

A research-through-design approach (Stappers & Giaccardi, 2018) has been used to explore how matchmaking principles can be exploited to activate citizens and strengthen the community relationships. Specifically, such a constructive design research approach allows to discover the main problems of engaging citizens and strengthening community building, while designing. The presented study, therefore, not only delivers a service design, but also design guidelines for using matchmaking to enhance community participation. The design

goal guiding the service design process was to use a digital platform to persuade citizens to get involved in the park community. Accordingly, the research question of interest was: How can a service design make use of matchmaking principles to engage citizens and strengthen relationships in bottom-up initiatives?

The design process was led by the first author of this paper (as part of a graduation project), and was supervised by the second and third author. The double diamond model (Design Council, 2005; Buijs, 2012), alternating diverging and converging activities, and the 5 principles of service design (Stickdorn, 2011, p.34) guided the service design process. Various (service) design techniques (van Boeijen, Daalhuizen, & Zijlstra, 2013), such as how-to's (p.127), scamper (p.123), customer canvas (Stickdorn & Schneider, 2011, p.158) and service blueprint (2011, p.204) were applied in three iterations of diverging and converging and led to the design result. In a next step, the resulting service design was used to study the value in use to foster community participation. Figure 4 shows the research-through-design approach highlighting the two processes of *designing* and *researching* the service design.

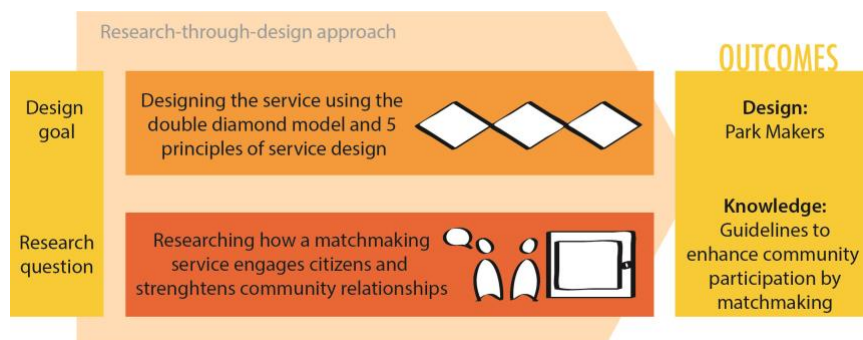


Figure 4: The research-through-design approach distinguishing the service design process and the corresponding research (the resulting outcomes are described in the results section).

## Service design process

The research focused on two park communities in Rotterdam and interviews were both held with park visitors (the park users), and coordinators of the park. In total, 24 park users and 3 park coordinators participated in the process. The service has been developed in keeping with agreed upon service design principles and using several diverging and converging design techniques. In short, design requirements resulted from stakeholder interviews (*co-creative, holistic*); three diamond iterations were executed (*sequencing*); user scenarios were developed to experience the service from the user's perspective (*user-centred*) and ideas for physical artefacts to complement the service were generated (*evidencing*). The process of designing the service consisted of three iterations of diverging and converging, as illustrated in Table 1. First, the design goal was reformulated to several "how-to" questions, all addressing the design problem in a unique way to stimulate creativity and idea generation. The resulting large set of ideas that (partially) solve the design problem were then converged towards a simple service concept, and consequently detailed according the following 5 elements that followed from the context analysis:

- Role of the park community: What role does the park community take in the matching process and how is this facilitated in the platform.
- Role of the park user: What does the park user need to do in order to match with the park community and how is this facilitated in the platform.
- Become involved: The way the platform is making use of matchmaking to involve the park user in the community.
- Mutual exchange: What does the park user gain from participating and how is this facilitated in the platform.
- Different interests: The way the variety of interests of park users is addressed in the platform.

The scamper-technique (Van Boeijen et al., 2013, p.123) was used to diverge again. With this technique, the service design is confronted with provoking questions, to stimulate creativity and to find extra features for the design. To converge, the features, functions and flow of the service are brought together in one service design concept. A final iteration has been made using the customer canvas to identify various potential user scenarios (diverging) which have been converged towards one service blueprint, summarising the flow of the final service design.

Nature of the activity	Design technique	Envisioned outcome
Diverging	How-to's	A set of ideas
Converging	5 elements	Ideas detailed on the five elements
Diverging	Scamper	Extra features to be added to the design
Converging	Concept	A concept design
Diverging	Customer canvas	User scenarios for different types of users
Converging	Service blueprint	A detailed flowchart of flow of the service

Table 1: Three iterations of diverging and converging activities led to the final design.

## Researching the value of the design

As part of the research-through-design process, the developed service design is a means to study the value in use. The service design concept was evaluated for its value for community participation, and citizen engagement in particular, and strengthening community relationships. To properly assess the value on the mutual relationships in the community, the service concept was evaluated with both park users and park coordinators.

***Evaluation with park users.*** The digital service was evaluated with park users to find if it supports the engagement of citizens. One function of the service was selected to prototype for the research, based on its feasibility. The activity wall function was suitable to be prototyped in the timespan of the research and using the available resources.

To allocate participants for evaluation in context, citizens who visited one of the public parks were approached. Citizens (n=24, 10 citizens were male) filled in a questionnaire that asks about their personal interests, park visit frequency and involvement in the park. Five specific questions were asked to determine the involvement of the park user in the park community:

- 1) How often has the participant visited the park in the past week?
- 2) How involved does the participant feel in the park?
- 3) Did the participant talk about the park with others?
- 4) Has the participant considered to participate in one of the park activities?
- 5) Has the participant ever looked on the social media pages or website of the park?

The participants were divided in two groups. Group 1 only received a second questionnaire one week after they filled in the first one in the park. The second questionnaire contains the same questions as the first one, so that the answers can be compared to find involvement changes over time. Group 2 received an email with information about the park community and a selection of upcoming activities in the park that match the personal interests of the participant. An example of a selection of activities is illustrated in Figure 5. A couple of days later, group 2 received the second questionnaire and was asked to fill it in. The results of the first and second questionnaire were analysed and compared to understand how the service influences the involvement of citizens.

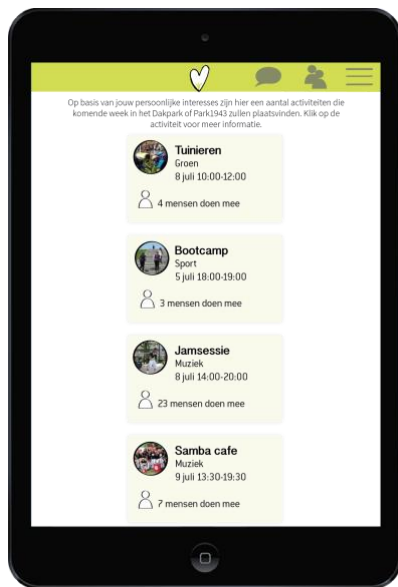


Figure 5: Upcoming park activities that match the personal interests of the participant were sent by email.

**Evaluation with park coordinators.** Since the park board has a different view on the park community, the platform was evaluated with them as well. Semi-structured interviews with three citizens (all female) that have a coordinating role in the park were held, aimed to find how the park board envisions the value of the design in their park. During the interview, the aim and the different functions of the service were explained using a storyboard and printed screens. The participants were asked to give their opinion about each function and the scenario of use. Finally, we discussed how they envisioned the service to be used in their park and how they would see their own role in the platform. These interviews were audio recorded and analysed using the recordings.

## Results

The results of the performed research through design process are two-fold. They consist of a design output, and the knowledge generated in the process of designing.

### Resulting design: Park Makers

The service design process led to the final design of Park Makers, a digital platform that on the one hand matches citizens based on their personal interest, and on the other hand matches park activities to the personal interest of citizens.

**Matching citizens.** The matching function allows park users to connect with other citizens. By creating a profile, citizens can match with other citizens based on their skills and personal interests. Based on the profile information of the park user, the platform suggests profiles of other citizens that have similar interests and skills.

The matching screen shows a quick version of each profile with the information necessary to decide whether to match or discard the profile (Figure 6). When a match is made, the park users can chat and set up a meeting in the park. A pop-up indicates that the user has a new match, and the user can immediately start a conversation with their newly made match.



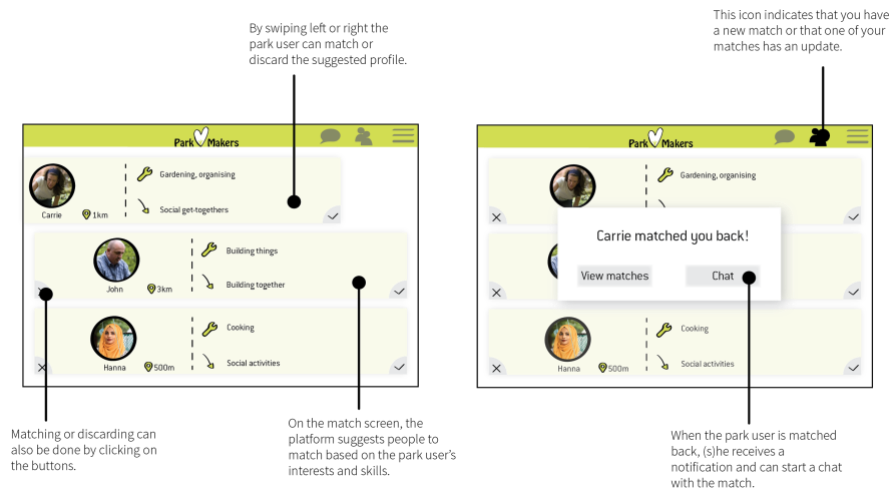


Figure 6: Based on the profile information, the platform suggests profiles of other citizens to match.

**Matching activities.** Using the activity wall, citizens can match activities they find appealing. On this wall, the platform shows upcoming activities in the park, see Figure 7. These activities can be organised by the park coordinators, but also by one of the park users. The activities are sorted based on the personal interests of the citizen, so that (s)he will see activities that match her own interest first. This type of matching is in keeping with the theory of communities of practice (Wenger, 2011).

The interface displays basic information for each activity, including the name, category, date and number of joiners. By clicking on the idea, the park user triggers the display of the detailed information of the activity and the prompt to participate in the activity. By opting in, the citizen establishes a match with the activity. The activity needs a predefined number matches in order to take place. Besides matching, the park user can ask questions to the activity organisers, or offer help in executing the activity.

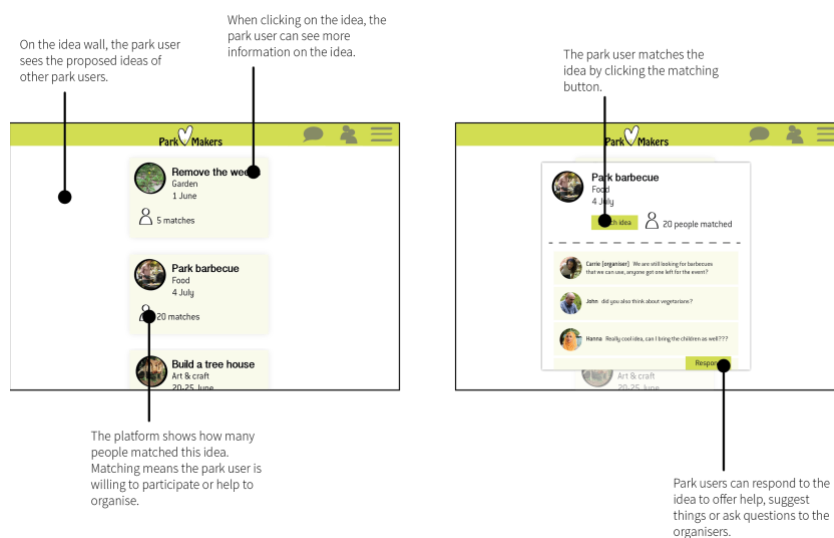


Figure 7: The designed platform shows upcoming park activities that match the interest of the citizen.

## Research outcomes

The service design was evaluated with two stakeholder groups: park users and park coordinators. The evaluation provided insight in how the application of matchmaking in the service fosters community relationships and participation.

***Evaluation with park users.*** In total 24 citizens participated in the research, which were divided in two groups of 12 participants. The first questionnaire provided insight into the personal interests of park users. Participants were able to choose interests from a list and could add more interests. Some interests were popular amongst participants (sports & moving [n=15], being outside [n=14], music [n=12], meeting people [n=10]), while others were mentioned less often (cooking [n=9], nature [n=8], gardening [n=3], crafting [n=2]).

Interestingly, these answers show that not many visitors have interest in gardening (n=3), whereas the main park activities are focused on gardening. Since park users are more interested in sports (n=15), social activities (n=10) and being outside (n=14), the park activities do currently not match the demand from the park visitors. The park community might therefore be better understood as networked publics (Mosconi, Korn, Reuter, Tolmie, Teli, & Pipek, 2017; De Lange & de Waal, 2013), in which activities and engagement are heterogeneous.

On the first questionnaire, 5 out of 24 park visitors indicated that there are not enough activities happening or that they do not know where they can find these activities. They would like to participate, but do not know where to start.

Participants in group 2 wrote on the survey that they liked the proposed park activities. However, they did not always match the schedule of the participants, but matched their personal interest. This shows that time is an important factor to participate, the activities should match the availability of the park user. The participants expressed to, in the future, participate in one of the activities and started to follow the social media pages of the parks, so that they would stay up-to-date.

Participants looked on the social media page or website of the park to see what else they can do and how they can participate. One participant expressed that still the barrier is too high to do something in the park, especially when you are just alone.

***Evaluation with park coordinators.*** Four citizens with a coordinating role in the park were interviewed. The coordinators indicated that the matching function visualizes the different park users with their unique motivations and interests. The idea wall on the other hand creates an overview of the diverse activities taking place in the park. These two elements allow the separate groups of park users to obtain an understanding of each other's interests and to get offered personalised activities matching these interests. Likewise, these two functions provide the park board insight in the users of the park and their interests.

Many citizens living around the studied public parks live alone. Park coordinators pointed out that the matching function of Park Makers could help these citizens to meet new people that live on walking distance, in their neighbourhood. In fact, they might even have met when walking in the park. The platform that shows the profiles of the different park users and gives familiar strangers a name and face. The matching function can furthermore be used by families and youth, as suggested by the park coordinators. Hence, they are already using similar social media platforms and therefore easily adapt to this service.

## Discussion

Our research indicated that by receiving personalized activity suggestions (via e-mail) users were triggered to find more information on the park's social media page or website. The platform therefore extended park community with a digital community layer. The matchmaking service platform not only stimulated community growth, but also created a digital representation of the community. However, citizens indicated a barrier to participate for reasons such as being alone. Matching other citizens could help to lower this threshold,



but there could be other factors contributing to the barrier which our research was not able to identify.

The evaluation results showed that especially the personalization of the activities worked well to trigger citizens to get involved. Park users only saw activities that match their interest and that results in them being more inclined to participate. The platform helped the park users to see that there are more activities possible than they initially expected (i.e. only gardening or cleaning up in the park). As a result, park users expressed interest in joining these activities. Tailoring promotion is therefore an important aspect for getting citizens involved.

The results showed increased digital activity among participants. Many participating citizens decided to follow the social media pages of the park communities, but their actual participation in the real-world activities of the communities was not observed. The platform so far has only been shown to lead to digital involvement and contributed to increased awareness among citizens about the communities activities. This might indicate that participation in the park itself is more complex for only triggering it with matchmaking. We might speculate that this process needs to take place in several steps. For instance, citizens first get involved in the digital community, viewing the various activities taking place and only after some time participate in one of the activities when it fits their agenda.

Time was found to be an important constraint for participation, as people are often already quite busy with their own lives. Further research could focus on how the next step towards physical participation can be reached, building on the digital platform. The park community could be considered as a hybrid community, in which online and offline activities alternate and support each other in strengthening the community relationships (Cabitza, Scramaglia, Cornetta, & Simone, 2016).

## Further research

The work presented in this paper used matchmaking as an approach to get more citizens involved. The main issue for involving citizens, is that the trigger for each citizen to participate is unique. Besides matchmaking principles, as described in this paper, other approaches for offering a personalised trigger could come to the same, or a better, result. Park Makers used activity-based matching and interest-based matching to connect citizens to the community, but other matching variables can be explored. Such explorations may reveal that every citizen has a unique matching trigger. For instance, one citizen might be inclined to participate because of wanting to meet people with similar interests, while others are triggered by a specific skill they can learn from participation. Further exploration of these triggers and their combinations might lead to finding the “sweet spot” of motivating participation through a service.

A final aspect to discuss is the sustainability of the platform. In the beginning stage, the platform needs to attract enough users as the number of active users on Park Makers is vital to its success. Only a few citizens using the platform means not enough variety of profiles. The matching function might lose its attractiveness when the user has seen the profiles already or when there is no interesting profile to match. Then as well, the activity wall needs to contain a sufficient amount and mixture of ideas to keep the platform engaging. Hence, a successful implementation strategy is key to acquire a diverse group of active platform users. Involving local key-figures to promote the platform would help to ensure enough users on the platform. When the platform has been used for some time, it should stay engaging and interesting with enough new activities. Since the platform fosters community engagement and relationships, only starting up the platform could be enough to create a snowball effect of citizen involvement (Hepworth, Mulder, & Kleinsmann, 2016; Mosconi et al., 2017).

## Conclusion

The aim of the research was to investigate how matchmaking practices can be applied in the context of heterogeneous citizen communities in order to stimulate citizen engagement and to strengthen community relationships. The designed service platform helps individuals to find their place in the community, and contributes to a sense of identity by making use of matchmaking principles. The designed application provides its users with a quick overview of activities that are going on within a given community context and offers users a possibility to express interest in participating and in helping to organise these activities. Activity-based and interest-based matching couples citizens with other citizens and citizens with activities in the park community. The service design and its evaluation show that matchmaking principles applied in a service, and perhaps service design in general, can be of value to engage citizens and strengthen the relationships within bottom-up communities.

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# Service as a system of participation: A case study of a participatory economy service

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## Abstract

I discuss a proposed framework of service, which views service as a system of participation, through examining the rising “sharing economy.” I suggest that the “sharing economy” is part of a “participatory economy” model in which sharing is simply one form of participation. Using Airbnb as a case study, I examine “participatory economy” services from the perspective of four layers of participation: decentralized coproduction, trust co-creation, experience creation, and community sharing. Guests who seek economical accommodation and hosts with extra space participate in value coproduction. Individuals participate in the co-creation of interpersonal trust by reframing strangers as friends through identification. Participation is the autonomous experience of a traveler who is supported by a service environment in a network that allows diverse action possibilities. Airbnb has sought to strengthen its relationship with community by promoting the core value of “belonging.”

**KEYWORDS:** service design, designing for participation, sharing economy, participatory economy

## Introduction: service as participation

The incident with United Airlines in Spring 2017 shows that there is still a serious problem present in our service culture. Dr. David Dao was dragged through the corridor like a piece of luggage as shocked passengers watched the scene. The videos went viral, leading to public indignation, official apologies by the CEO of United Airlines, decreases in stock prices by \$255 million dollars, and even a Congressional hearing. This incident revealed that service is not only the presentation of a polished interface, but also an ethical issue that concerns the broad human community. Service designers have much to contribute to the discussion with a human-centered perspective. In order to do that, we need to understand the social paradigm of how a service supports people’s autonomous participation.

As shown from the word “*Servatum* (slavery)” its Latin root, one meaning of service is that it is an economical institution. In the Roman empire, the emphasis was on the notion of service as a public contribution and social support. Medieval monasteries illustrate another key aspect of service as community sharing. In modern times, interpersonal communication

has become an important perspective to understand servanthship as a contract between individuals. Industrialization changed the locus of service production to large corporations, and now service is often seen as mass-produced labor goods (Kim, 2018). A common thread in the historical forms of service is its participatory nature. Service is a system of collective action of people connected to the whole for the purpose of achieving a shared goal (Kim, 2018). The service archetype is a form of interpersonal help. When this help is systematized as collective action, it becomes participation in a certain social structure. Therefore, when organizing a service, designers need to consider how to bring people together, how to create a system that people can join, and how to help them maintain their participation in a sustainable way. These problems can be partially addressed by service design methods, but fundamental change can only come when service design is thought of as a human-centered principle that supports people's autonomous participation. In the present era, service has become characterized by the rising "sharing economy." Technology has made the participatory nature of service visible on an unprecedented scale. The sharing economy has become a movement throughout the world over the last few years. In this paper, I will first discuss how the sharing economy is part of the broader "participatory economy." I will then examine the diverse aspects of service participation through the case study of Airbnb. Created by two designers, Airbnb is one of the most representative service organizations in the participatory economy.

## The sharing economy and the participatory economy

The term sharing economy was first coined by Lawrence Lessig in 2008. He described it as an economy that is mediated by social relationships, which is an aspect of the digital culture's permeation of our lifestyle. The Oxford Dictionary defines the sharing economy as "an economic system in which assets or services are shared between private individuals, either free or for a fee, typically by means of the Internet." For example, Uber is a service that connects cars and people who need rides through a mobile application. However, there are controversies regarding the word "sharing." Criticism is often centered on the fact that although some businesses give the impression of contributing to the public good by advertising themselves as a "sharing" economy, their business models prioritize profit. In fact, the meaning of "sharing" is twofold: one meaning is selfless giving, and the other meaning has to do with maximizing the use of underutilized resources. Lessig (2008) initially suggested that sharing economies are "economies of selflessness" in contrast to "commercial economies." Yochai Benkler (2004) described sharing as "nonreciprocal pro-social behavior." The moral assumptions about sharing often include the interaction between individuals and the community instead of one-to-one exchanges. The goal of sharing is to contribute rather than to appropriate. For example, Helping Hands is a service that supports people by donating car rides to elderly people in need. It may not involve a return, and the indirect return does not necessarily require an exact value exchange. An individual shares something that she can give to the community and in return gains a moral right to potentially take part in community sharing in the future.

However, the sharing economy is often focused on the distribution of underutilized resources. For example, Getaround is a service that connects unused cars with local people in need. In the conventional model, a person purchases a car and owns it for a certain period of time. Currently, any service that does not follow this model is explained as "sharing economy" because the focus is on the material ownership, as when people say "a car is shared." Therefore "sharing" is often explained as if it is an alternative to ownership. However, Getaround participants still maintain individual ownership. In fact, individual ownership is even more important because individuals who share cars profit from this ownership. Hence, how is the sharing economy fundamentally different from existing models of service?

I suggest that in the sharing economy model, what is shifting is not the ownership but the agents involved. If we change the focus from the object (car) to the agency (people), a variety of actions can be discerned. People give rides, rent cars, deliver things, carpool, donate rides,

and buy vehicles for community use. All these actions are forms of participation on various levels. Such services range from exchanging artifacts to locating public restrooms (Sitarsquat), collective fundraising (crowdfunding), online higher education (Coursera), made-to-order handcrafting (Etsy), coproduced green energy (Global Renewable Energy Grid), community-supported agriculture, and the Internet itself.

I therefore propose the term “participatory economy” to describe an expanded framework of the sharing economy in order to include the wide range of participatory actions. Sharing is simply one form of participation, and many of the services in the participatory economy services are less about sharing artifacts than about connecting people in a collective action. These services commonly show that collective action shifts the emphasis from production by centralized organizations guided by the principle of control to networks of individuals guided by the principle of participation. Organizations provide frameworks rather than micromanaging production. Individuals become the foci of actions that collectively create participatory services.

In this paper, I conduct a case study of Airbnb, a pioneer in the participatory economy, as a way to examine how diverse layers of participation become the main drivers of a service. Airbnb is introduced as a “trusted community marketplace for people to list, discover, and book unique accommodations around the world” (Airbnb, 2017). Airbnb was founded in 2007 during the Industrial Designers Society of America conference in San Francisco, in which more than 10,000 attendees participated. Brian Chesky and Joe Gebbia, new graduates of the Rhode Island School of Design, formed the idea of renting air mattresses in their empty living room. They picked up guests from the airport, made them breakfast, and showed them the neighborhood. Gebbia recalls, “the social interaction was actually much more valuable” (Setili, 2014). In the following 10 years, Airbnb grew explosively into a global company that has been valued at \$31 billion (Statista, 2017).

## The decentralization of coproduction

“There are 80 million power drills in America that are used an average of 13 minutes. Does everyone really need their own drill?” asks Chesky, now the CEO of Airbnb (Friedman, 2013). On average, American cars remain parked for 96% of their lifetimes (Morris, 2016). Similarly, the rooms in some houses are seldom used. Through the Airbnb service, people can maximize the efficiency of resource usage and generate new value by renting unused resources to those in need. In other words, Airbnb connects people so that they can participate in service coproduction. In the existing model of service, customers’ involvement in service coproduction is understood as a way of utilizing labor to increase the efficiency of the standardized production process in large-scale operational systems or “service factories” (Levitt, 1972; Bitner, 1992; Edvardsson, 1997). People are often seen as resources to be controlled by the service organization that manages the production.

In a participatory economy, customers lead the production. The global recession in 2008 is often highlighted as the reason for the rise of the participatory economy. As the recession continued, people became more cost conscious, and they adopted a new perspective on the utility of the things they owned (Kevin, 2014). Houses in particular are idle resources with low usage rates despite their high prices when the amount of space that is actually used is considered. However, some people do not own their homes because of the high initial investment that is required. Hence, it is mutually beneficial for people to rent these resources to persons who need them provided that there is a way for them to connect.

The development of a networking technology enabled the connection between people with compatible resources and needs. Technologies such as Google Maps, GPS, and mobile phones connect people in online spaces. Individuals have become used to copying and sharing information as they constantly interact with others in the virtual world to create new connections. Virtual and physical spaces are connected as well, such as when Facebook members photograph their meals and post these images online. People who are familiar with this network culture have started a movement outside cyberspace. They use networks to

utilize their excess resources and increase the value of their assets by collaborating with others to maximize the use of their resources.

The networks between the nodes of collaboration lead to the decentralization of production. In the past, accommodations were rented by large organizations that owned standardized resources. Giant corporations that monopolized ownership appeared during industrialization to raise funds for the transportation infrastructure, such as steam locomotives. These corporations were characterized by centralized decision-making systems with vertical chains of command and control mechanisms (Rifkin, 2014). In contrast, service organizations in the participatory economy, such as Airbnb, empower individuals in the coproduction process. Individuals can now provide services based on what they own. As an increasing number of individuals gain direct access to the distribution infrastructure, service production is being decentralized. The autonomy of control is distributed to individuals, and Airbnb serves as a platform to connect hosts with guests.

Because of this change, accessibility of resources is replacing conventional ownership. Efficient value production now depends on how easily individuals can access the network and contact each other to invest in more resources. The word autonomy traditionally implied isolation. For example, investing in a mortgage to own a home meant leaving your family and becoming an autonomous adult by securing privacy and achieving financial independence. In contrast, in the participatory culture, autonomy is derived from being open and accessible. The ability to relate to more nodes in more diverse ways creates more value in the same property. The Airbnb service supports participants by offering them better access to the human network, stronger connections with appropriate co-participants, and a search engine that can locate resources efficiently based on location and review points.

Hence, the participatory economy decentralizes control and enables a new means of coproduction. However, new paradigms are inevitably accompanied by social conflict. The platform of the participatory economy needs to expand beyond an efficient transaction system or easy-to-use interface to a social infrastructure that better suits the new production and business model. Jeremy Rifkin (2014) predicted a future society where the marginal costs of production would be close to zero and millions of “prosumers” would share their resources in the service network. It is yet unknown whether the participatory economy represents a step toward this future, but indeed, it is an observable pattern that people and things and places are becoming more intimately connected than ever before and centralized control is giving way to shared participation.

## Trust co-creation

“Strangers crashed my car, ate my food, and wore my pants,” is the caption on the cover of *Time* magazine’s February 2015 issue (Stein, 2015). The article discusses the new phenomenon of people opening their rooms to others whom they have never met. Millions of people trust strangers’ reviews more than experts’ critiques. Trust is the first step in service co-creation in the participatory economy because the lack of trust is the second most frequent reason that people choose not to participate (Shaheen, 2012). How then does the Airbnb service communicate and cultivate interpersonal trust?

Trust does not just appear; it is a product of rhetorical persuasion. The guiding factor in trusting the Airbnb service is more than a safe transaction system. Airbnb builds trust by having individuals participate in communication to co-create their identities. This perspective

aligns with Erving Goffman’s theory that individuals collaborate in defining the characteristics of a situation by performing their roles and responding to the roles of others. Through this performance, individuals resolve initial controversy and foster mutual agreement (Goffman, 1959). In this respect, the role of service is to provide backstage support so that customers can convincingly play the characters they want to be and mutually agree on a service situation.

First, building trust requires systematic processes that encourage people to see each other as real human beings. One of the differentiators that helped Airbnb succeed is its close connection to virtual identities. In addition to identity verification by government-issued IDs, Airbnb uses Facebook Connect for social verification by allowing their members to access photos, names, schools, professions, friends in common, and the self-images that people want to represent to their friends. Individuals can import the information to Airbnb's interface and then further establish their trustworthiness by writing about their hobbies and interests to help the readers feel as if they really know them. Testimonials also play a critical role. After meeting each other, guests and hosts leave reviews that serve as evidence to support or weaken their argument about their trustworthy selves.

The next step is to connect people by helping them to become favorable characters with whom others would want to identify. People tend to share their possessions with those who share certain commonalities (Belk, 2014). This issue was especially relevant for Airbnb because the objective of its service is to provide a private space. The home is an extension of the host's character. Airbnb puts much effort into conveying the character of people's curated spaces by featuring high-definition photographs and illustrating the uniqueness of the neighborhood. Moreover, Airbnb takes care of the payment backstage through escrow, so that the host and guest meet on the frontstage without the awkwardness of a commercial exchange. They can act as if the host is simply sharing the space as a favor. This performance gives the host the character of an open, social, and creative person.

Furthermore, character definition supports the identification of the host with the guest. It is not difficult to become a temporary New Yorker, for example. Anyone can stay at a New Yorker's home through Airbnb. Staying in an artist's loft, using tasteful furniture, reading books that reflect the host's personality, and cooking with ingredients from a farmers' market makes the guest feel much more like a local than staying at a hotel does. Learning about the hosts as human beings and even identifying with them can help guests bridge the gap. In other words, a stranger is reframed as a friend through identification. Instead of owning a property, now people can rent an identity as if they were renting stage props to become a character in a drama.

This process of identification is reinforced by Airbnb's brand. Its home screen says, "Welcome home" and displays movie clips that do not have much to do with the room itself. Instead, these videos generate an atmosphere that helps people relate their self-image to the community image and to perceive other participants as sharing in the character of Airbnb. Bélo, their brand logo, represents Airbnb as a community of "belonging." This sense of belonging gives Airbnb an open character with which people can easily identify. Moreover, hosts can use the design tools provided by Airbnb to personalize Bélo and post it in their listings or create souvenirs to build their own character on top of the Airbnb brand.

In participatory economy services, branding is more than just a new logo. It is a service concept that guides people in how to perceive their roles. Airbnb is a good example of a "user-generated brand" (Yannopoulou, 2013). In the participatory economy, brands are no longer one-way communicators. Instead, they are given to users as a platform for creating individualized meaning through collective action. The fact that a user-generated brand is co-created through user participation leads users to trust the brand, which strengthens the identification process through which a stranger is reframed as part of a "we." Because the Internet blurs the boundaries of authorship, the focus of persuasion also shifts from an author's invention to community co-creation. The most powerful service brands in the future would be those that represent participatory values.

## Experience creation

"Whether an apartment for a night, a castle for a week, or a villa for a month, Airbnb connects people to unique travel experiences, at any price point, in more than 65,000 cities and 191 countries," is a quote from Airbnb's "About Us" page. Service value is created through experience. (Joseph & Gilmore, 1998) Today's travelers, however, are less attracted



to the controlled quality of mass-produced hotel experiences, as the novelty of such experiences is often short lived. Travelers desire to create their own experiences by making personal connections. The old model of tourism tended to include “McDisneyized experiences,” whereas “new moral tourists” seek to participate in fulfilling experiences that relate them to local communities in meaningful ways (Molz, 2013). How then does Airbnb support travelers to participate in creating their own experiences?

Experience is an interaction between an autonomous agent and an environment (Dewey, 1984). The environment not only consists of physical surroundings: it is a network of possibilities and meanings that support human actions. Airbnb is an example of how travelers create their experiences by participating in an environment that is prepared by service. An example is Airbnb’s advertisement video that shows the travel route of a toy train. The landscape is entirely handmade, and the people are modeled after photographs of real Airbnb users. The world becomes smaller as the traveler experiences unfamiliar places and meets new people. The director explains that they wanted to represent the Airbnb experience as a journey with details that the audience had not seen previously and that would allow them to gain different perspectives on the world. As this video conveys, one reason for Airbnb’s success is its recognition of the creative autonomy of individual’s unique journey. It is not merely its affordability that makes Airbnb competitive. Many travelers prefer Airbnb’s network because of its diversity: the listings range from a \$30 couch to an entire French chateau at \$10,000 per night. Choices include tipis, farmhouses, yachts, wineries, castles, lighthouses, igloos, and private islands. Airbnb also runs various events to suggest new experiences, such as sleeping in an airplane parked at Amsterdam Airport or at Waterstones bookstore in London. Moreover, the core value of an Airbnb accommodation is that the host actually cares for and lives in it. Gebbia argues that 90% of Airbnb hosts are primary residents who list their home or a second home (Moore, 2016). For those who appreciate the value of an authentic experience, an Airbnb is much superior to a hotel experience.

This diversity is a fertile ground for participants to create their own experiences. While the quality of the hotel experience tends to align with price, personal factors contribute to the quality of the Airbnb service, such as knowledge, interests, aesthetic sense, emotions, and human relationships. The travelers add these aspects as much as the hosts do. Travelers research and select listings, ask for personalization, and appreciate the contextual value, all of which contribute to the service quality. Hence, travelers “design” their own experience when they search and choose an Airbnb place. In contrast to hotel services that tend to insert customers in a mass-produced experience, the sense of creative autonomy is an important part of the Airbnb experience. It allows travelers to experience the world more actively rather than through the passive hedonism of mass tourism.

The pursuit of creativity and autonomy leads travelers to value the connection to local people. The host acts as an interface that seamlessly connects the traveler to the local culture by turning a surrounding into an environment with meaning. Travelers can quickly discover opportunities rather than having to navigate a strange surrounding. Travelers learn about the unfamiliar area as they interact with the host, who, for example, can provide “insider” information about an upcoming festival. The host also introduces a personal network of favorite restaurants, neighbors, and other local services, so the traveler can choose the ones that best serve her purpose. This connection can create a meaningful and personalized experience. Diverse choices in the network now help participants find the best relationships for meeting their action goals, thus allowing them to make autonomous decisions.

The environment provided by the participatory economy is not limited to one service. It expands as the depth and breadth of the traveler’s action increase. Airbnb connects to diverse participatory economy services to increase its support of the traveler’s experience. These services include Locateur (local experience guide), LiquidSpace (meeting place), and Instacart (grocery delivery). This network expands the notions of local place and connects different boundaries of interest to enable broad action possibilities for travelers. By serving as the meta-environment in which these relationships are formed, services in the participatory economy are contributing to building the ecology of a new global lifestyle.

## Community sharing

“Crisis” became the 2017 media keyword associated with Uber, another representative service company in the participatory economy. Multiple protests were held against Uber’s strategy regarding the Muslim Ban, which resulted in the #DeleteUber movement where more than 200,000 customers deleted Uber’s app. The following repercussions included the disclosure of the company’s aggressive work culture, the CEO’s misconduct, executives leaving the company, the CEO’s resignation, and the expulsion from several major cities. Airbnb has also undergone the social conflicts that accompany a new system, including struggles over tax issues, rental raises, and security regulations. Today, however, Airbnb maintains a relatively positive social image in media representations, and it has been successfully adopted in over 65,000 cities around the world compared to the 633 cities where Uber operates. What caused the divergence?

The former director of product design at Uber, Ethan Eismann, wrote on Twitter that Uber’s crisis was partly due to the “valued rational economics over humanistic concerns” (Eismann, 2017). To my mind, the phrase “humanistic concern” signals a connection to participation as community sharing. The social and cultural values of a community are the fundamental conditions for sharing, which, in turn, reinforces these values. Individuals prioritize common interests over their own because of a value system that is created and shared by the members of their community. This shared value system holds the community together and perpetuates the production of common goods generation-by-generation (Ostrom, 1990). Instead of depleting resources, increased participation creates more value through the individuals’ contributions of knowledge and cultural content (Rose, 1986). The sharing economy is rooted in this relational capital, making the market not only a place for efficient transactions, but also a space where more than two ethical autonomous beings can participate together (Gold, 2010). Although the forms of shared ownership in these local communities are different from the forms of individualistic relations mediated by a global corporation, the emphasis on the importance of a value system is worth discussing in terms of its commitment to participation.

In addition to strengthening its rules and regulations to filter abuse, Airbnb has consolidated its organizational principle and vision of community. This measure was taken to overcome the social conflicts surrounding the new economy and to promote bonds between its members. In 2014, Airbnb’s new design, including a new brand and promotional movies, delivered Airbnb’s vision to promote a sense of “belonging” that would encourage people to accept each other and to participate in the larger value system that connects them. The ideal of belonging represented by Bélo is a community value that is more than an individual’s character definition. When he introduced Bélo, Chesky (2014) explained, “It’s about something bigger...the unifying idea of Airbnb.” He also explained, “House is just a space, but home is where you belong.... At Airbnb, we imagine a world where we can belong anywhere.” Cheskey conveyed Airbnb’s understanding that people have a sense of belonging when they participate in an idea.

The ideal of belonging also permeates Airbnb’s events, thus strengthening its relationships with the Airbnb community and the broader global community. For example, in 2014, during one of the company’s most difficult times, Airbnb sought to unite the community by inviting 1,500 hosts from 40 countries to participate in the Airbnb Open Summit. The hosts dined with employees and executives to share feedback. In the same year, the event #OneLessStranger showed Airbnb’s efforts in making connections with the global community. Airbnb members were asked to give gifts of kindness, such as a free cup of tea, to promote the sense of belonging to their local communities. This event spread through social media and even inspired non-members of Airbnb, thus expanding people’s sense of community. Molly Turner (2014), the director of Civic Partnership at Airbnb, stated that Airbnb hopes to reconfigure how people live in a city by exploring the general principle of a new culture for the global community.

However, Airbnb also reveals its limitation as it expands into a global corporation. There are ongoing arguments about its negative effects on urban housing and local competitors. In one example, San Francisco City Attorney Dennis Herrera sued a number of Airbnb hosts for violating the city’s Planning Code. The accused landlords evicted their long-term tenants,

including two renters with disabilities, from residential buildings to convert the spaces to short-term AirBnB rentals. Interdisciplinary scholarly networks, such as “From Sharing to Caring,” COST Action, and the Platform Cooperativism conferences are discussing the ethical, political, and legal implications of AirBnB's practices in terms of the growing challenges to a more equitable economy. The discussions, especially around the term “sharing,” brings our attention to the important role that participation in community values plays in service. In this view, participants are not anonymous entities in the market, but ethical actors in social relationships with neighbors, cities, and the global community. In order for the participatory economy to better align with social values, we need to expand the concept of participation beyond economics.

## Conclusion

In this paper, I examined Airbnb to illustrate how a “sharing economy” is, in fact, a participatory service with multiple forms of participation. I propose that four layers of participation coexist within a service as system of participation: coproduction, co-creation, experience, and community. Technology enabled a major change in the economy, in which ownership is decentralized and replaced by accessibility. Airbnb participants autonomously produce the service by renting their own spaces. Airbnb serves as a platform to connect individual hosts and guest. From the interpersonal perspective, character definition plays a critical role in person-to-person communication. Airbnb builds a network of trust by supporting people's creation of favorable characters. Identification is the key to extending people's characters so that people can reframe strangers as friends and thus co-create mutual trust.

From the structural perspective, Airbnb travelers create unique experiences that are enabled by participating in an environment that is prepared by Airbnb. This environment alters the perceptions of spaces, connects them, and relates them to service ecologies that extend the guest's action possibilities. From the ethical perspective, Airbnb has sought to create a community of shared values. Airbnb's core vision of “belonging,” which is symbolized by the Bélo logo, represents an ideal of global communities with neighborly values. However, the application of this ideal is limited. As Airbnb grows into a global corporation, conflicts with existing social systems have increased. To adapt, participatory services must revisit their value systems and reorient their systems to utilize the layer of participation as communal sharing.

Today's participatory economy services can be considered descendants of a long tradition of service as participation, which has been revived and mediated by technology. In addition, its characteristics reflect interactive digital technology: participatory economy services are flexible, collaborative, decentralized, and horizontal. However, technology can also isolate people. Relationships are not only flexible but also ephemeral. People rent instead of own, utilize instead of contract, temporarily access instead of taking the time to have an experience. The concern then is that commitment is no longer necessary. Will participatory services make people nomads without a social safety net or will they liberate people to become autonomous agents of a new cultural shift? Technologies create possibilities, but they do not provide a moral direction. It is the responsibility of service designers to envision how to shape the medium and discuss the evolution of the participatory economy service.

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# A CRX framework and tools to design for relationships in service settings

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## Abstract

This paper presents a framework and tools to improve—by design—relationships between customers and large-scale service organisations. Up to now, several attempts have been made in both academia and practice to improve these relationships, but so far approaches such as relationship marketing and customer relationship management have failed to deliver on their theoretical promise. Several design studies and projects have pointed to more pragmatic new directions for improving relationships, albeit mostly in highly local settings and without as an extensive theoretical background. In this paper we revisit this issue from the perspective of large scale service organisations that seek to enjoy better relationships with their customers at a sustained and large scale. We propose that improved relationships be based on designing for ‘customer relationship experiences’ (CRX), in which both the customer and the organisation benefit, through mutual contributions that go beyond direct commercial exchange. To this purpose, the present paper provides a CRX framework and tools (with industry evaluation) that bring together the theory of marketing and practice of design literatures for assisting larger service organisations to design for relationships.

**KEYWORDS:** CX, CRX, customer, experience, organisation, relationships, service design, contribution, engagement, role enhancement

## Introduction

In 2013 the service design consultancy Livework Studio ran a project with the German company Vorwerk. This high-end producer of domestic appliances wanted to introduce a digital service component around its product called ‘Thermomix.’ It had asked Livework to help in creating a new product service system by connecting the product to the internet. Together, they designed a service that allows users to generate recipes, share them and easily

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load them into their Thermomixes. The new service of Vorwerk had a great impact on their customers: (a) they started to share their own recipes online through an online community facilitated by Vorwerk, (b) created their own media channels through which they actively marketed the product to other potential buyers, (c) and in some occasions even directly bought the product for friends or relatives. In other words, Vorwerk's customers started to engage with the company by fulfilling all kinds of additional roles for them. The new service instigated an active and mutual relationship between Vorwerk and its customers, as well as among customers themselves.

This new activist engagement of Vorwerk's customers, both towards the company as towards other (potential) customers, was instantly recognized —by both Vorwerk and Livework designers— as an important outcome of the project. Local successes of customers sharing recipes or buying the Thermomix as a gift for others were scrutinized to see which qualities of the new service caused customers to trust and care more for Vorwerk's products and services. Yet, what was less understood by Livework's and Vorwerk's designers is how these improved relationships were the result from their efforts to provide good service. The designers in this project had only targeted an improved customer experience with the new product service system. For them, the improved relationships had been a by-product of the digital service created. But could improved customer relations be the object of design in itself? In other words, can service designers redirect their aim from improved customer experiences (CX) to improved customer relation experiences (CRX)?

In design there have been studies and reports of design projects that should improve relations between service providers and users. For the most part this literature on 'relational services' consists of studies and reports of local projects carried out by designers, with the direct aim of improving the relational experiences of providers and users in a service setting. For instance, Cipolla (2012) described a project where students and elderly in Milan would share houses, thus resolving financial, security and loneliness issues of both groups. Despite generating valuable insights, these studies have not focussed on improving relationships between large scale service organisations and their customers until now. Nevertheless, they might provide a starting point to do exactly that.

In the field of design engineering there has been a more indirect advocacy for models that allow for less predetermined and more humane relations between users and providers of services. For example, Borchers & Thomas pursued to improve the trustworthiness of (web-based) services and others to improve the adaptability of people working together in health care services, or in product-service systems (Griffioen et al, 2017; Hassannezhad et al., 2017). So, within design there are best practices, like the Vorwerk case, available. However, there is no theoretical framework developed yet that provides an understanding about managing customer relationships and how to design for them. Consequently, service design scholars increasingly acknowledge the need to design for relationships more deliberately (e.g. Baek et al., 2017; Griffioen et al, 2017; Snelders et al., 2014). In this way, they answer to earlier calls by Cipolla and Secomandi (2010) that service designers require interpretative frameworks for dealing with interpersonal qualities in services and by Hassannezhad et al. (2017) and Den Hollander et al. (2015) that designers of product-service systems need to take a more relational perspective to their work.

Existing scientific research that focuses on the topic of customer-organisation relationships comes from fields such as economics, marketing, and service research and is well-developed. At the same time, this body of work has mostly focused on understanding and managing relationships, and on studying potential barriers and enablers in the formation of good relationships (Sheth & Parvatlyar, 1995). It is in the translation of theory to execution, i.e. in eliciting good customer relations, where these fields went wrong. Departing often from downright opportunistic intentions, many customer relations programs have seen customers becoming distrustful of such programs, shying away from becoming more engaged with the products and services of companies. As Palmer (2010) concluded: "many academics and practitioners have argued that customer relationship management has not created the

expected levels of value for customers and profitability for organisations” (p. 196). Even though the field progressed – and relationship management slowly expanded into the territory of customer experience management – tools aimed at supporting practitioners in devising the right stimuli to support an excellent customer experience and relationship are still scarce (Pullman & Gross, 2004; Gentile et al., 2007; Jaakkola & Alexander, 2014).

Going back to the Vorwerk case described earlier, we can see how the issues raised in customer relationship management and design literature both may hold relevance for the relational service elements that Livework’s and Vorwerk’s designers inadvertently helped create. The literature on customer-organisation relationships supports us to explain what Vorwerk did right, and how other organisations might profit from better relations with their customers through integrating relational elements into their current or new services. However, the literature does not explain what creative, experience centered tools and methods are required for achieving improved CRX. The design literature on the other hand, provides best practices and shows the tools and methods they used. However, this literature lacks a solid theoretical base to start from.

This paper integrates and builds on insights from both fields and focuses on a context that is close to the Vorwerk case (B2C) where we have witnessed the potential of service design for improved (activated) customer relation experiences. The research question that we address is:

***In a B2C service context, how can customer experiences be understood and modelled in a way that supports design practices for better relationships, both between customers and organisations and among customers themselves?***

The paper is structured as follows. It starts by describing a short history of research on customer-organisation relationships management and research on design qualities that foster these relationships. Afterwards, it summarizes the academic fields around customer-organisation relationships into a CRX framework. This framework is translated to three design exercises which have been evaluated in industry. The paper closes in a discussion, conclusions and the limitations of the work.

## Service as (exchange) relations

### Customer-organisation relationships

The academic field that started studying the fostering of relationships between organizations and customers was relationship marketing (see e.g., Berry, 1995; Fournier et al., 1998; Gwinner et al., 1998; Hennig-Thurau et al., 2002; Morgan & Hunt, 1994). Relationship marketing scholars investigated how companies could establish long-term, committed, trusting and co-operative relationships with customers. The proposed relationships were characterized by openness, genuine concern for the delivery of high-quality goods and services, responsiveness to customer suggestions, fair dealing, and, most crucially, the willingness to sacrifice short-term advantage for long-term gain (Bennet, 1996).

Companies quickly incorporated relationship marketing’s constructs into their strategies with the aim to ‘get closer’ and insert themselves further into their customers’ lives. However, in their efforts, Bennet’s (1996) desired sacrifice of short-term advantage for long term gain got lost in translation; companies developed a plethora of frequent-buyer-reward programs, invitations to join mailing lists and so on. So, the application of relationship marketing in most programs for ‘customer relationship management’ (CRM) resulted in one-sided affairs that tried to push consumers into buying more, rather than establishing the quality of relationship that customers would prefer (Fournier et al., 1998). This ‘selling-out’ of CRM programs was further aggravated by the advent of automated scanning and tracking technologies of people’s purchases (Parvatiyar & Sheth, 2001; Verhoef, 2003). These



technologies for monitoring people's buying behaviour allowed CRM programs to personalise a company's marketing efforts. Again, organisations were quick to leverage these technologies to generate cross- and upselling, but few used them to make more meaningful recommendations to their customers.

Social and other new media renewed the academic interest in customer relationships, since information about people's buying behaviour became an even more accessible and tradable asset than it had been before. This interest has led to the establishment of *customer engagement theories* (see, for example, Brodie et al., 2011; Sashi, 2012; Vivek et al., 2012). These new engagement theories looked at how customers had found new means for talking to companies and to each other in blogs, review systems, discussion groups, etc. (Deighton & Kornfeld, 2009). This shifted the 'one-sidedness' of original mass media broadcasting to much more interactivity between companies and their customers. This interactivity enables customers to become more engaged and active partners, and the Vorwerk example from the introduction can be seen as a point in case.

### **Service design**

The designers who proposed the new product-service system for Vorwerk were part of a service design project. Within this project they appear to have done something that made customers engage in new relationships with others, going beyond mere purchase and individual use. We believe that this is not a coincidence and think that service design could prove to be a solid foundation to design for relationships. This is because service designers are already aware of the need to design for improved service encounters to improve the customer experience (Zomerdijs & Voss, 2010; Reason, Løvlie & Flu, 2015). Also, they are used to co-creative approaches and engaged co-production by users. Moreover, they are used to the entangled position of all stakeholders in processes of resource integration (see e.g. Gallouj & Weinstein, 1997; Kelley et al., 1990; Vargo & Lusch, 2008; Zeithaml et al., 1985).

To understand service design's qualities that instigate and foster relationships we focus on how relationships influence customers' experiences. We follow the definition of Jaakkola et al. (2015, p.186) who define the customer's service experience as a "subjective response to or interpretation of the elements of the service". Several elements make up and influence the customer experience, amongst which are relational elements (Gentile et al., 2007). As shown in the Vorwerk example, relationships can follow from new services implicitly and inadvertently—without the relational elements having been explicitly designed. A more thorough understanding of these relational elements could possibly make this unconscious competence a conscious one.

To summarize, the application of theories developed by relationship marketing and CRM has not led to practices that created and fostered sustained relationships between organisations and their customers, or among customers themselves. In addition, social and new media led to new understandings about how to develop two-way customer relationships through engagement. Moreover, recent insights derived from service design show that designing for relationships as a part of the customer experience seem a fruitful path to explore further. By integrating the theory of relationship marketing, CRM and customer engagement with the practice of service design, we could uncover the means to successfully design for relationships.

## The CRX framework

The analysis of relationship marketing, customer engagement and service design literature led to a CRX framework, empowering practitioners to design the relational components in customer experiences (Figure 1, for a detailed description of the development of the framework see Koenders, 2017). The framework consists of one outcome to be measured (goodwill), and two actionable elements (engagement behaviour and relationships). The three elements of the CRX framework reinforce each other. Strong engagement behaviour leads to a further build-up of relationships (Vivek et al., 2012), which in turn leads to more goodwill, and vice versa. Goodwill thus becomes a measure of both people's willingness to further expand their relationship and engagement behaviours.

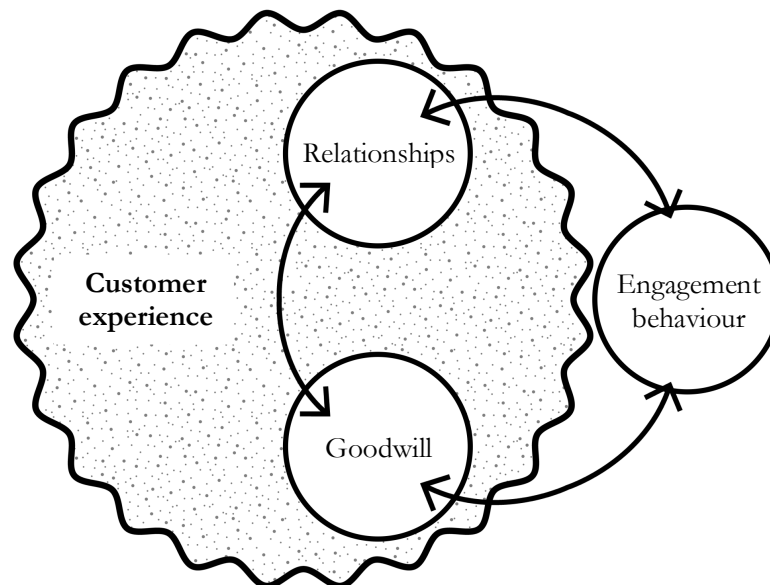


Figure 1 – The CRX Framework

Below we explain each building block of the CRX framework in more detail.

### Relationships

Relationships might sometimes be perceived as having a stable nature. However, they are only the result of continuous activity or behaviours between partners (Duck, 1995). Consequently, we recognise relations as open ended and always changing. This is also affirmed by Dwyer et al. (1987) – some of the first to discuss relationships in a buyer-seller context – who say that relational exchanges always have "traces to previous agreements [and are] longer in duration, reflecting an ongoing process" (p. 13). Consequently, the CRX framework considers relationships to be based on a continuous process of the strengthening and weakening of ties, with varying degrees of quality influenced by the behaviour and perception of the partners (Bendapudi & Berry, 1997; Duck, 1995; Shemwell et al., 1994).

These relationship qualities—which represent the extent of trust and commitment in the relationship between a customer and an organisation (Bove & Johnson, 2001; Hennig-Thurau & Klee, 1997)—are the manageable aspect of relationships in this framework: By performing on the level of relationship quality deemed appropriate by partners, their relationship quality steadily improves. This paper follows the five actionable relationship qualities as proposed by Bennet (1996) and Hermans (2015), with each higher-level quality only attainable after lower-level qualities have been satisfied (see figure 2):

(1) Familiarity—Understanding of, and familiarity with each other (Gremler & Brown, 1998), (2) Identification—A cognitive state of self-categorization (Fournier & Yao, 1997), (3) Reciprocity—A degree of involvement with a service that is mutually understood between partners (Bennet, 1996), (4) Communality—Friendship-likeness of a service (Fournier & Yao, 1997) (5) Continuity—A degree of formality arising from the ongoingness of a relationship (Fournier & Yao, 1997).

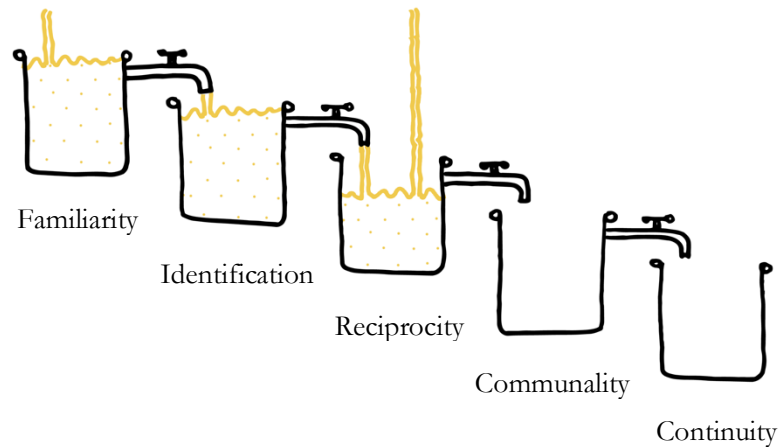


Figure 2 – The flow of relationship qualities

Within a service setting, the interactions between partners in a relationship (in the role of user, provider, or any other role) are termed encounters. To manage the relationship quality in these encounters, an organisation first has to identify which encounters could possibly arise. Cipolla (2012), in her study on students and elderly in Milan, identified three relationship prerequisites. These prerequisites can be used to identify the encounters in a service: Acceptance (based on direct benefits of a relation), Attribution (based on an emotional connection), and Confirmation (based on the equitability of the relational outcomes among partners). Once the encounters have been identified, the relationship quality within them can be set at the level that both partners deem appropriate. It is important to note that new encounters can always be added (or it can be that anticipated encounters will no longer take place).

## Engagement behaviour

Customer engagement theory describes customer engagement as the customer relationship beyond purchase (Vivek et al., 2012; Brodie et al., 2011). Therefore, all behaviour of relationship partners that affect one another other than purchasing behaviour is engagement behaviour. This can be non-opportunistic behaviour, such as recognition of each other, but also behaviour that leads to additional roles for partners, such as co-design or co-production behaviours (Gouthier & Schmid, 2003; Jaakkola & Alexander, 2014). When such additional roles are fulfilled to partners' satisfaction this leads to a build-up of the relationship.

We have identified two manageable sides of customer engagement: customers' motives to engage and organisation's desired customer roles. Both should be identified and designed for to successfully manage engagement behaviour in a reciprocal relationship.

On the one hand, the customer needs a motivation to engage. Five actionable engagement motives from a customer's perspective have been identified based on the work of Neghina et al., (2017): (M<sup>1</sup>) Development (of the customer's resources in terms of knowledge, skills, materials, etc.), (M<sup>2</sup>) Ethical (appreciating non-opportunistic behaviours of partners), (M<sup>3</sup>) Empowerment (of the customer over his or her experience), (M<sup>4</sup>) Individualizing (to the

customer's desired outcome, abilities and context) and (M<sup>5</sup>) Relating (reinforcing social ties throughout the experience).

On the other hand, organisations should facilitate their customers to perform additional roles if they want to enable positive customer engagement. Six customer roles for positive engagement behaviours have been identified based on the work of Gouthier & Schmid (2003), and Jaakkola & Alexander (2014): (R<sup>1</sup>) Co-producer (participation to enable service delivery), (R<sup>2</sup>) Co-interactor (contributing resources to improve the offer being used), (R<sup>3</sup>) Co-designer (contributing resources to improve the organisation's offers beyond what is being used), (R<sup>4</sup>) Co-marketer (performing marketing activities), (R<sup>5</sup>) Buyer (fulfilling a sales role for the organisation) and (R<sup>6</sup>) Motivator (fulfilment of a leadership role to motivate and support service employees and other customers).

## Goodwill

Goodwill revolves around assessing (and measuring) partners' intentions to engage relationally with each other. Ajzen (1991) states that intentions are shaped by motivational factors that influence behaviour. In this context, we assume that engagement behaviour and good relationship quality are the motivational factors for people to slowly develop goodwill towards partners. In this sense goodwill can be seen as the measurable proxy for the other two actionable elements of the framework. The measurement instrument has been developed by a research team at Pennsylvania State University. More information can be found through SiR Intel (2018).

## Creation of the CRX framework and tooling

The CRX framework and toolset were jointly developed and evaluated through collaboration with multiple organisations. These collaborations consisted of workshops and semi-structured interviews with industry experts from six B2C companies [KLM, Adidas, Natuurmonumenten (a Dutch foundation comparable to the British National Trust), Sonos, TomTom, and Eneco]. The organisations were chosen based on being (a) B2C, large scale service organisations and (b) availability. Collaborations were mostly made possibly by the time and effort of Livework employees. This could have had a negative effect on the quality of the tooling, as the evaluation simultaneously served a function of maintenance to Livework's commercial relationships. On the positive side: Livework's long standing relationships with the participating organisations created a very open setting to talk about their—sometimes troubled—relationships with their customers.

Between workshops and interviews the tooling matured, with most changes made in three main iterations. The workshops improved both the tooling and the framework behind it, whereas the interviews focussed more on just the framework. Throughout development, the explanation, presentation and canvasses to explain the exercises evolved as well.

Workshops took about three hours and were shaped in a way to accommodate the participating organisations best. Amongst other factors, the workshops were adapted to the organisation's offer, the participants' seniority, their role within the organisation, their maturity with regards to CX, the size of the group etc. For example, Sonos and TomTom are mostly product organisations with supporting services, whereas Eneco is further towards being a pure service provider. This was reflected in the chosen customer journeys to improve. Also, the TomTom team needed less general introduction to service design tools such as customer journeys and personas as all participants worked in TomTom's UX department. At Sonos and Eneco however, multidisciplinary teams participated, requiring the establishment of a common understanding of the service design tools first.

To familiarize the participants of the study with the CRX framework, we presented example situations from other service contexts throughout the explanation (ranging from promising cases such as Vorwerk, to more extreme examples of engagement behaviour such as the Flemish Jack Association, a group of highly pro-active Jack Daniel's customers, see appendix A). Afterwards, we asked them whether the framework was clear to them, how it could be improved, and what value they saw in it. During the interviews, the framework was discussed within the context of the participant's organization. During the workshops, the framework was applied to their context through the tooling.

After each workshop, the researcher evaluated the tooling through co-reflection with the participants (Tomico et al., 2009). These sessions lasted between 20-60 min. The co-reflections were recorded, and notes were taken throughout the sessions. Table 1 gives an overview of (1) all participating organisations, (2) the roles of participants, (3) the process of the workshop, and (4) the insights the sessions provided for the toolbox, categorised per session.

Table 1: CRX Tooling development process

#	PARTICIPATING ORGANISATION	PARTICIPANTS	PROCESS	INSIGHTS FOR TOOLBOX
1a	Sonos	<ul style="list-style-type: none"> <li>- 3x Sr. Manager Customer Care</li> <li>- 4x (Digital) Care Manager</li> <li>- CX Quality Manager</li> <li>- Community Manager</li> </ul>	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Explanation of CRX framework</li> <li>- Establish customer journey</li> <li>- Exercise 1: Relationship prerequisites</li> <li>- Explanation of relationship qualities</li> <li>- Exercise 2: Relationship fostering and reciprocity</li> <li>- Final remarks and closing</li> </ul>	<p>In this workshop, relationship qualities were mapped directly onto a customer journey canvas. This proved to be too hard because not all interactions with the service are / should be relational encounters. This showed the need for a tool to identify which interactions should be turned into encounters.</p> <p>Additionally, this workshop focussed only on customer motives to engage, not on the roles the could fulfil (such as co-production or co-design). This made it hard to explain the value to design for relationships from an organisational perspective and created the need for a reciprocity canvas.</p>
1b	Adidas	Director digital experience NPS	Semi structured interview and open discussion of CRX framework and tooling	Adidas showed an understanding and interest in positioning relationships as the next level of CX. Possible ways of implementing it in Adidas' digital experience were explored and possible values were discussed. This confirmed the need to clearly show the value for the organisation of additional customer roles.
1c	KLM	Product strategy manager	Semi structured interview and open discussion of CRX framework and tooling	KLM also showed an understanding and interest in positioning relationships as the next level of CX. The inflight experience of KLM was elaborated upon as an opportunity to improve relations between and among cabin crew and travellers. The second iteration of tooling was explained and discussed with the interviewee to assess and improve its understandability for management.
2a	TomTom	<ul style="list-style-type: none"> <li>- 2x Senior UX researcher</li> <li>- UX researcher</li> </ul>	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Explanation of CRX framework</li> <li>- Introduction of TomTom customer journeys</li> <li>- Introduce exercises</li> <li>- Exercise 1, 2 and 3 with intermittent explanation</li> <li>- Summary feedback and closing</li> </ul>	<p>A second iteration of tools was tested at TomTom. This was the first workshop with the prerequisites and reciprocity exercises. It worked well to separate the identification of encounters through the prerequisites exercise and only then use the relationship qualities to design the encounters through the fostering exercise.</p> <p>An add-on canvas on the fostering exercise allowed for unlimited exploration of relationship qualities in repeat journeys. However, this exercise did not prove useful because for the most part it allowed for limitless exploration without generating many new insights. This laid bare the need for finding the necessary scope of relationship qualities.</p>
2b	Natuurmonumenten	Marketing intelligence	Semi structured interview and open discussion of CRX framework and tooling	Natuurmonumenten showed an understanding and interest in positioning relationships as the next level of CX. However, the participant found it hard to find a place of application within their own organisation. This showed that there is a need to identify where in a target organisation the framework and tools would be applicable.
3	Eneco	<ul style="list-style-type: none"> <li>- 5x Marketing</li> <li>- 4x CX manager</li> <li>- CX Expert lead</li> <li>- Innovation designer</li> <li>- Team lead marketing operations and process</li> </ul>	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- Explanation of CRX framework</li> <li>- Introduction of Eneco customer journeys</li> <li>- Introduce exercises</li> <li>- Exercise 1, 2 and 3 with intermittent explanation</li> <li>- Summary feedback and closing</li> </ul>	This workshop was very similar to the previous workshop with TomTom, except that a canvas was added to scope relationship qualities for the fostering exercise. This was found to be much more useful than exploring the scope of required relationship qualities through the fostering exercise alone. It also helped in identifying where in the organisation the framework and tools would be most applicable.

## Final Toolset: Three exercises to design for relationships

The final iteration of the toolset consists of three design exercises as follows.

- (1) *Exercise 1: Relationship prerequisites.* The aim of this exercise is to identify encounters in the customer journey (see figure 3). To do this, we added an extra layer to the customer journey map. This extra layer explores whether touchpoints fulfil a relationship prerequisite (and therefore are an encounter). Participants identify the prerequisites in the touchpoints, identified in the customer journey, with the help of Cipolla's (2012) classification of 'Acceptance', 'Attribution' and 'Confirmation'.

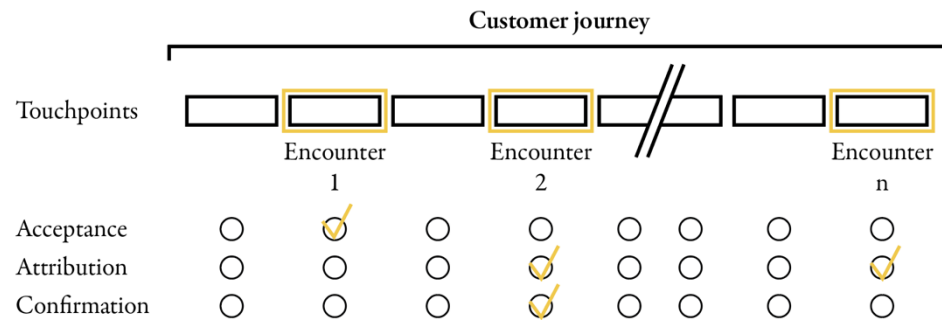


Figure 3 – Identification of encounters in the customer journey, through Cipolla's relationship prerequisites

- (2) *Exercise 2: Relationship fostering.* This exercise provides the means to manage and improve relationship qualities within and across encounters, by establishing the level of relationship quality deemed appropriate by partners. Bennet's (1996) actionable relationship qualities of the framework (see figure 2) are used to do this. Participants explore suitable relationship qualities by taking the encounters and by mapping their desired levels of relationship quality for different personas (see figure 4). Every relationship quality knows several service aspects that relate to it, providing strategies to attain them throughout the service.

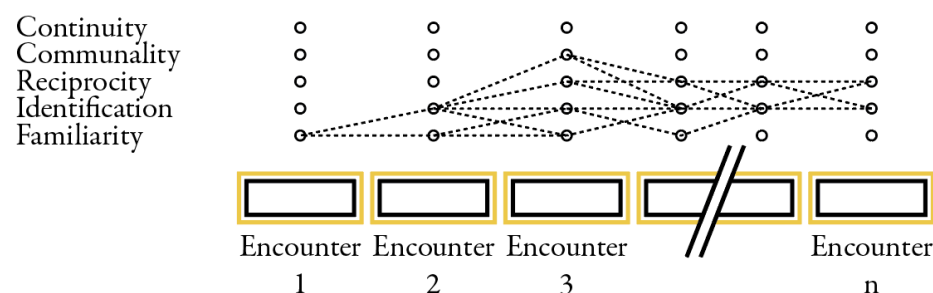


Figure 4 –  
Exploring relationship qualities within encounters through  
*relationship fostering*

- (3) *Exercise 3: Relationship reciprocity.* This exercise establishes the reciprocal relationship engagement behaviours of partners. It does so by exploring the motives to engage from the customers' side and ideating on equal engagement behaviour of the customer (through customer roles) that could be stimulated by the organisation's side (see figure 5). See engagement behaviour in the framework for a description of the motives and roles.

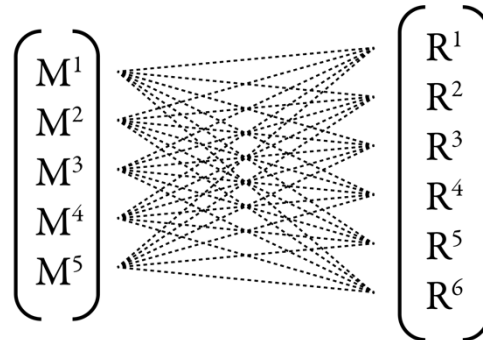


Figure 5 – Exploring a non-transactional give take balance through *relationship reciprocity*

Participants can explore relationship reciprocity (exercise 3) either before or after the relationship fostering exercise (exercise 2). This depends on whether an organisation wants to improve a current service (exercise order 1, 2, 3) or are developing completely new services (exercise order 1, 3, 2). In both cases, the participants have to integrate the results of this exercise with the results of the relationship fostering exercise. In combining these two exercises, it is important to remind practitioners of the exercise that relationships are always open-ended affairs: the preferred level of a relationship and its reciprocity can never be dictated by one partner alone (i.e. the company).

## Industry evaluation of CRX framework and tooling

Practitioners of the six companies were highly interested in the CRX framework and its intentions. All participants saw useful properties in (parts of) the CRX framework. Some even expressed their impression of the framework in a management superlative: *"This truly is the next level, it simply makes so much sense to try to improve the relationships we have with our customers"* (TomTom Senior CX manager).

In addition, the visualisations that were used during the presentation helped in making the concepts more understandable. For example, the visualisation of how relationship qualities are built up (figure 2) was well received, as one Sonos employee remarked after the workshop: *"The slide with the bucket graphic was one of the more memorable ones"* (Sonos CX quality manager).

The participants perceived the flow of the workshop as natural, and many remarked that the workshop schedule felt logical and that there had been a good combination of knowledge transfer, knowledge application, and translation to their contexts. However, in terms of time spent on the exercises in the workshop, it appeared that three hours were very short. Nevertheless, even within this relatively short time frame, the participants and researchers were able to recognize opportunity areas for improvement of the relationship and engagement behaviours between organisation and customers, as well as among customers themselves.



The examples provided were of high value to showcase potential customer roles. Without extreme examples (e.g. the Jack Daniel's case, see appendix A), it was hard for participants to come up with ideas beyond their current situation (e.g. a better unboxing experience at both Sonos and TomTom), and with them they were able to come up with new ideas (e.g. an application that changed based on usage for users of the TomTom app, and extended roles of 'super-users' at Sonos' community).

Finally, participants mentioned that the CRX toolbox made them more conscious of relationships and provided them with valuable insights in how they can design for better them, both between their customers and their organisation and among their customers themselves. This was because the tools supported them in establishing a shared terminology and understanding of how relationships work and what elements are important. The workshop supported in creating a deeper understanding of the CRX framework and its potential for their organisation. For example, they gained the insight and started imagining how encounters could change over time, to steadily increase relationship quality, and how this affected several parts of their organisation. As one Sonos employee remarked: *"This touches so many parts of our organisation; the community, [customer] care, marketing, it really ties it all together!"*

## Discussion and conclusions

The Vorwerk case at the start of this paper is an example of the value that a reciprocal relationship between and among customers and an organisation could provide to all of them. The presented CRX framework and tooling provide companies with guidelines on how to design customer relationship experiences (CRX).

The CRX framework used customer experiences (CX) as a basis for supporting the growth of relationships. Yet, the CRX framework shifts the focus in design literature from mostly inter-customer relationships to the relationships between organisations and their customers. This means the work addresses the concern of several academics (Pullman & Gross, 2004; Gentile et al., 2007; Jaakkola & Alexander, 2014) that practitioners until now did not have the means to design the right stimuli to create excellent customer experiences and therefore customer relationships. Specifically, it gives the means to focus the designer's efforts on specific parts of the customer experience, through which relationships can be built most effectively and efficiently.

The framework does so by taking Cipolla et al.'s (2012) 'relationship prerequisites' to identify which interactions contribute most to the relationship. Afterwards, it integrates the 'relationship quality' perspective from relationship marketing, and customer engagement theory's perspectives on customer's 'motivations' and 'roles'. By explaining and making explicit which type of service elements contribute to relationship qualities, service designers should be better able to design service interactions in which the quality of the relationship is adapted to what the customer deems right. This further strengthens the relationship as customers appreciate the organisation interacting with them at the relationship quality they prefer. All in all, the framework and tooling give practitioners the means to design for relationships more systematic than before.

Aside from benefitting the customer, CRX also benefits the organisation. The reciprocal nature of relationships means customers will contribute more of their resources to the organisation when they are at the right level of relationships quality. As such, they can fulfil additional roles for the organisation like for example design, marketing, sales or even customer and employee support roles.

To our knowledge, this paper is one of the first to translate the original intentions of relationship marketing—aiming for mutual, open, fair and non-opportunistic relationships—to actionable and creative practice in design. This is a step up from the problematic practice in relationship marketing as described by Palmer (2010). It also is a first step in answering the increasingly acknowledged need of design academics (Baek et al., 2017; Griffioen et al., 2017; Snelders et al., 2014) to design for relationships. Indeed, rather than feeding off from one-sided transactions with customers, the Vorwerk case, and the CRX framework and tooling make explicit how service designers might support the engaged behaviours of proactive users to the benefit of all.

## Acknowledgements

We would like to thank Olaf Hermans, dr. Joon Sang Baek and prof. dr. J.M.M. Bloemer for their contributions to the academic validity of this work. Also, we would like to thank Kenneth Refsgaard, Erik van Vulpen, Marie-Anne de Vos, Marije Teerling, Zeeshan Kahn, Anne Voogt, Charles Cassar and Igor Houben at all organisations that shared insight into their organisations and gave feedback on how the CRX framework and tooling were valuable in their contexts. Last but not least we would like to thank Livework Insight for making available all resources to make this project happen, giving feedback on the work continuously and opening up their clientele to take part in the research.

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## Appendix A: Flemish Jack Association



The Flemish Jack association, a group of Jack Daniel's (JD) enthusiasts that for the sake of their own pleasure and recognition amongst themselves create all kinds of JD memorabilia.



One member creates JD inspired paintings and bowlingpins based on the bottle logo.



Another member – who is a steelworker – uses his professional skills to refurbish old children's toy-cars into JD branded children's toys.



Yet another, who is a chocolatier, uses his professional skills to create JD flavoured chocolates in the shape of a barrel.



Their latest group effort was a limited-edition packaging for a special JD bottle, in the theme of the 100 year great war in Belgium. They did packaging design, marketing, sales, investment to manufacture the boxes and distribution, all based on goodwill for JD.

## Suggestions and comments after first version:

The paper was changed in several ways to incorporate the feedback of the reviewers and improve the previous version. A summary of the most predominant changes is outlined here:

- The structure (and some text) was changed to make for a better and more logical piece to read.
- Table 1 was added to clarify the process of all workshops and the insights they delivered for development.
- Figure 3, 4 and 5 were added to clarify the tooling.
- Appendix A was added to show an extreme example of possible customer engagement.
- The relationship between the framework and tooling was made more clear by explaining the theory in the framework and merely its translation into tooling at 'Final Toolset: Three exercises to design for relationships'.

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# Service design and activity theory for the meta-design of collaborative design processes

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## Abstract

This paper explores how the approach, logic and tools of Service Design could support the development of a digital platform that enable the collaborative design of open and collaborative design processes. By integrating Service Design, Activity Theory and Meta-Design, such platform could foster community building and management providing concepts and visualizations that help users in the conscious and reflexive design of the activities constituting their community-based collaborative design processes. How could Service Design enable the meta-design of collaborative design processes on digital platforms? This paper elaborates a proposal for integrating Service Design concepts and tools into a meta-design digital platform for the design and management of collaborative design processes, by providing 1) a reflection on the theoretical connections between Service Design, Activity Theory and Meta-Design, 2) a proposal of a meta-design platform that represents a proof of concept of such connections and 3) a proposal of evaluation strategies for validating such platform.

**KEYWORDS:** meta-design, visualization, process, collaboration, activity theory

## Introduction

In the recent decades ICT technologies have shaped new ways of working, participating in and assessing projects, which in turn have contributed to shaping these technologies even further. Such technologies have had an impact on design on all the activities and actors of the Design ecosystem (discussion, research, manufacturing, distribution, ...) at any scale, from desktop software to digital online platforms, from single actors to whole ecosystems. Consequently, the Design discipline has changed in several ways, for example by increasingly moving its scope from single users to local and online communities, from isolated projects to system of solutions. This direction has sometimes been based on learning from trends in software development and web-based technologies that have created tools and strategies that enable mass-scale and remote and distributed interactions, especially with community-based organizations (examples are open source and peer-to-peer initiatives). In turn, this has



increased the interest in the role of design researchers and practitioners in being able to organize collaborative design processes, especially through meta-design approaches that focus on the management and visualization of their intangible aspects and social dynamics. By adopting a meta-design perspective, new possibilities have emerged in making designers active in the organization and management of collaborative and distributed processes, especially design ones and with multiple stakeholders, especially in their social dimension.

This paper explores how the approach, logic and tools of Service Design could be part of this trend by supporting the development of a digital platform that enable the collaborative design of open and collaborative design processes and therefore the management of the communities behind them. By integrating Service Design, Activity Theory and Meta-Design, such digital platform could foster community building and management through a meta-design activity that enable the emergence of communities as organizations that arise from the networks of interactions generated in designing and deciding the collaborative efforts with all the actors involved. The collaborative process of designing collaborative design processes enables digital platform to be places for a community to form and self-organize. Such approach would extend the adoption of the Service Design logic and tools from designers to any kind of stakeholder participating in such open collaborative ecosystems. This can also be considered the result of the digitalization of the design of services through the increasing role of software development and data modeling on facilitating but also influencing available visualization tools. Therefore, this research might also advance our understanding of the connections between design tools and the software and data supporting them.

This paper therefore focuses on how the Service Design logic and tools can be adopted for visualizing, understanding, discussing and designing collaborative design processes and the communities that manage and implement them over time. Furthermore, the role of software and digital platforms in influencing both communities, collaborative processes and service design tools and practice is another key part of this paper. The specific context of this paper is one where communities of formally trained and informal amateurs collaboratively design and produce artifacts, the Maker movement (Anderson, 2012; Gershenfeld, 2005). Here in this context communities can be found on three levels:

1. a global community of local events and laboratories with a complex social structure (Menichinelli, 2016b);
2. local communities that form in and around local laboratories such as Fab Labs (Ghalim, 2013; Maldini, 2014);
3. the communities that form around the development of projects, especially the ones that are shared openly as Open Design, which then become community-based initiatives (Menichinelli, 2017).

These communities are often integrated as participation in the Maker movement takes place in activities that can span between them; this paper focuses on the community around specific projects (3) but that can extend also to local (2) and global dimensions (1). Following these specific kind of communities, here collaborative design is intended especially in the development of shared projects within the Maker movement: in this direction, the initiatives inspired by open source and peer-to-peer software seems promising (Abel, Evers, Klaassen, & Troxler, 2011; Cruickshank, 2014) especially for their ability to generate community-based initiatives around the sharing of projects but also for fostering several different potential social dynamics for both design and meta-design practice and research (Menichinelli, 2016a).

This paper elaborates a proposal for integrating Service Design concepts and tools into a meta-design digital platform for the design and management of collaborative design processes, by providing a) a reflection on the theoretical background behind the connections between Service Design, Activity Theory and Meta-Design, b) a proposal of a meta-design platform that represents a proof of concept of an implementation of the possibilities emerging from such connections and c) a proposal of evaluation strategies for validating such platform with users. This meta-design platform is based on four interconnected dimensions: conceptual, data, design, software; its research might advance or understanding

of 1) how Service Design might be connected with Activity Theory and Meta-Design in the development of community-based processes and organizations and 2) the relations among design and software, data, processes and organizations. The main research question (**RQ0**) could be structured in more research sub-questions in order to be addressed more easily:

1. **RQ0:** How could Service Design enable the meta-design of collaborative design processes on digital platforms?
  1. **RQ1:** How could the Service Design logic and tools be adopted in the design of community-based and collaborative design processes?
  2. **RQ2:** How could the Service Design logic and tools be integrated in digital platforms in order to help communities design, document, visualize, manage, share and understand their collaborative design processes?
  3. **RQ3:** How could we evaluate this integration of Service Design logic and tools into meta-design platforms?

**RQ1** focuses on the theoretical background, **RQ2** focuses more on the development of a meta-design platform emerging from it and **RQ3** focuses on the validation of such platform. This organization of research questions is mirrored in the structure of the paper:

**RQ1** is addressed in the *Service Design, Meta-design and Activity Theory for Open and Collaborative Design* section, **RQ2** is addressed in the *A meta-design platform based on service design tools* section and **RQ3** is addressed in the *Validation and future research* section. The *Conclusions* section resumes how each of the three previous sections has replied to the research questions proposed in the first section.

This paper represents a further improvement of previous researches in this direction (Menichinelli, 2015; Menichinelli & Valsecchi, 2016) but that were missing the Service Design logic and tools, here developed with more focus especially in the conceptual and design dimensions. The data and software dimensions have been also explored recently in other publications (Menichinelli, Forthcoming).

## Service design, meta-design and activity theory for open and collaborative design

Collaborative dynamics in design processes are not a new phenomenon, since teamwork has always been a common practice among designers, and it has been approached in several different ways, from practitioners recollecting techniques and experiences (Brown, 2013) to researchers analysing practitioners through cognitive psychology (Goldschmidt, 2014). The focus of this paper is especially on design processes enabled or influenced by the adoption of ICT technologies and with wider communities of participants. The aim of this section is to establish through literature review how Service Design can approach the design of collaborative design processes through Activity Theory and Meta-Design by framing, analysing and designing collaborative processes as ecosystems of activities with the help of digital platforms:

- Activity Theory provides the conceptual basis for framing, understanding and designing activities;
- Service Design provides the operational basis for designing activities as services with the help of service design tools and logic;
- the Meta-Design approach provides the conceptual basis for designing collaborative design processes (*designing design processes and organizations*) and the operational basis for designing the platforms that enable such task (*designing design tools, environments, spaces for participation*).

Activity Theory is a framework for orienting researchers in understanding complex socio-technical phenomena and, especially in the version elaborated by Engeström (1987), it

provides a way for understanding the dialectic contradictions and continuous development of individual contributions to collaborative initiatives taking into consideration all the elements that mediate all the activities and their contexts. Activity Theory has been adopted and elaborated inside Human Computer Interaction research and practice since the 1980s' in several directions (Kaptelinin & Nardi, 2012, 2009), for example in order to improve the theoretical background of Human Computer Interaction or as a potential strategy that evolves from Human-Centered Design (Norman, 2005). Kaptelinin and Nardi (2012) identify three ways Activity Theory has been integrated into Human Computer Interaction:

1. as a theoretical re-framing of concepts;
2. as a provider of conceptual tools for design and evaluation;
3. as a theoretical lens in empirical studies.

Activity Theory has also been adopted in Service Design in order to extend Human Computer Interaction beyond individual digital artefacts to the analysis and design of services (Kaptelinin & Uden, 2012), for example by elaborating “an activity based approach that could be used as an analytical tool for communication design practitioners to improve the design of service communication interfaces” that “generates a shift from a service (and communication) design to what we call the design of activity systems” (Maffei & Sangiorgi, 2006, p. 2). Services can be then understood and designed as activities (and thus activities designed as services), and Service Design provides several tools for completing this task in a more intuitive way. Especially when services are considered as the outcome of complex systems of people, artifacts and organizations, they usually have a very limited visual evidence that benefits from visualizations. Services (and therefore activities) can be represented with several tools following four main visual archetypes (maps, flows, images and narratives) with different level of iconicity and representation of time and that, however, cannot render what a service is with just one representation (Diana, Pacenti, & Tassi, 2009). Beside Human Computer Interaction, Activity Theory has also been directly applied to collaborative design by researchers that analyzed the design practice in collaborative settings in order to understand teams' interactions and relative collaborative evolution and its dynamics (Zahedi, Tessier, & Hawey, 2017) and also in the design of communities (Barab, Schatz, & Scheckler, 2004). Activity Theory has also been implemented not just in analyzing but also in redesigning activities through the creation of a shared vision thanks to the identification of contradictions (Engeström, 2000). Activity Theory can be applied not only in the understanding of activities but also in their designing, and this paper suggests that the introduction of the Meta-Design approach (Fischer & Scharff, 2000; Giaccardi, 2003) would be a promising strategy along two main directions:

1. for enabling both professional designers and untrained or amateur designers and users to work together in collaborative design processes thanks to the conscious and reflexive design of the activities constituting such collaborative design processes;
2. for the generation of guidelines for the development of the digital platforms that enable the former point; the importance of a platform here lays in its abilities to enable the participation and networking of a potentially large scale pool of users.

This paper therefore proposes to use digital platforms for exploring how Activity Theory and Service Design could be integrated in order to enable participants in the design of the collaborative design processes they are part of. Meta-Design can provide a complex perspective in this direction since it has several meanings: for example, Giaccardi (2003), crossing etymological facts with extensive literature review identifies three different declinations of Meta-Design where *meta-* is regarded as:

- *behind* (or *designing design*): “Design of Design processes” / “Design of the generative principle of forms” / “Design of the Design tools”;
- *with* (or *designing together*): “Design of media and environments that allow users to act as designers” / “Design of the organization of flows”;
- *between/among* (or *designing the "in-between"*): “Designing the spaces of participation” / “Design of relational settings and affective bodies”.

In the context of this paper, these three directions could be then elaborated into a meta-design framework with these characteristics:

1. *behind* (or *designing design*): a focus on design tools that generate the design of processes;
2. *with* (or *designing together*): a digital platform that allow users to design the organization of interactions and flows between activities;
3. *between/among* (or *designing the "in-between"*): a focus on collaboratively designing the organization of participation in processes through an open discussion.

Therefore, Activity Theory can be then integrated in design along three directions:

1. as a design research tool, in order to identify the problems and contradictions related to a specific project or context;
2. as a qualitative analytical framework for understanding and describing design processes;
3. as a framework for meta-design approaches that adopt the understanding of design processes in order to consciously design them collaboratively in a custom designed digital platform: meta-design of design processes and meta-design of digital platforms that support the former.

Furthermore, an activity-centred approach could represent a systematic view also for understanding business models extending the focus from one single organization (a firm, for example, but in collaborative design initiatives there could be different forms of organization involved) to a system of interdependent activities. Here the focus would be not just on one organization but on one organization and on its network of partners, and all their activities that enable them to create and appropriate value (Zott & Amit, 2010). As an example of this direction, Activity Theory has been adopted also in the exploration of business models of Open Design initiatives by analysing the work of digital maker-entrepreneurs on the Thingiverse platform that enable the sharing of 3D printing projects (Troxler & Wolf, 2017). This research then also points out to possible applications of Service Design, Activity Theory and Meta-Design also to the business dimensions of collaborative design processes.

As a conclusion of this section, Figure 1 highlights the main traits of the framework here elaborated, a Meta-Design approach based on digital platforms that would emerge from Activity Theory and Service Design:

1. Service Design and Activity Theory provide the concepts and tools for understanding and designing activities;
2. Meta-Design provides the concepts for applying the former point to the reflexive and conscious design of design processes;
3. Meta-Design provides the concepts and providing guidelines for developing digital platforms that enable the former two points; such platforms are based on concepts, data formats, a visualization format that renders the data and a software layer that binds together data, visualization, graphical user interface and collaborative editing; the following section focuses on the visualization dimension;
4. such platforms can be applied to the design of, at least, any processes (whether design processes or any processes, whether individual processes or collaborative processes) and especially collaborative design processes but also business models and business ecosystems.

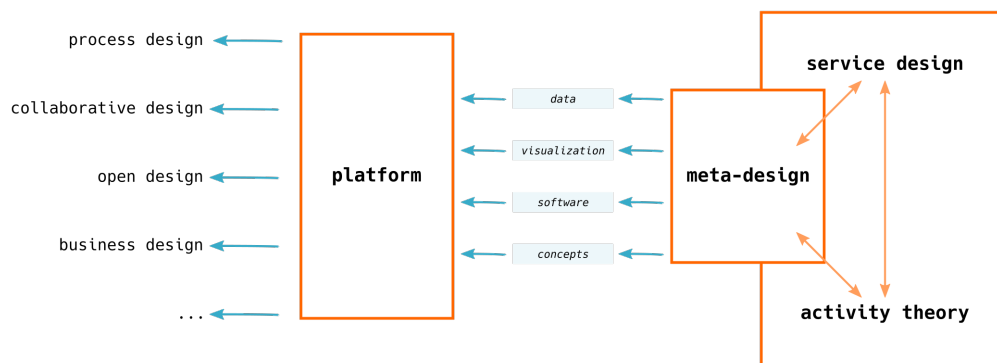


Figure 1 – The framework of the meta-design platform based on the connections among Service Design, Activity Theory and Meta-Design

## A meta-design platform based on service design tools

The previous section highlighted how collaborative activities could be designed both conceptually and operationally, especially into a digital platform that facilitates the participation of users. This section focuses on the visualization dimension of such meta-design framework elaborated in the previous section, proposing a visualization format that could embed the Service Design logic in a digital platform in order to help communities design, document, visualize, manage, share and understand collaborative design processes. This is, ultimately, a task of democratizing Activity Theory to users who are not familiar with it, transforming (at least partially) from a complex research framework to a more intuitive digital platform with a design focus. The need for a democratization and simplification of Activity Theory emerged in previous workshops with students, that found it too complex to use without a previous knowledge or proper visualization (Menichinelli, 2015). Therefore this visualization proposal has three main characteristics:

1. it simplifies the application of Activity Theory in order to make it more understandable; a first step in this direction was taken by simplifying the visualization of an Activity System, with a process that lead to a simpler representation with the use of icons, and that itself could be represented as an icon in the main visualization (Figure 2, 5);
2. it integrates Activity Theory with several other design tools in order to provide a more comprehensive and intuitive understanding of the several dimensions of collaborative design processes;
3. it represents a proposal to be tested, validated and further improved (this will be developed in the following section).

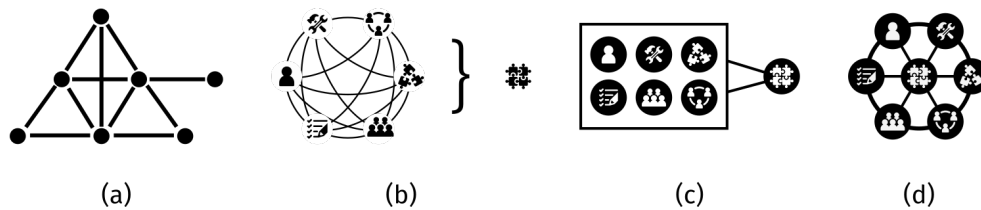


Figure 2 – Simplification of the Activity System representation, from the traditional representation (a) to the one eventually adopted in the meta-design platform (d) (Icons under CC-BY license by Gregor Cresnar, <https://thenounproject.com/grega.cresnar/>)

The tools considered and integrated in the meta-design platform, based on previous experimentations (Menichinelli, 2015; Menichinelli & Valsecchi, 2016), are listed in Table 1, where they are classified by discipline of origin (three of them are from Service Design); these tools work focusing on these elements that they provide a visualization of (Figure 3):

1. activity,
2. time,
3. participation,
4. boundaries,
5. resources
6. flows.

These elements and tools constitute the architecture of the visualization here presented, which can be described as Gantt chart of Activity Systems with flows of resources among them as in a System Map organized according to a Service Blueprint (Table 1, Figure 3). More tools are included or can be potentially included in the visualization beside these main ones (Table 1). The visualization (Figure 4) consists of these visual and interface elements:

1. *Title*: title of the collaborative design process described in the current document.
2. *Version*: version number that shows the evolution of the current document.
3. *Project Description*: description of the collaborative design process of the current document.
4. *Community Description*: description of the main community that the collaborative design processes is meta-designed with / for.
5. *Created / Updated at ...*: quick overview of time and user of the creation and last update of the document.
6. *Edits over time*: a chart plotting the edits of the document over time.
7. *Processes*: activities can be added under four categories as in a service blueprint: Customer processes, Front-Office processes, Back-Office Processes, Support Processes.
8. *Tooltips on buttons*: all the buttons in the interface have tooltips for showing indications to the users, and open modal windows with more in-depth details about the visualization.
9. *Activity description*: visualization of an activity with its flows, contradictions, levels of participations and so on.
10. *Buttons for editing an activity*: these are the main buttons for editing and discussing an activity and all its components.
11. *Participation*: this element visualizes how much an activity is done by the community i.e. the users who are less active or not active in the meta-designing. Results are then plotted in a customer journey chart (15), along with the feedback of the users.
12. *Contradictions*: contradictions of activities according to Activity Theory. Quaternary contradictions are visualized like flows (13), other kind of contradictions can be edited and visualized in a modal window.
13. *Flows*: flows of resources between activities, like in a system map.

14. *Time span of an activity*: This line depicts the time span of an activity
15. *Journey*: users can give a feedback to each activity (this can be easily extended with more options). Results are then plotted in a customer journey chart, along with the participation levels.
16. *Other visualizations of the project*: the platform enables the rendering of other perspectives of the same visualization, for example a list of activities, flows, contradictions and so on, in order to help users in the navigation of the visualization and of its data.

Tools	Source	Activity	Time	Participation	Boundaries	Resources	Flows
Activity Theory	Psychology	X					X
Gantt	Management	X	X				
Service Blueprint	Service Design	X	X	X	X		
System Map	Service Design	X			X	X	X
Customer Journey	Service Design		X	X			
Participation level	Urbanism			X			
User activity	Data visualization	X		X			

Table 1 – Tools integrated in the meta-design visualization

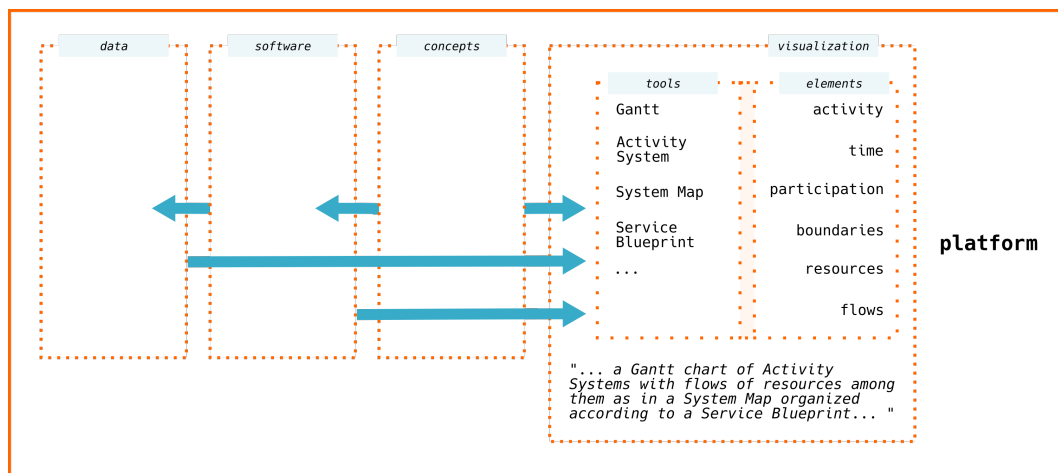


Figure 3 – The dimensions of the meta-design platform, with a focus on the visualization dimension and of its tools and elements





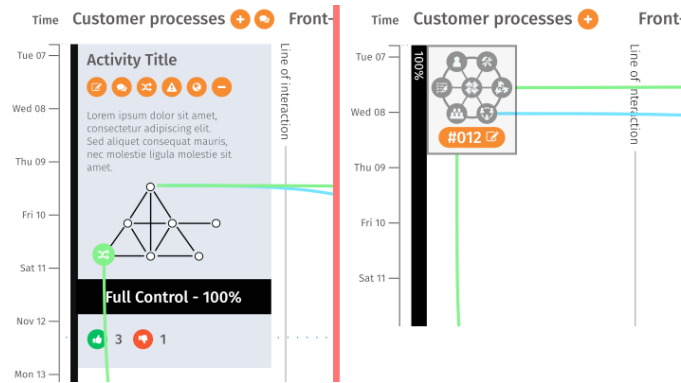


Figure 5 – Comparison between a former visualization of activities and the current one, after a process of simplification of both the activity system representation and of its interface

Figure 6 – A modal window for the edit and discussion of an activity

## Validation and future research

The meta-design visualization and platform presented in the previous section is based on a series of workshops (Menichinelli, 2015) and following reflections (Menichinelli & Valsecchi, 2016), but more steps for validation and future research are essential in order to make sure that such a complex topic, framework and visualization are valuable for users. This section elaborates further strategies and directions for evaluating the integration of Service Design logic and tools in meta-design platforms. As a first step, we can elaborate the research objectives of the validation process:

1. **VRO1:** validate whether the meta-design framework and visualization are easy to understand and use. This objective could be addressed with User Experience methods.

2. **VRO2:** validate whether the meta-design framework and visualization have a positive impact on collaborative design processes already established or to be developed. This objective could be addressed with an Action Research approach.

These validation objectives could be then formulated with the following topics and research questions:

1. **VRQ1. The experience of the users:** how has the platform modified their experience of collaborative processes?
2. **VRQ2. The shared understanding of collaborative design processes:** how does the platform influence the understanding of collaborative design processes?
3. **VRQ3. The social interactions among users:** how has the platform modified the social dynamics among them? Has the platform improved collaboration among users?
4. **VRQ4. The practice of users:** how has the platform modified the collaborative design practice users?

Based on these perspectives, this paper suggests to adopt a triangulation of three different methods for analyzing the visualization / platform and its impact on the courses/workshops in order to understand more the dimensions of the results (Gray & Malins, 2004):

1. **VM21. A qualitative analysis:** a think-aloud session where participants test the platform and openly discuss its functioning. The think aloud technique is a qualitative data collection technique in which user participants verbally externalize their thoughts about their interaction experience, including their motives, rationale, and perceptions of UX problems. By this method, participants give the evaluator access to an understanding of their thinking about the task and the interaction design (Hartson & Pyla, 2012). This method would answer to VRQ1 and VRQ2.
2. **VM1. A quantitative and qualitative analysis:** a survey with questions for the participants (in order to understand the impact of the platform in their experience). It will consists of both open and closed questions. The survey will cover the needs of the participants, their expectations, their experience in using the platform; for this reason, the survey will include established questions like SUS<sup>1</sup>, USE<sup>2</sup>, AttrakDiff<sup>3</sup> (Hartson & Pyla, 2012). This method would answer to VRQ1, VRQ2 and VRQ4.
3. **VM3. A quantitative analysis:** a social network analysis based on the work on the platform and on specific questions in the survey (in order to understand the collaboration, social structure and organization among the participants). Data from social media platforms could be also considered in order to improve the understanding of these interactions. This method would answer to VRQ3.

The focus of this paper is especially on collaborative design around the development of shared projects within digital environments; in this direction, the initiatives inspired by open source and peer-to-peer software seems promising (Abel, Evers, Klaassen, & Troxler, 2011; Cruickshank, 2014). Therefore context for validating this meta-design visualization and platform could consist in the collaborative efforts around Open Design projects developed by designers and makers in Fab Labs and other Maker Facilities. Testing the platform in a real-life setting (a maker collaborative project) would be the optimal context, following the Action Research approach, and User Experience methods could be applied there.

This paper has focused only on the concepts (section 2) and visualization dimension (section 3) of a meta-design platform, and further research and validation might be necessary for the other dimensions of software and data. Furthermore, this paper has not focused on the governance dynamics of the platforms and of the potential conflicts emerging from the interactions among users, which could be a very important topic for future research; Activity Theory could be here adopted for its ability to deal with contradictions and modify activities

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1. <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html>

2. <http://garyperelman.com/quest/quest.cgi?form=USE>

3. <http://www.tandfonline.com/doi/pdf/10.1080/10447318.2015.1064664>

by learning from them (Engeström, 2008). Furthermore, future research could investigate the organizations emerging from this platform, and here Activity Theory could be implemented as well (Blackler, 1993).

## Conclusions

This paper explores how the approach, logic and tools of Service Design could support the development of a digital meta-design platform that enable the collaborative design of open and collaborative design processes. By integrating Service Design, Activity Theory and Meta-Design, such meta-design platform could foster community building and management providing concepts and visualizations that help users forming a community during the conscious and reflexive design of the activities constituting the community's own collaborative design processes. How could Service Design enable the meta-design of collaborative design processes on digital platforms? This paper tries to answer to the main research question (**RQ0**) with three sub-questions:

1. How could the Service Design logic and tools be adopted in the design of community-based and collaborative design processes (**RQ1**)? This question was answered by establishing conceptual and operational basis of such platform by highlighting the already existing connections among Service Design, Activity Theory and Meta-Design. Service Design and Activity Theory provide the concepts and tools for understanding and designing activities while Meta-Design provides the concepts for applying them in the reflexive and conscious design of design processes and the guidelines for developing digital platforms supporting this. This answer provides insights about how collaborative activities could be designed both conceptually and operationally, especially into a digital platform that facilitates the participation of users.
2. How could the Service Design logic and tools be integrated in digital platforms in order to help communities design, document, visualize, manage, share and understand their collaborative design processes (**RQ2**)? This question was answered by developing the visualization dimension of a meta-design platform that integrates Service Design tools and logic with Activity Theory and other tools in order to enable users to meta-design collaborative design activities as ecosystems of activities. Such visualization is based on a set of tools that provide a visualization of collaborative design processes through the elements of: activity, time, participation, boundaries, resources, flows. Such visualization can be described as Gantt chart of Activity Systems with flows of resources among them as in a System Map organized according to a Service Blueprint.
3. How could we evaluate this integration of Service Design logic and tools into meta-design platforms (**RQ3**)? This question was answered by suggesting validation strategies for testing the platform and improving it. The first step was the identification of two broad research objectives: validate whether 1) the meta-design framework and visualization are easy to understand and use; 2) validate whether the meta-design framework and visualization have a positive impact on collaborative design processes already established or to be developed. These research objectives were then translated into four research questions that aim at understanding how the proposed visualization and platform affects the users' experience and understanding of collaborative design processes, and their social interactions and practice. In order to answer these four research questions this paper proposes three different methods (qualitative and quantitative) for analyzing the platform and its impact on the users' practices.

This visualization and related meta-design platform could represent a tool for improving community-based initiatives thanks to its focus on designing, supporting and visualizing the communities emerging from collaborative practices, with the focus on making them aware of these collaborative practices and the social interactions, dynamics and organizations

emerging from them. This paper documents a step in the development process of the platform, and therefore further research is necessary in order to understand how the visualization and the platform are used and perceived by communities, and how communities are impacted by them. The validation proposal is a further step in this direction. Furthermore, other limitations and related research questions could be elaborated here: for example, the context of this research is the Maker movement, but since it is a global phenomenon, the visualization might not be necessarily understood and used in the same way everywhere: previous experimentations highlighted how cultural differences could present a challenge for the adoption of the platform, especially regarding Activity Theory (Menichinelli, 2015). And beside the Maker movement, such platform should also be tested in community-based initiatives in other contexts, and adapted accordingly, in order to understand if the specific context has influenced the functionalities of the platform. Activity Theory and its representation with Activity Systems has been simplified in order to facilitate its understanding and application, and further specific research should improve this democratization; activities and processes, being intangible phenomena, should also be investigated more, especially regarding how they are perceived by designers and users and how their analysis and visualization could be then improved. Further research might be important also for understanding the social dynamics emerging from such platform especially in terms of conflicts and organizations emerging, and Activity Theory could be further implemented as a research approach along this direction. This paper focuses especially on the design and visualization dimension of the meta-design platform, but the software and data dimensions are equally important, and more research should analyze the connections between all these dimensions and how these could be improved (Menichinelli, Forthcoming).

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# Funding service design: Growing service design practice through a grants programme

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## Abstract

This paper presents the findings of a case study from a grants programme aimed at growing service design practice within a mental health network. The case study employed a ‘grants plus’ model, offering both money and coaching support, to promote the use of service design and build ‘communities of practice’ around this common approach within the organisation. The authors reflect on the findings from two grants programmes and share the advantages and challenges of building a design community through a funded model. This offers learning for those trying to scale service design practice across organisations or communities, as well as anyone trying to encourage the use of the process with other teams or organisations where there is a perceived power imbalance.

**KEYWORDS:** service design, scaling, grants plus, voluntary sector

## Introduction

Mind is a federated charity that aims to improve the mental health and wellbeing of people living in England and Wales (Mind, 2018b). Together with their network of 135 Local Minds, they are the largest provider of mental health services across the UK. They operate at a national level providing advice and information to people experiencing mental health problems and campaigning for system change in the mental health field. At a local level, they support approximately a third of a million people with mental health problems through a network of local Minds, which are independent charities in their own right. The local Minds are of varying sizes; ranging from a few thousand pounds in turnover, to a few million pounds. The majority of Mind’s network is involved in the delivery of public services for mental health in some way, either as providers, partners of providers, or, as advocates for beneficiaries (Mind, 2018a).

Mind launched their service design programme, Service Design in Mind (SDiM), “as a response to the transformation agenda and the mantra of austerity” (Pierri & Warwick, 2016). The aim was to introduce local Minds and national Mind departments to design approaches to encourage the co-design of services with beneficiaries to create desirable, efficient and effective offers (Pierri, Warwick, & Garber, 2016). In doing so, the programme

aimed to create a Community of Practice; a group of advocates who used and encouraged the use of the approach to sustainably grow the practice and capitalise on the innate creativity of non-designers (Pierri et al., 2016).

Following the launch of a bespoke methodology and toolkit, the SDiM team offered coaching support to local Minds who expressed an interest in using service design approaches. However, the team recognised that using the approach requires a capacity and commitment that was difficult for many organisations to provide during a period of such austerity. The programme therefore looked to fund Local Minds to use the approach. Mind already had an existing Local Mind grants fund, which makes annual grants of up to £30,000 to organisations in the federated network. Following an independent review of the current Mind grants scheme, alongside the aims of the SDiM programme, it was suggested that an 'Insights' grant and a 'Prototype' grant would support Local Minds to use SDiM resources to explore (insights) or test (prototype) an idea. It focused on these aspects of the design approach specifically, as Voluntary Community Sector (VCS) funders tend to fund service delivery, rather than development. As a result, organisations commit to a service model in the application stage, and so they do not venture from traditional offers, nor establish the viability or desirability of their ideas.

To support organisations to explore and test, the team decided to use a 'grants plus' model, which is a programme of support that includes 'activity which is additional to a grant and the grant-making process' (Cairns, Burkeman, Harker, & Buckley, 2011, p. 5). Foundations and trusts have been 'giving more than money' for numerous decades, but it has become a more popular practice in recent years as a way of ensuring that financial support has the maximum impact (Cairns et al., 2011). It is also seen as an approach to ensure that organisations have the capacity, means and strength to perform more effectively (Mandeville, 2007). In this case, the SDiM team recognised that they would need to provide service design training and mentoring in addition to money, as financial support alone would not guarantee the quality of engagement and application.

In January 2015, the SDiM team ran a prototype of the Insights grant with two local Minds, who were awarded £5,000 each and service design support to explore a specific issue relevant to their locality using a service design approach. Having received positive feedback from stakeholders at the two sites, and observing an increasing demand for SDiM support, it was decided to launch the Insights grant and Prototype grant in September 2015. The fund offered up to £8,000 to each local Mind, alongside specialist support, to either explore an issue or test out an idea over a maximum six-month period. Each grant recipient was encouraged to form a project team, comprised of a project lead who was the key liaison with the SDiM team, and any other relevant staff, volunteers or partners who could support the service design activity. The SDiM team delivered three training workshops: one held at the project site that acted as a kick-off for their team; and two held at a central location, which brought together all grant recipients to get an overview of key stages of the process relevant to them. The project team also had regular coaching calls with an assigned member of the SDiM team, to provide expertise, critique and encouragement. At the end of each project, the grant recipient submitted a visual report documenting their process, outcomes and experience.

This paper draws on an independent evaluation of the first Insight and Prototype grant, which supported seven local Minds to use service design for the first time. It first outlines the research approach and how the data was gathered and analysed, before presenting the benefits and challenges of using a grants plus model, all of which are linked to the relationship between the SDiM programme and the project team. It concludes by suggesting how similar programmes might 'fund' the scaling of service design activity, and the potential for further research.



## Research Approach

This research was conducted as part of SDiM's learning strategy, which aims to reflect on, and, codify practice at three key stages of the programme's development: *design* (the development of the SDiM programme, methodology and team); *perform* (designing the demand and refining the offer); and *embed* (embed design thinking and approaches in the organisational culture). The programme is currently in the *perform* stage and so the research aims are tailored to the following ambitions of this stage:

1. Encourage – Understand the barriers and drivers to using service design and increase the awareness and use of service design;
2. Enable – Understand the resources and guidance SDiM should provide;
3. Impact – Understand and capture the impact of using service design.

The overarching research question of interest in this case was: 'how should we facilitate service design projects?' To ensure the accuracy and validity of the findings, an independent researcher explored the following:

1. The impact and outcomes of using service design to the grant recipients.
2. The perceived and actual value of the grant to the recipients.
3. The role and the value of the 'grants plus' offer to the grant recipients.

This paper focuses on the findings related to the second and third objectives, in order to contribute to the on-going discussions on how to scale and embed service design approaches in novice organisations and communities (Morelli, 2014; Sangiorgi, Prendiville, & Ricketts, 2014).

## Research Design

A case study design was adopted as the research would "define topics broadly not narrowly, cover contextual conditions and not just phenomenon of study, and rely on multiple and not just singular sources of evidence" (Yin, 2003, p. 33). It is also seen as an appropriate research methodology to develop theory from practice (Breslin & Buchanan, 2008; Teegavarapu & Summers, 2008). This was an exploratory case study, as it aimed to explore a phenomenon in its real-life context (Yin, 2003, p. 3). Each local Mind that was a grant recipient was considered a case study, resulting in an embedded, multiple-case design that allows the authors to draw generalizable insights (Yin, 2003, p. 45).

The research was qualitative by nature, in order to explore "well-grounded, rich descriptions and explanations of processes in identifiable local contexts" (Miles & Huberman, 1994, p. 3). An independent researcher gathered a 'learning history' from each project; a story of the process, including the experience and learning that the project team went through, not just what happened and when. This was gathered through a semi-structured interview (Robson, 2011) with the project lead(s).

As the aim was to understand how the grants programme supported the growth of service design capability and knowledge, the research was solely focused on the relationship between the organisation and service design practice, rather than the impact of the design outcome itself. As such, the research into the 'Insights' and 'Prototype' grants focused on the impact on the individuals and organisations involved, rather than any beneficiaries of any resulting services. The sample strategy was therefore to interview the project lead(s) who could provide the most detail about all aspect of the grants plus model, from application to final report. The projects and data sources are outlined in brief below (Table 1):

	Project focus (as described in application)	Number of project stakeholders interviewed
Insights Fund		
Local Mind A	How do we inspire young people to prioritise and invest in their mental wellbeing to develop thriving communities?	1
Local Mind B	How can we best support local people suddenly made redundant in order to minimise any adverse impact on the mental health and wellbeing of themselves and their families?	2
Local Mind C	What methods are most effective in engaging young people at risk of joining gangs to prevent mental ill health and promote pro-social behaviour?	1
Local Mind D	What are the needs of people living on a deprived estate?	1
Prototype Fund		
Local Mind E	Exploring if offering activities (particularly sports) will encourage more young men to engage and will deliver wider benefits including improved physical health.	1
Local Mind F	Exploring if advocacy clinics within GP services would offer a support provision for people with mild – moderate mental health conditions who are not eligible for statutory advocacy services.	1
Local Mind G	Exploring if a flexible choices pathway would promote and support good mental health and wellbeing in young people.	1

**Table 1: A table showing the organisations involved in the programme, the project focus and number of stakeholders interviewed**

The independent researcher also ran a workshop to collect the reflections of the three design coaches who had supported the projects, providing an internal perspective on the facilitation of the work. The outcomes of this workshop, along with the case studies, has subsequently been analysed to extract learning.

## Data analysis

As this research was both qualitative and exploratory, the authors adopted a Grounded Theory approach (Glaser & Strauss, 1967) to build theory directly from the data, without being influenced by pre-defined hypotheses. This research went through four distinct stages:

- data-cleaning;
- first-stage coding;
- building multiple coding collections;
- and identifying themes and patterns.

Each interview was transcribed by the independent researcher and put into a common format to aid reading of the text. Each interview was read several times with hand codes made amongst the text (Glaser and Strauss 1967, 106). Each excerpt of text that related to one of the research objectives was copied onto a Post-It note, to continue the manual analysis of the data. Post-Its from the workshop conducted with the coaches were also added at this stage.

Post-Its were grouped according to commonality in meaning, creating a series of categories. Each category was then given a title that summarised the common meaning of the group, where possible using terms from the quotes in the collections. Looking across all of these groups allowed the researchers to identify a set of themes related to the research objectives. These themes are discussed in the following section.

## Discussion

It should first be noted that the independent review found the Insights and Prototype funds to have been successful in their primary aim of promoting the use of service design; all project leads were enthusiastic about the approach and intended to use service design again. They all felt that service design had helped them to gain new knowledge about their potential service users' needs, and that had led to a more successful project outcome. The project outcomes varied across the cases, including: new services; new policies; new job roles; new partnerships; and secured funding for delivery. However, they all felt that they had achieved the most desirable outcomes for their organisation, and linked that directly to their use of service design.

Although valuable data, this builds on an already extensive body of knowledge about the impacts of design on services and organisations in the voluntary sector (Guldbrandsen & Lindeberg, 2014; Warwick, 2015; Yee, White, & Lennon, 2015). The focus of this discussion is instead on the benefits and challenges presented by the use of the grants plus model to encourage that activity. To do this, we present four themes that encapsulate this learning: *creating dedicated time and space*; *establishing relationships*; *the residue of traditional funding arrangements*; and *building multiple communities of support*.

### Creating dedicated time and space

In Bailey's (2012) exploration of the factors that affect how service design is embedded within organisations, he established that assessing design 'readiness' is not sufficient to determine whether the approach will be embedded sustainably. He found that staff need to be given the time and space to move away from the day-to-day delivery of services, and to focus on developing ways of doing things differently (Bailey, 2012).

In this research, it was found that participants viewed the grants plus programmes as enabling: it gave the 'luxury' of time to focus on values and engagement that they otherwise would not have been able to do. The interview participants particularly valued the financial support as they noted a lack of similar funding in the voluntary sector to simply research an issue or test an idea.

Similarly, and perhaps more surprisingly, the research showed that the programme had also created a dedicated time and space for the design coaches. The SDiM team noted that their own time and resources were limited, which impacted on their ability to sustain regular contact and long-term relationships with the local Minds engaged with service design. This in turn could lead to loss of interest and momentum in the organisation, at what is a very delicate moment; their first encounter with new methods, tools and ways of thinking. The advantages of a grants plus model are particularly evident here, as it provided dedicated resources and time for teams within local organisations, allowing them to commit to a new project. Similarly, it allowed the supporting design team to work consistently with a selected and smaller group of projects, providing focus and the right impetus for pushing the approach within the organisations involved.

This time and space also allowed project teams to develop their service design knowledge and skills through 'doing', with the safety net of structured support. The data showed that

their confidence in using, adapting and integrating service design grew over the course of the project, often attributed to their coach's support and training workshops that brought order to the 'messiness' of user research and co-creation.

However, the data showed that a disadvantage of the grants' structure was that it only supported *part* of the design process i.e. research or prototyping. In the workshop, the coaches reflected that this had been to keep projects short and focused, but as a result, project teams only had confidence in one aspect of service design. The projects clearly created an impetus to use the approach again, but the teams only felt confident to use the tools and methods they were already familiar with. Without the time and space afforded by the funding, project leads described feeling unable to progress to the next stage of the process. Similarly, coaching relationships stalled as the SDiM lacked the structure to maintain regular contact and encouragement.

## Establishing roles and values

By creating space and time for dedicated work and reflection on service design projects, the grants plus model also allowed the SDiM team to be more deliberate in the way relationships with the project teams were formed and nurtured. Alongside the more formal grant contract, a 'Partnership Agreement' was signed at the beginning of the projects. The Agreement clarified the expectations, the values and the roles that the two parties were agreeing to follow: for example, that the coach would be both critical and encouraging; and the project team would be open-minded, honest and patient. It linked each of these attitudes back to the design process to help emphasise this new way of working and create a shared understanding on the roles of each party.

The data shows that each project team formed a successful relationship with their design coach largely based on the values depicted in the Agreement. The coaching support had an enabling effect on project leads, who felt motivated and confident to carry out service design as a result of this guidance. For example, a stakeholder in one local Mind described the support as "genuinely very engaged and committed to us doing the best project that we possibly could, facilitating us to ask the questions, or explore whatever emerged".

However, the coaches and project leads noted that the pace of the communication often created tension in the relationship. In the projects that moved at a consistent speed, coaching calls were mutually agreed and occurred regularly. However, some projects had slower periods of activity, mainly due to external barriers, for example, being unable to meet with a key partner. The lack of contact from a project team would prompt the design coach to arrange a call to 'check-in', which felt like "being checked up on" to project leads. In one local Mind this proved to be a particular point of anxiety, as the project lead felt he "had nothing to say" and the calls were at "unhelpful" points in his project.

The Partnership Agreement was intended to set a context for the collaboration that was a departure from the traditional Mind-local Mind working relationship, which was rarely collaborative and often hierarchical. However, the data shows that the legacy of this relationship remained, and it coloured project leads' reception to aspects of the coaches' role, in particular the role of the challenger or 'provocateur' (Tan, 2012): "I felt she was telling me what to do".

The coach's role as 'expert' also created a hierarchy that acted as a barrier to disclosing any issues. The interviews revealed that in nearly all cases, project leads withheld at least one concern or failure from their coach. The lack of openness often acted as a barrier to the success of the project for a period of time. The SDiM team reflected that using the term 'co-creators' might have helped to better establish their collaborative role in the project, and remove the power implied by the term 'coach'. As a co-creator, the SDiM would ask for and provide critical friendship, creating a relationship where the designer does not impose their views, but listens and collaborates in a reciprocal relationship (Cipolla & Bartholo, 2014).

This would also explicitly establish the role of project teams to shape the service design support offered; one stakeholder noted “it would be nice to have more of a feedback system... an area for us to say ‘it would be helpful if we had a tool like this’.” The term ‘co-creator’ could therefore help to establish design coaches as co-creators of the local Mind’s projects, and local Minds as co-creators of the service design community.

## Residue of traditional funding arrangements

As well as the legacy of a traditional Mind-local Mind relationship, the grant model also imposed an implied hierarchy that impacted on relationships. A grant is not a new tool in the VCS, and is usually attached to a strict contract, a tough monitoring and evaluation system, and a clear hierarchy. The funders are always the evident and unique source of power, even in relation to Mind’s own grants programme. Therefore, the Insights and Prototype funds were not as neutral as intended. Data showed that they were associated with a long history of specific values and rules, including: the grant recipient should already have all the answers (or pretend to have them); project management is the default approach to the delivery phase; failure is not contemplated; and impact is measured in purely quantitative terms.

Although the Mind Community Programme and Grants team had administered the grant, some project leads still associated the financial support with the SDiM team. This resulted in the project team sometimes hiding away from their coach if they perceived they were late or not progressing as well as they wanted, as they assumed seeking for help or advice proactively was not going to be perceived positively. Flattening this hierarchy and challenging these stereotypes took time and encouragement from coaches across multiple interactions, including coaching calls and workshops. However, the grant makers also needed to push this agenda through their interactions with the project teams, as they are seen not only as current funders, but also future ones. The independent researcher noted:

*“When there’s a representative from the grants team, it could inhibit the idea that it’s OK to fail... That tension could be useful to explore for future times, to remember local Minds have one voice in their heads, ‘am I going to get future funding?’”*

However, the SDiM team also acknowledged the value of having the grant structure as both “carrot and stick”, where the grant contract could be imposed where there were periods of inactivity or the lack of commitment to the service design approach. In local Mind E, the design coach paused the project and withheld funds until the project team could be committed to the work, which helped to ensure the full engagement of the team and led to a successful outcome. These moments of contractual challenge need to be carefully managed so that they are not associated with ‘designerly’ challenge, nor reinstate the power imbalance between the parties. Any grants plus programme would have to navigate this tension between: encouraging freedom to embrace uncertainty, change track, and take time; and the need to keep the pace, avoid project drift, and produce practical deliverables for the different phases of the design process.

## Building communities

The analysis found that a grants plus approach also established a special way of connecting people together, which was focused on both: the process, the common learning journey of introducing a new approach; and the project, as local Minds were invited to work together on similar topics or around common issues (i.e. young people’s mental health).

The first training workshop acted as a launch event, introducing key service design principles and the resources available. The second workshop was held approximately half-way through the project timeline to reflect on their work so far, and introduce ways to analyse and translate data into design outputs. At least two people from each of the local Minds came to the workshop to share projects updates, methods used, and tell the story of what was

working for them and what wasn't. As staff were hearing from peers about their struggles with the process, but also about the excitement of working differently from the routine, it was evident that a "community within a community" was starting to take shape. By encouraging shared moments of reflection and mutual learning, the grants plus model had helped to establish the creation of a collaborative community of peers. Everyone was encouraged to provide advice and solutions to each local Mind's issues, and so their confidence in their own work, and the process, grew as a result. One stakeholder described the workshops as: "absolutely excellent, brilliant, inspiring, an opportunity to meet with other Minds... Some of the ideas, and how they were presented, there were so many different ways and approaches to doing things."

Although the funding helped in part to create a community of service design advocates, research showed that knowledge of service design did not always permeate beyond the project team to other parts of the host organisation. One project lead said:

*"I think if I'm being honest that's where we didn't work so well as an organisation. Really honestly, if asked if they knew what we were doing, some people would probably say, 'what are you on about?'"*

The complexity of organisations and networks has been recognised as a barrier, particularly to more collaborative design processes (Pirinen, 2016). There were examples of the projects impacting on organisations, but mostly through the outcomes of the design activity. In one local Mind, the team's engagement with young people led to the organisation creating a 'Young Person's Engagement Lead'. In the coaches' workshop, the design coaches recognised that whilst the aim of the programme was to inspire wholesale change, having only one contact with the organisation meant that it was difficult to have this impact.

## Conclusion

This paper has presented a series of advantages and challenges to scaling service design through a grants plus programme. Despite the problems highlighted in the discussion, the authors believe this hybrid approach offers the most viable form of building a service design community in organisations that are so resource-scarce. Combining funding with specialist coaching allows teams to carve out vital time and space to dedicate to this new way of working, with a 'safety net' that helps the project to be as impactful as possible.

The relationship between coach and project lead has been revealed as the cornerstone in these engagements. The data presented here has shown that many of the programme's existing structures, such as the Partnership Agreement, are useful tools for other practitioners attempting to establish constructive working relationships at distance. However, the very nature of a grant programme has created a second, underlying affiliation of funder and recipient that has been shown to impact on the quality of communication. This dynamic is particularly important to consider when working in voluntary sector contexts where relationships with grant funders are traditionally hierarchal and without mutuality. Future iterations of the programme will attempt to mitigate these legacy issues by attempting to create a clear distinction between the grants team and the service design team. However, further research is required to understand how to create the flattened hierarchy that is desirable in design teams, when the contractual arrangement automatically creates a power imbalance.

Similarly, future programmes need to consider how to extend the relationships between design coach and project lead from one-to-one, to team-to-organisation. The data has shown that the project outcomes can have significant impact on the organisation, but the impact of the process often stays within the project team, that are frequently comprised of just one or

two people. For the programme to act as a true community builder, design coaches have to work with the design team and organisation simultaneously, to help the approach to permeate beyond the boundaries of the project and impact on other aspects of the charity. In this case, the SDiM team plans to fund service design projects from start to finish, to help build longer, stronger relationships that will provide more opportunity to influence on this wider level.

Finally, this research has highlighted the importance of using this model to build multiple service design communities simultaneously, to capitalise on the momentum and impact created by positive engagements. Firstly, practitioners working in this area should consider how they support design teams to create a *community of engagement* within their own organisation. These communities would provide on-site peer support and help expose people to service design. Designers then need to leverage these disparate communities to form a *community of practice*, where engaged stakeholders can continue to cultivate their service design expertise. A particular challenge will be to help this community to feel supported and connected across diverse locations and with many pressing agendas. Finally, and perhaps most importantly, designers need to build a *community of interest*, comprised of those that understand the importance of the process, and provide the necessary support, permission and resource to allow the other communities to thrive.

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### ***Track 8: Envisioning and evolving***

As the title of this conference implies, Service Design is entering a more mature stage and needs a 'proof of concept' of its value and relevance for a variety of contexts and within multidisciplinary settings. This track aims to bring together on-going reflections touching on the future of this field and its diverse geographies and interpretations.

Other tracks are exploring fundamental questions related to education, practice, environment, measurement and collaboration, and address developing areas such as design for policy, social innovation and engagement, distributed forms of fabrication. This track takes these reflections a step further, exploring the possible future evolution of the concept and practice of service design.

Possible areas of interest relate to: the developing forms of service design practice; the multidisciplinary nature of designing for services; the relationships and contamination with close and collaborating disciplines; the positioning of service design and its role within the wider fields of service science and service research; the way the transformation of objects of service design may impact on the practice and identity of service design itself.

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# Envisioning and evolving: Future evolution of the concept and the practice of service design

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## Abstract

Service Design is evolving from an emerging field, breaking new ground in the design and service research areas, to a more mature stage, developing a set of fundamental concepts, methods and principles that can provide the foundation for its further significance and impact in both research and practice.

This paper reflects on the roots and recent evolution of service design in terms of fundamental concepts, methods and outcomes, taking into account the papers in the Envisioning and Evolving track. It considers how the growing interrelation with close fields of service research is introducing useful “contaminations” and reports how the Service perspective is revealing its potential to bring life to technical and entrenched systems. It goes on to argue that design should aim to bring services to life to prove its real, distinguishing value and contribution.

**KEYWORDS:** service design, multidisciplinary, service design evolution

## Introduction

As the title of this conference suggests, service design is entering a more mature stage that requires ‘proof of concept’ of its value and significance for a variety of contexts and within multidisciplinary settings. This track aims to bring together ongoing reflections touching on the future of this field and its diverse geographies and interpretations.

Other tracks explore fundamental questions related to education, practice, environment, measurement and collaboration, and address developing areas such as design for policy, social innovation and engagement, and distributed forms of manufacturing. This track takes these reflections a step further, exploring the future evolution of the concept and the practice of service design.

Our initial call for papers suggested possible areas of interest relating to: the developing forms of service design practices; the multidisciplinary nature of designing for service; the relationships and contamination with close and collaborating disciplines; the positioning and role of service design within the wider fields of service science and service research; and finally on the way transformation of the objects of service design may impact on the practice and identity of service design itself.

Questions connected to the track were: How is the constant evolution of the object of service design affecting service design practice and identity? How can the evolution of service design within a multidisciplinary innovation practice be envisioned?

This introductory paper reflects on the overall topic of envisioning and evolving the field of service design. Starting from the co-chairs' personal recollection of where this practice comes from and where we are heading to, it goes on to review the accepted papers representing three levels of reflection: the fundamentals, the methods and the outcomes of service design. The paper closes by stating that the evolving nature of the field is not really aiming to become an established one.

## Where we are and where we come from

Service design builds on the design and service research fields (Patrício et al. 2018a). Early service design approaches came from service research focused on blueprinting to ensure a consistent service experience and to detect and correct service failures (Shostack 1982). This perspective has evolved to address more complex service systems and become more customer-centred, incorporating multidisciplinary contributions such as marketing, operations management or information systems.

Service design can be described in multiple ways, from a problem solving perspective closer to engineering and management, to an exploratory inquiry – "designing for service" – approach (Kimbell, 2011). Within the design discipline, service design has evolved as an exploratory inquiry (Kimbell, 2011) for understanding service problems or opportunities that emerge, by building on a design thinking process (Blomkvist et al. 2010; Brown 2008). From this perspective, service design is viewed as a human-centred, holistic, creative, and iterative approach to creating new service futures (Meroni & Sangiorgi 2011).

We are now in a stage where service design has acquired wide recognition within the realm of design studies (Secomandi & Snelders, 2018), and also attracted growing interest from close fields of service studies such as service research, service science and service innovation (Patrício, Gustafsson, & Fisk, 2018a).

We all know how this field has emerged in the design discipline as an exploratory study in the application of design methods and principles to a new object of design - services - and how this has faced resistance and challenges in proving and illustrating what designers can actually bring to this economic sector and complex area of innovation (Meroni & Sangiorgi, 2011). This challenge is not over yet, but there has been a significant evolution in how design studies and practice have consolidated examples, fields of applications and approaches that are in constant transformation. Thus, service design has moved on from focusing on improving experiences, interactions and interfaces, to approach the complex and still very contemporary issue of changing behaviours, organisations and complex service systems (Sangiorgi & Prendiville, 2017).

Innovating services has also demonstrated the wide variety of sectors and applications, with significant evidence of the diversity and peculiarities of working for public services and social innovation (Bason, 2010; Manzini & Staszowski, 2013; Selloni, 2017). Here, the application of design methods has climbed the ladder, gaining the attention of governments and public institutions, opening up the tangential study area of design for policy (Bason, 2014;

Junginger, 2016). Other special and developing applications concern the infusion of services into manufacturing organisations (Sayar & Er, 2018), or the building up of innovation capabilities in organisations (Nusem, Wrigley, & Matthews, 2017).

The construction of dedicated approaches and methods has been object of investigations, action research and reflections by both design academics and practitioners, with the aim of making design contributions more tangible and clear (Penin, 2018). This initially consisted in adopting and adapting methods from service marketing, service operations, interaction design and participatory design. The application of co-design methods in particular has attracted considerable attention given the co-produced nature of services and the intricacy of service innovation with organisational change (Meroni, Selloni, & Rossi, 2018). We now have a language, principles, an overall methodology and specific methods and tools that have become more established and have attracted the attention of organisations that want to develop their own design capabilities to become more competitive and innovative.

Service design as a design field has therefore gained importance in both research and practice, and has set up its own conferences and communities. At the same time, both design and service research approaches have contributed to evolving and establishing the ground for service design, and both perspectives acknowledge its multidisciplinary nature. However, while some research has tried to integrate these two perspectives (Teixeira et al. 2017; Wetter-Edman et al. 2014), further work is still needed for service design to establish multidisciplinary dialogues and advance as an interdisciplinary area.

The two special issues on service design recently published in *Design Studies* and the *Journal of Service Research*, leading journals in their respective areas, demonstrate how service design has become an important field in its own right and a key enabler for service innovation. The articles published in these special issues already build the ground for the evolution of service design as an interdisciplinary field, namely through the study of how it can enrich new service development (Yu & Sangiorgi 2018); the integration of design and management perspectives to understand its impact in institutional logics in organizations (Kurtmollaiev et al. 2018); and the integration of service design and product service system design in a service logic framework (Costa et al. 2018). These are encouraging developments that show how service design is a vibrant and evolving research area.

If we look at this recent evolution of the field, it is also necessary to acknowledge how it is linked with the parallel evolution of the meaning of service and design. As for other disciplines, from the start, services have represented a specific economic sector, with various and very diverse sectorial areas such as transport, storage, catering, wholesale, retail, business services, etc. In the design field, services were also conceived as specific market offerings with characteristics that distinguish them from products, such as intangibility, heterogeneity, inseparability, or perishability (Zeithamal, Parasuraman, & Berry, 1985). As such, design had to articulate and argue for a dedicated approach to design for better services (Meroni & Sangiorgi, 2011).

More recently, services have been discussed in a “singular” manner, as more than just a specific sector or market offering (Edvardsson, Gustafsson, & Roos, 2005). A service became more of a business logic (Grönroos, 2008): a way to co-create value that has informed the establishment of a meta-level study of the evolution from a good-dominant logic to a service dominant logic (Vargo & Lusch, 2004; Vargo & Lusch, 2008), calling for a paradigmatic change in the approach to economy and innovation. Therefore, when we design for service instead of services, the focus shifts to the transformational processes implied in this change of mentality and perspectives (Sangiorgi & Prendiville, 2017).

Similarly, design had some recent evolutions in terms of interpretations and consequent applications of design skills. As for other disciplines, at its origin service design focused on proving the importance of bringing design approaches to service innovation, with a dominant interest in understanding what designers do, and why this is valuable. This designer-centric perspective, as discussed in the previous paragraphs, is still relevant, but it is

increasingly obliged to relate and position within a wider, multidisciplinary area of service innovation, acknowledging the pre-existing work, language and approaches of service design as a multidisciplinary field (Kimbell, 2011; Sangiorgi, Prendiville, Jung, & Yu, 2015; Patrício, Gustafsson, & Fisk, 2018a). This evolution implies moving the attention from the designer to designing, as a multi-faceted activity that requires convergence and collaboration. The term “designing” has also other implications, as it focuses on a continuing process which exists before designers come in, and continues after the design work is completed and the innovation implemented (the so called design-before-design and design-after-design or design in use) (Björgvinsson, Ehn, & Hillgren, 2010; Ehn, 2008). This further shift is fundamental if designers want to acknowledge the pre-existing innovation practices and “design legacies” (Junginger, 2015), if they accept the challenge of accompanying innovation processes to the implementation stage, and if they value the implications of adoption, continuous improvement and change.

## What is the current evolution

So we are now at ServDes18, questioning what we have achieved and asking what comes next. We can see, thanks also to many recent PhD studies, how research has advanced and is touching on some key contemporary issues, that surely need some attention.

One of these areas concerns the mode and strategies for making design knowledge tangible and transferrable and building design capabilities in organisations and communities; this in practice has meant the compilation of numerous toolkits, training initiatives and the establishment of in-house design/innovation labs (Kimbell, 2015; McGann, Blomkamp, & Lewis, 2018). In terms of studies, some authors have adopted the theories of learning organisations and knowledge transfer to reflect on the potentials and conditions for an effective development of design skills, mindset and units in organisations of different kinds (Malmberg, 2017). This area of study is tangential to the multiple investigations on the application of design thinking by other non-design professionals or on the impact of its development within businesses.

Another key area concerns the role digital innovation and digital artefacts are playing in service innovation, calling for collaboration between Service Design and Information System research (Barret, Davidson, Prabhu, & Vargo, 2015). From being just technological tools in the service delivery processes, ICTs have become widely recognised as fundamental transformational resources for service (ibid). In service design, this has not only brought attention to their potentials, but also to the ethical questions that digitalisation and automatization are generating, and the hidden implications of some of these evolutions, for example for the job market (Blomberg & Stucky, 2017).

The technological evolution inevitably has considerable impact on the practices of Service Design, which is converging and integrating with UX expertise as well as being adopted by digital innovation agencies. This convergence is now at the point that it is difficult to consider service design as separate from the issues and implications of digital innovation. First and foremost, there are the still peripheral conversations on the need for cultural and organisational change (digital transformation) when companies need to translate their operations into digital means and channels. This is a space where the original academic service design community is starting to integrate their previous view on service innovation with the inevitable dimensions that the digital innovation introduces.

Another consequence of digitisations is the growing complexity of the service provider system, which is often a combination of different collaborating actors, interlinked by digital media. Service design is increasingly faced with the challenge of designing both within and for complex service systems. Such transformations call for the interconnected design of the micro and the macro, coherent coordination of multiple channels and governance of the unpredictable nature of the emerging systems and their interrelationships (Sangiorgi, Patrício,

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& Fisk, 2017). The multidisciplinary nature of service design is a challenge, but also an opportunity. For example, whereas holistic, creative and participatory design approaches are crucial to envision new service futures, more systematic approaches to service operations can facilitate the implementation of design concepts. While the multidisciplinary scope of service design conferences and research initiatives represent important efforts towards that aim, such as ServDes and the Service Design for Innovation Network – SDIN ([servicedesignforinnovation.eu](http://servicedesignforinnovation.eu)), it is important to explore complementarities and develop integrative methods that can support multidisciplinary teams in designing new services.

Whereas the service research community recognizes the key role service design can play in service innovation (Ostrom et al. 2015), how it can contribute in terms of both innovation process and outcomes still requires further effort. Service design contributes to break free from more structured new service development processes toward more creative and collaborative approaches to service innovation (Patrício et al. 2018a). Recent research shows that service design can enrich new service development through a contextual understanding of the user experience; co-design approaches that facilitate value co-creation; or prototyping to improve resource and process configurations (Yu and Sangiorgi 2018). The use of service design methods can also help actors break free of existing institutions and contribute to service innovation (Wetter-Edman et al. 2018).

Service design methods and approaches are also evolving to cope with technological change and to move on from improving interactions and interfaces, towards creating new services to foster behavioural change in organisations and complex service systems. To this end, service design methods are also evolving to facilitate value co-creating interactions in value networks, and to balance potential conflicts among different actors (Patrício et al. 2018b). In this context, service design adopts a participatory and pluralistic approach based on the belief that service systems cannot be completely understood or designed. They can only be collaboratively interpreted, with designers playing a facilitator role (Sangiorgi et al. 2017)

## Three levels: fundamentals, methods and outcomes

This paper is an introduction to a session of papers that manifest some diverse answers to our initial questions: How is the constant evolution of the object of service design affecting service design practice and identity? How can the evolution of service design within a multidisciplinary innovation practice be envisioned?

We have selected papers that touch on some of the issues that we have illustrated so far, and that open up further reflections, which we will collect and work upon in our conclusive section. In our opinion the 9 papers that have been accepted for this section and the 2 industrial cases cover three main levels of study: the fundamentals of service design as a multidisciplinary field of study; the developing methods that are constantly trying to evolve the discipline and practice in view of current scenarios; and the outcomes that illustrate research projects in specific areas of applications that exemplify some of the recent evolutions of the discipline.

After a brief review of these contributions, we will articulate our own reflection and then suggest where this all leads and which questions still need to be addressed.

## Fundamentals

Three papers provide contributions to evolve service design as a multidisciplinary field. They bring together multiple perspectives for the development of a body of knowledge and a shared ground that are important for service design to evolve as a field and as an enabler of service innovation

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The paper entitled ‘Service designers unite! Identifying shared concerns among multidisciplinary perspectives on service design’ (Prestes Joly, Teixeira, Patrício, & Sangiorgi, 2018), identifies shared concerns of multidisciplinary perspective on Service Design, through a qualitative study involving focus groups with six research centres in five different countries. The study shows that the service systems is the key integrative concept that crosscuts the different perspectives, and identifies shared concerns at the individual, organizational and network levels. This study contributes to build a shared ground for service design to evolve into an interdisciplinary field, and to leverage the impact of service design on service innovation.

The paper entitled “Bridging design-driven and service innovation: consonance and dissonance of meaning and value” (Korper, Holmlid, & Patrício, 2018) examines the concepts of *meaning* in interaction design and *value* in service-dominant logic, showing that these concepts share a common ground. Based on this analysis, the paper explores new ways to bridge design driven innovation, as radical changes in meaning, and service innovation, as novel reconfigurations of resources. Service designers therefore become key interpreters of meaning and facilitators of the service innovation process by generating new forms of value co-creation. This paper opens a dialogue between design driven innovation and service dominant logic to expand the role of service design as a key driver of service innovation.

The paper entitled “Perceived action potential – a strong concept in development” (Rodrigues, Blomkvist, & Holmlid, 2018) explores how *strong concepts* from interaction design, as abstracted design elements that can be appropriated and used for different instances, can bring useful insights to service design. Using the example of *touchpoint* in service design as a starting point, the paper explores how PAP – Perceived Action Potential can be developed as a useful strong concept in service design. The paper provides illustrative examples of PAP, as the subjective interpretation of an individual’s scope of action, and draws implications for service design.

## Methods

Three papers propose novel methods for research and design to enhance the ability to capture and interpret data and signs from reality.

The paper titled “Trendslation – an experiential method for semantic translation in Service Design” (Dennington, 2018) explores the potential of service designers as “cultural intermediaries” when designing for new solutions. Here, culture is mostly associated with the search for and translation of cultural and societal trends, amplifying and making explicit the already recognised ability of designers to capture signs and meanings in society, and aligning with recent studies on design-driven “meaning innovation” (Verganti, 2009). A three-stage approach is proposed with some experimental applications in a project with a fashion brand.

The paper titled “Digital Methods for Service Design. Experimenting with data-driven frameworks” (Tassi, Brilli, & Ricci, 2018) instead posits and experiments with the potential of integrating and adapting data-driven digital methods into Service Design research, expanding and not substituting the existing tools and methodologies designers are currently using. Examples of projects illustrate the process used to carefully craft data driven personas, balancing quantitative and qualitative approaches, as well as automated and more subjective and visual “designerly” approaches to data analysis.

The paper entitled “Constructing an approach to identify service design narratives: findings of an automated text analysis” (Manhaes, 2018) brings attention instead to research methods used to explore Service Design narratives, meaning how design agencies describe their own work. In this case, the narratives were in relation to the specific challenge of “organisational change” which was posed in the form of hypothetical scenarios. An automated text analysis

of their answers somehow highlighted where their discussion focuses and how this relates to the more academic conversations.

## Outcomes

Finally, three papers and two industrial cases illustrate some examples of applications and their implications for the work of designers.

The paper entitled “Resident Autonomy in Assisted Living Facilities: A Conceptual Framework for Transformative Service Research” (Ramdin, et al., 2018) discusses the concept of “autonomy” with the aim to gain some informed knowledge for better designing residential care communities for elderly people, considered as “negative services” (necessary yet undesired) within the field of transformative research. The concept of autonomy is explored from healthcare and design perspectives and then verified through qualitative research, gaining first-hand knowledge on this matter.

The paper entitled “Service Design for Artificial Intelligence” (Gasparini, Mohammed, & Oropallo, 2018) initiates a reflection on the implications of designing AI-supported services, within the specific case of an academic library. Using the typical Service Design tool of the blueprint, the authors reflect on the implications of considering AI-supported services “as a new type of stakeholder” within traditional design processes, where questions of ontology should anticipate methodological ones.

The paper entitled “Designing Convivial Food Systems in Everyday Life” (Ballantyne-Brodie, 2018) proposes a model and some practical initiatives to inform change on a systemic level, when talking about the current industrial food systems. Combining the seven levels of living systems by (Miller, 1978) – Cell, Organs, Organism, Organisation, Society, Supranational systems – and the main actions that can leverage a more “convivial” food system model - Growing, Delivery, Gastronomy, Pleasure, Storytelling, Lifecycle and Designing - the authors trace possible tangible interventions that designers can contribute to in pursuit of a transformational aim.

The industrial case “Enhancing industrial processes in the industry sector by means of Service Design” (Attoma Pepe & Livaudais, 2018) by Attoma, a European service design and UX firm headquartered in France, instead explores the potentials of introducing and motivating the application of a service design approach also in industrial settings, and when designing a global IT solution for order management. The emphasis is on the similarity of design needs when approaching industrial processes and sales management, interpreting them as services and employees as customers, while winning the interest and support of the global industrial client organisation.

The industrial case “Service Design: a new oppressive sovereign?” (Favini, 2018) by Logotel, one of the first service design agencies in Italy, discusses and exemplifies an evolution of their understanding and work on service design, running against a perceived risk of homologation of designers’ processes and results. The call is for strengthening the editorial and the original interpretative ability of designers, for valuing beauty and people with their real needs as key dimensions of service innovation and for assuring designers’ work reaches implementation (service life) and impact measurement stages.

## Reflections on the contribution of papers

This session aspired to envision and explore the evolution of service design showing its

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growing interconnection with wider fields of knowledge as well as the evident transformation of its object of study and design.

The contributions we collected provide some partial answers and open up further questions. In particular, building on these papers, we highlighted two themes: 1) multidisciplinary and useful contaminations: the value of multidisciplinary both as an interpretation and collaborative approach to service design, as well as an opportunity to “contaminate” and enrich service design with new concepts, roles and venues; 2) “service” as a perspective that brings life to technical and entrenched systems, approaches and contexts or *viceversa*, the need to bring life to services (or services to life) intended as an emerging and dynamic entity.

### Multidisciplinary and useful contaminations

Apart from (Prestes Joly, Teixeira, Patrício, & Sangiorgi, 2018), which directly investigates languages and multidisciplinary perspectives on the practice of service design, pointing toward areas of convergence or divergence for better future collaborations, other contributions are pointing toward useful avenues of both theoretical and practical “contamination” that we think can help furthering the growth of this practice. Often these “contaminations” introduce novel interpretations of the designers’ role, new conceptual and practical tools or new avenues for developing the field.

We refer here for example to the call for “strong concepts” in Service Design (Rodrigues, Blomkvist, & Holmlid, 2018), by converging reflections from interaction design and theorisations of value co-creation, with the need for “intermediate-level knowledge to support design research practice”. The concept of ‘perceived action potential’ (PAP) as an example of strong concept in service design research, refers to “the subjective interpretation of an individual’s (own) scope of action in new or unforeseen situations” which can leverage and widen the potential and usefulness of applying prototyping when envisaging new service solutions.

Of similar value is the effort by (Korper, Holmlid, & Patrício, 2018) to converge conversations on innovation from different fields (management engineering and service science), to explore new venues and modes to interpret and enhance designers’ work. The service design narrative strongly dominated by participatory and user centred perspectives, is challenged and integrated with complementary views on value (co-creation) and meaning (innovation), bringing to the fore the role of designers as “interpreters” or “facilitators” of emergent processes of meaning transformation and value co-creation. This is echoed by the more practical study on the role of designers as “cultural intermediaries” and its “trendslation” approach (Dennington, 2018).

Another interesting convergence and contamination is the one with scope and concepts from Transformative Research (Ballantyne-Brodie, 2018), a field of study within service research that aims to improve the lives of individuals, families, and communities (Anderson & Ostrom 2015). Here, interesting as an area of design and study is the concept of “negative services” (“necessary yet undesired” as residential care communities are), where the conflicts between elderly people’s need for both care and autonomy are explored. These conflictual needs and values are a significant space for research and design as they reside in many kinds of services, in particular public services, where what is conceived as public value (e.g. health, security and safety) conflicts with the individual values and needs of people (e.g. prisoners, or mental healthcare patients). Furthering important concepts and their contradictions and contextual qualities, like the one of “autonomy” for elderly people in the case of the paper, can be the avenue for relevant innovations.

### Bringing life through and to Service

Considering instead the implications of the changing nature of the objects of service design, the first dimension that emerges is the strong influence of digitalisation and the advent of new technologies that are transforming the modes and potential of service provision. The

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reflection on how this can affect the processes and methods of design and research, and how this affects the interpretation and the practical implications of transforming the object of design are both significant.

The paper exploring the use of “digital methods” in service design (Tassi, Brilli, & Ricci, 2018) expands both the skill sets and approaches necessary for designers when approaching services used by people who increasingly comment and track their experiences online. Apart from also being an approach that can expand the ability of designers to interpret wider phenomena for design reasons, what is important in this paper is the proposal of hybrid methods that aim to systematically combine quantitative and more automatic approaches to data analysis with the more qualitative and abductive ones that we are more familiar with. The ability to reinvent the processes and toolset of service designers in relation to the digital sphere, is a fundamental path that is changing the nature of service design as a field. Partly related to this discussion, is also the proposal to use automated text analysis to review service design narratives, also here combining more qualitative data with an automated process of data processing (Manhaes, 2018).

The advent of the digitalisation of processes and experiences, also affects the object of service design as in the case of AI-based services or digital industrial processes interpreted through a service lens. On one side, (Gasparini, Mohammed, & Oropallo, 2018) articulate the need to consider AI-based services as “a new type of stakeholder”, one that can have some autonomy and therefore should be evaluated in its “live” interactions with people and processes, keeping a holistic perspective. Similarly, (Attoma Pepe & Livaudais, 2018) with their project reinforce the implications that the introduction of Industrial Artificial Intelligence, Machine Learning and Automation have on industrial processes, requiring a user-experience focused approach that service design can bring.

Finally, we bring the attention to the ambition of (Ballantyne-Brodie, 2018) in suggesting modes and strategies for designers to face systemic changes in very institutionalised and resistant but un-sustainable complex service systems, such as industrial food systems. Here, the call for a holistic view of these systems is much appreciated, with its potential for a gradual substitution that builds on an emergent parallel food paradigm “slowly evolving from the grassroots”: the “convivial food service systems”. Here, designers and activists can operate at all interrelated levels of the system, interpreted as a “living system” through an ecological metaphor. This recalls the paper by (Prestes Joly, Teixeira, Patrício, & Sangiorgi, 2018) that considers the potential roles service design can play at all the levels of a service ecosystem.

This understanding of service systems as dynamic entities can be related to the practical effort of Logotel (Favini, 2018) to reflect on the implications of bringing service “to life”; the service design agency considers services as relationships that need to be nurtured and maintained and it is in the execution phase, where the relation between the brand and people come to life, that the distinguishing value of service design can actually be measured.

## Conclusions

The papers in the Evolving and Envisioning track and the two industrial cases provide rich advances of the fundamentals of service design as a multidisciplinary field; the development of new methods; and service design applications that highlight the relevance and impact of service design in different contexts.

However, these ServDes papers represent only selected contributions from a landscape of ongoing research in service design, such as special issues in the *Design Studies* and *Journal of Service Research*, new books such as Sangiorgi and Prediville (2017) and Penin (2018), or the Service Design for Innovation Network. Together. These initiatives portray a vibrant

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field, with a growing community of Service Design researchers and practitioners.

These efforts towards evolving Service Design into a more mature field do not mean it should become 'established' and stabilized. Instead, this evolution aims at fostering a fruitful dialogue among different Service Design perspectives, developing a common foundation for the different perspectives to work together and contaminate each other to obtain better fruits. This shared ground is also important to explore the roles of service designers, e.g. as interpreters and facilitators, to question the disciplines development and implications, and to leverage the role of Service Design as a key driver of service innovation.

Overall, the goal is not to reach a destination, but to strengthen the foundations for the journey of Service Design and to explore its developing streams.

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# Designing convivial food systems in everyday life

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## Abstract

This paper explores living systems theory and how it can apply to designing convivial food systems in everyday life as an alternative to the dominant, industrial food system. There are three major threads in the paper; firstly, the literature review explores the industrial food system problem and the emerging food systems design field. The second thread of the paper is the ontological foundation of living systems theory that will be outlined describing a view of life that embraces ecological design and an eco-literate worldview. The paper will outline seven levels of living systems theory and how these different levels of living systems apply to the proposed praxis of designing convivial food systems. Thirdly convivial food systems praxis will be demonstrated through various experiments and prototyping exercises conducted in Victoria, Australia. The results of the study suggest how designers adopt convivial design techniques and living systems theory into their practice through the 'convivial design culture' approach.

**KEYWORDS:** convivial food systems, living systems theory, food design praxis, relational services, service design, conviviality, eco literacy, everyday designers

## Introduction

The emerging field of food systems design is developing to address the economic, social, ecological, cultural and health implications of the industrial food system. This paper aims to provide the reader with an overview of literature focussed on food systems design and the side affects of the industrial food system. Following this, the research asks the research question: how can designers design alternative food systems that embrace social, economic, cultural, health and ecological principles that have been neglected in the industrial food system? A case is made for James G. Millers (1978) 'seven levels of living systems' as a framework for food systems designers to intervene at different scales and offer a relational approach to design ecologically sound convivial food systems. Convivial food systems are proposed as a human-scale alternative to the alienated industrial food system model.

Relational service design provides a methodological lens for this paper, as this approach not only requires agency, co-design and participation but most importantly emphasises the relational capabilities such as working together in a harmonious way in social systems (Capola, 2007) similar to that of cells and organs in biological systems (Miller, 1978). The results of this study suggest that living systems theory informs food systems design approaches. The cases evidence that everyday designers (non-professional designers) are in a good position to implement projects that fall under the convivial food system. Relational design approaches can occur on different scales within Millers (1978) seven levels living systems, whether that be within an individual, group, organisation, society or even at a policy making level. Finally, professional service designers have a role in enabling everyday designers to implement projects through their skills in prototyping, visualising and testing or even considering becoming an everyday designer in their own life.

## Food Systems Design

Zampollo (2016) suggests that food design thinking as a set of design methods and tools can be used to facilitate the development of food systems. Food systems design work to date refers to place development and understanding of territory (Meroni, 2006, Meroni, 2012). Politecnico di Milano researchers define territory as “unity of a place and the way in which the people act and exist within it as they develop a sense of belonging and ownership” (Meroni, 2014 p. 14). This place-based approach to food design connects to the agency within living systems epistemology that is needed in order to enact significant changes to food systems. Territory according to Magnaghi (2000) refers to the use of natural resources within a place in relationship to people or social capital, urban systems and the ability of a place to govern itself. A range of service and strategic designers have developed these multi-layered definitions of territory to understand ways to create local and impactful solutions in specific places (Jégou 2008; Meroni, Manzini 2010a, Meroni, Simeone & Trapani 2009). Their definition of territory is to “look at the interrelations within a community and at the relations of the community with its territory” (Meroni, 2014, p.14). Food systems design is also seen as a catalyst for addressing other service needs in communities and food communities are seen as catalysts to co-design multifunctional services that have wider benefits to these groups (Cantu, 2012). Design researchers from the DESIS Lab have worked collaboratively with farmers, communities and companies in the Lombardy region on aspects of local food systems, creating significant practice-based knowledge (Meroni, 2012; Koskinen, 2011). The most significant case study here is Meroni’s article (2014) on initiatives in agricultural land in Milan’s peri-urban zone to allow members of the public to experience local farms during holidays. Part of the wider *Nutrire Milano* (Feeding Milan) project sought to preserve and develop the array of food production around Milan by approaching it as a possible integrated system through service design thinking (Meroni, 2014). The project adopts place development and systems design approaches (Meroni, 2011, Danserro, 2004, Magnaghi, 2005). Major learnings from this project is the experimental and action focus of the project. The designers committed to the project beyond its models and drawings.

Food systems design through the lens of an activist is focused on creating radical changes to the way we produce, distribute, consume and represent food. Design activism is seen as a form of social innovation (Meroni, Fassi & Simone, 2013). Food system design activists design using ecological principles, deeply engage the community and major stakeholders. Food systems design through the lens of a researcher can be perceived to be more focused on analyzing the work of the activists and acquiring funding to do this work (Vodeb, 2017). In democratic food systems design researchers, professionals and activists need to collaborate with each other on an even playing field. These ‘cultures’ can be brought together in an extradisciplinary way to produce knowledge and actions (Vodeb, 2017: 16).



Another realm of food systems design is at a policy level. The work of (Jegou, 2015) in the co-design of public policy for the European Union in the project ‘Sustainable Food in Urban Communities’ highlights design catalysing policy changes to food systems. Food systems design and the wider question of transitioning to sustainable systems has also been tackled by other public agencies in the European union such as Transit Social Innovation (Avelino, 2016, 2017, 2017a) which was an initiative supported by the Dutch Research Institute for Transitions, Rotterdams Institute for housing and Urban Development Studies, Science Policy Research Institute at the University of Sussex among many other organisational players. Food systems design is therefore being addressed at many levels locally and at a policy level. To conclude there have been fewer discussions on the relationship between living systems theory and food systems design.

## The problem: Industrial Food System

The food system is a reflection of the current capitalist economic system, therefore the way in which food is produced, distributed, consumed and represented is highly commodified (Vodeb, 2017). Because it is something we consume on a daily basis over three times per day it is also something which is an opportunity to re-design everyday life and systems. As stated by (Ballantyne-Brodie, 2017 pending) industrial capitalist food system has many effects on people, the environment and culture such as the following six points:

- 1) Many factory workers, supermarket workers, designers and farmers in the industrial food system are exploited for cheaper wages. Supermarket workers are paid minimum wages as well as designers working in advertising agencies for food commercials.
- 2) Through controlling land and seeds, knowledge linked to food is hidden from people.
- 3) The capitalist industrial food system forces small-scale farmers out in preference for larger scale higher-level producing farms.
- 4) Factory farming is seen by some critics as the most pressing social justice issue of our times, with over 56 billion animals being slaughtered in inhumane ways every year.
- 5) There are an enormous amount of waste and dumping of food when large buyers buy cheaper imports or find other suppliers. Supermarkets throw out tonnes of waste every day because of slight deformities in fruit and vegetables.
- 6) Pesticides are destroying ecosystems and biodiversity. Methane gas from factory farming of animals has a huge impact on climate change.

## Living Systems Theory

The paper is framed on an ontological worldview of living systems theory (Maturana, 1975, Miller, 1978, Capra, 1996 – 2014). The western paradigm which understands the world through a lens of Cartesian philosophy, object as material, time as linear - living systems theory brings the worlds of science and spirituality together. Living systems theory demonstrates a paradigmatic shift away from linear and mechanistic styles of thinking to understanding, approaching, and cultivating a practice of *living with* life as a dynamic process (Capra, 2014). This ontological view is a meta-framework that allows people to see the way we live in a Western context through an eco literate lens. This new perspective allows us to have an appreciation for different ways of life and diverse perspectives that have been ignored in the past 500 years of colonisation by the West arrive ways to regenerate culture, and practice (*praxis*) in the west. There is a vast amount of theorisation on living systems theory. Both Capras (2014) and Maturanas (1975) work goes into great detail about biological systems with little discussion on how these relate to social systems. Miller (1978) however provides a clear explanation of living systems being rooted in biological systems, however also extends to social systems. His seven levels of living systems are 1) Cell 2) Organs 3) Organism (biological systems). Miller (1978) goes onto expand his theory to show

that social systems are intrinsically connected to biological system in the following levels of 4) Group 5) Organisation 6) Society and 7) Supranational systems. The connections that Miller (1978) made between biological and social systems as living systems theory provides a strong framework for relational design methodology and conviviality praxis which is proposed in this paper. While living systems theory is explanatory, it falls short of an epistemological understanding of the world that we must take action within these complex living systems. The paper wishes to articulate an epistemological theory of agency, where each person (or actant, within an ecological worldview in which other species are also valid actors) is seen as having fundamental role to play, in their everyday life. Freya Mathews (1989) in her book *Ecological Self* lays the epistemological foundations for agency within living systems that is fundamental to this thinking.

## Living Systems Theory to inform the Conviviality Praxis

The design scenario for Small, Local, Open and Connected (SLOC) food systems to emerge in Western countries challenges the centralised industrial-scale food system model (Manzini, 2013). The way in which the SLOC scenario can be achieved is a complex one, and requires a living systems understanding of the way in which people relate to one another. Ballantyne-Brodie & Telalbasic (2017) builds on Manzini's SLOC scenario and proposes Small, Open, Local and "Woven" (SLOW) to emphasise the relational design required in order to create changes at a grassroots level. Conviviality is a relational and human-scale approach to redesigning systems. Put simply, conviviality occurs when a group of people come together around a table of food to share a joyous occasion together. The word conviviality extends further than the dinner table. It derives from the Latin words *con* 'with' and *viv* 'life' meaning together with life. Thus conviviality refers to the coming together of people in a joyous and connected way, similar to that of biological systems such as cells and organs that work together to sustain life (Miller, 1978). From a living systems perspective, conviviality takes a new form because this 'joy' experienced around a table of food is extended out to the way we creatively and autonomously live, work and relate to each other in everyday life (Ballantyne-Brodie & Telalbasic 2017). Conviviality is a form of human scale praxis. Convivial actions are complex social systems and Miller's living systems theory provides a scalable framework to understand the different levels for design intervention. Conviviality praxis can be applied at different scales from the level of an individual, to a group, organisation, society and even in policy making.

## Convivial Food System

This section introduces the convivial food system. Illich (1972) who is renowned for this theorisation of conviviality, was critical of the existing form of industrial society, but was not against technology itself. Illich was concerned that professional elites monopolise the tools in our everyday life such as computers, distribution services, healthcare and food. He saw an urgent need for people to disrupt this monopoly by taking back control of their tools again. The convivial food system presents an approach to claim back our food system in a relational and way and in turn create a new community life, economy, politics, culture, spirituality and all that makes up everyday life. Andreas Webber (2015) talks how science in the 19th century disconnected biology, life and emotions. The heart and the head were disconnected in thinking, and this led to the current economy we have now which rules over social needs and ecological needs in the name of rational profit making. Convivial food systems design is a tangible way to re-engage in human relationships and engage in everyday life again as we eat several times per day (Ballantyne-Brodie & Telalbasic 2017). The convivial food system is made up of seven elements: Growing, Delivery, Gastronomy, Pleasure, Storytelling, Lifecycle and Designing (See figure 1). Each of these elements are

systemically interconnected. Convivial food system projects and designs may incorporate different aspects of these elements.

## Growing

Growing food is a fundamental way for humans to connect to nature's natural rhythms and cycles. Growing food in a convivial food system framework means that individuals or communities autonomously decide to grow their own food, develop community garden plots or grow larger amounts of food, or even connect to local farmers who grow local and seasonal produce for them. Communities and individuals growing food can be a powerful act. Wendell Berry (1992) encouraged people to participate in agriculture in an ethical way, so to become connected to the ecological systems such as fertile soils, growing flowers, fruits and vegetables from sacred seeds and seeing life decay and rejuvenate again.

## Delivery

In the context of urban life delivery takes on a unique role. Many people are separate from the land and cannot grow large amounts of their own food. A decentralised model is required for people to deliver food into the city or to different places. Communities and networks can utilise their current transportation such as cars, trains and small trucks to bring food into places for these communities. Farms must open up their distribution channels to these diverse economic opportunities in order to enable a convivial delivery solution.

## Gastronomy

Gastronomy is the art of cooking and eating good food. One major element of gastronomy is cooking. Cooking is something we do several times on a daily basis which makes it a significant part of everyday life culture. Cooking is a *'persistent practice that is repeated in time and space, rooted in the fabric of relationships to others and one's self, marked by the "family saga" and the history of each, bound to childhood memory just like rhythms and seasons'* (Giard 1998, pp. 157). As Wendell Berry wrote "eating is an agricultural act. Most eaters, however, are no longer aware that this is true" (Shiva, 2005 quotes Wendall Berry in 'Celebrating Food Economies').

## Pleasure

The founder of the Slow Food movement states that pleasure is everybody's right and as such must be as responsible as possible: gastronomy is a creative matter, not a destructive one (Petrini & Padovani, 2006). The commodification of food has taken away many simple pleasures in the food experience, however it's important to recognise the importance of this fundamental human need in relation to food.

## Storytelling

Storytelling brings new meanings to the world in which we live. Stories about new concepts and ideas can be shared through different mediums to bring light to understanding a new convivial food system. Storytelling is the personal stories that people share about their food system in the past, present and future. Storytelling is integral to maintaining rituals and traditions and a diverse food system. If we allow companies to do the storytelling for us, through advertising we are giving away our history, traditions and culture and ultimately health.

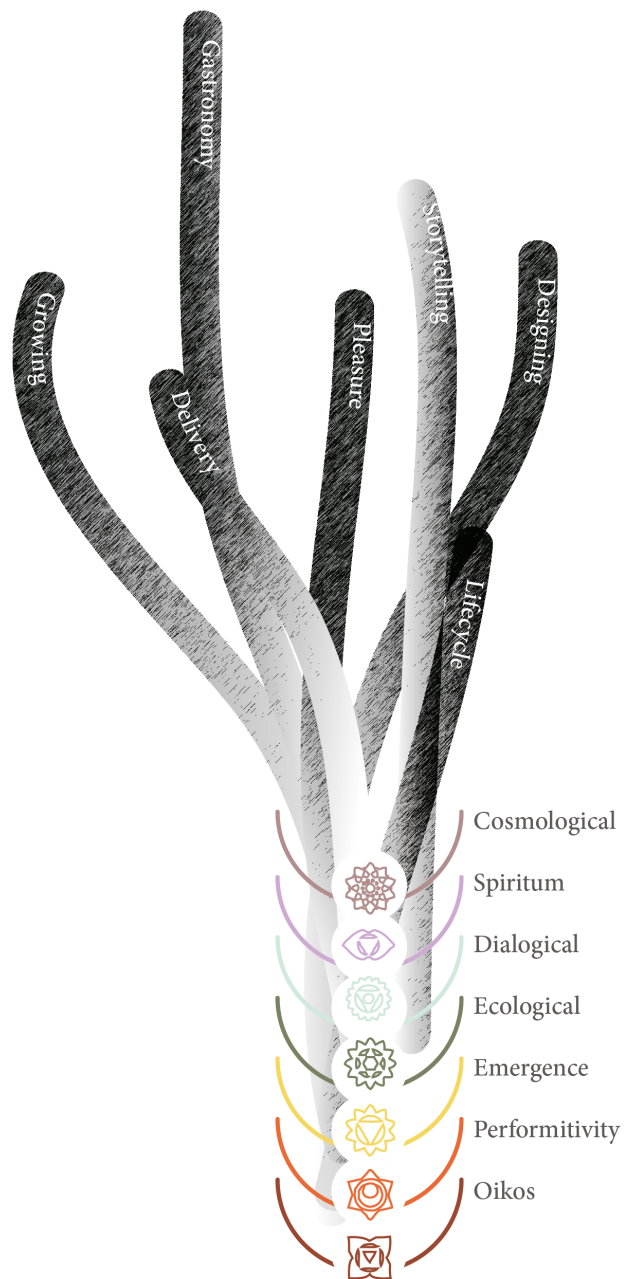
## Lifecycle

The Food and Agriculture Organisation of the United Nations states that humans waste 2.9 trillion pounds of food per year, which is enough to feed everyone on the planet more than twice (Pimentel, 1973). Stuart (2009) states that one third of the planet's food production goes to waste and if food waste were a country it would be the third largest producer of

greenhouse gas emissions in the world, after China and the United States of America. There is a disconnection between where our food comes from and this leads to a disconnection of where our food ends up (in landfill). In the convivial food system, the whole lifecycle of our food is apparent.

## Designing

An important step in transformation to the food system is to design and implement alternative models that have deep understanding and context in the diagnosis on the problems. Designing convivial food systems is about the agency that individuals and communities can take to change their food system. Designing in a convivial food system does not mean that you need to be a professional designer.



*Convivial Food System*

Figure 1 Convivial food system

## Convivial food design praxis

The experiments outlined below have been an iterative process of applying living systems theory in practice in convivial food systems design. The following section highlights some of the process, findings and learnings of these experiments. This section of the paper draws on the collective learnings from the exploration of theory and experiments to inform approaches for convivial food systems design praxis. Each experiment will connect to one or more of Miller's (1978) seven levels of living systems: cells, organ, organism, group, organisation, society and supranational systems. According to Miller (1978, p.1) his seven levels are "*a conceptual system concerned with concrete systems which exist in space-time...systems at all of these levels are open systems composed of subsystems which process inputs, throughputs and outputs of various forms of matter, energy and information*". The relational aspects of the Convivial Food System are portrayed through Miller's living systems theory. Miller's living systems theory illustrates the different scales which design interventions to food systems can take place: for example we can conceptualise the food system in a 'nested' way: Seeds (cells), health (organs), agency of individuals (organism), creating community projects i.e. Community gardens (groups), organising food activist movements and new food enterprises (organisation), changing social norms in the way we consume food (society) and policy making for in food systems (supranational).

### Experiment 1. Docklands convivial garden

Convivial food system experiment

Designers saw an opportunity to do something different in Docklands, to add a 'human scale' design dimension to the precinct. The garden was co-designed with community members and a 'living system' of convivial actions were designed to engage people in sustainable food systems (See figure 2).

The seven elements of the convivial food system are prevalent in this project. For instance: the focus on human-scale *growing* in the public garden, local *delivery* of garden produce to residents, *gastronomical* experiences in the local convivial dinners, *pleasurable* experiences were a focus of all of the design interventions, composting programs raised awareness of the *lifecycle* of the food, *storytelling* happened through local media and intimate conversations in the garden space and finally the whole garden and its related services were *design-led*.



## Figure 2 Docklands Convivial Garden

### Background

Docklands in an inner-city suburb of Melbourne which has criticised locally for developer-centric planning which has led to lack of open green spaces and cultural activities. Designers from Urban Reforestation co-designed with Melbourne's youth to implement an urban sustainability project.

### Current situation

The garden is now run by a group of local residents. Organic food is grown in the garden and is used with residents and workers in the Docklands.

### The benefits to society, environment and economy

*Society:* The community took ownership over the garden and neighbours began to share stories and connect with one another. Conversations occurred in the garden discussing growing food, healthy living and asking one another's advice about how to plant or cook certain vegetables.

*Environment:* The food box service that was created by the group enabled local residents to access local food from the garden, reducing food miles. Composting also occurred in the garden.

*Economy:* Local businesses spoke of the benefits of the garden to their business, due to the 'place amenity' the garden brought to the Docklands. People wanted to enjoy the space and site and relax which led to them spending money in local cafes.

### The experience

The garden is a place to relax, rejuvenate, learn, connect, participate and ponder.

### Design challenges

Urban Reforestation found it very challenging to work within a governance system that is not supportive of 'bottom up' design (Manzini, 2010). It was challenging to get all major stakeholders sitting around one table at the right time.

### Living systems level

This experiment falls under three levels of Miller's living systems theory. Level 4 being the 'group' that worked as a community to create the garden. Level 5 'organisation' of Urban Reforestation to negotiate the permit with local council and developers. Level 7 'supranational' the garden influenced the wider policy making by acting as a case study to inform ways food is to be grown in the city.

## Experiment 2. Delivery – Peach n Pear organic farm box

### Convivial food system experiment

Peach n Pear is a food community in urban Melbourne, Australia. Peach n Pear is a small-scale food community that encourages community members in an urban area to connect around their passion of organic, local produce. The project involves purchasing produce in bulk from local farmers, and the packing and distribution of this produce as food boxes in the community (See Figure 3).

The convivial food system elements have been all incorporated into this experiment as well. For instance, *growing* of local food in the farms in provided in the boxes, human-scale *delivery* of the food from the local neighbourhood house and verandas occurs, *gastronomical* dinners are run to celebrate the food and menu cards encourage seasonal cooking, *pleasure* is a main feature as the 'food community' and relationships are the main focus, *storytelling* occurs



through social media, local media and intimate conversations on the delivery day, *lifecycle* is encouraged through the newsletter and social media storytelling and the whole project has been *design-led*.



Figure 3 Peach n Pear Local Food Delivery Service

#### Background:

Peach n Pear was conceived on three levels: one was to provide healthy food to the designer's family and friends; the second was to translate local food systems ideas into reality and become political in everyday life and the third was to create an alternative way to access local organic food. Peach n Pear was an experiment designed to put the ideas of the convivial food systems in everyday life into practice.

#### Current situation:

The project currently distributes a fortnightly food box from the Elwood Neighbourhood House. Peach n Pear packs and distributes on average 30 boxes each fortnight with produce that is still purchased and returned from the farms for packing and distribution using the designer's personal vehicle. The project has inspired other food groups to start around Melbourne, and one in regional Victoria's 'Food bowl' the Goulburn Valley.

#### The benefits to society, environment and economy:

*Society:* people in local communities are connecting with each other to socialise and learn about their local food system.

*Environment:* Peach n Pear sources food from 100% certified organic farms, which means there are no pesticides used in the growing process. There is a lower ecological footprint on the food due to the close location of the farms to the place of delivery

*Economy:* Peach n Pear is a small home business. Local farmers are also receiving money with short, seven-day invoicing. Many local farmers like to diversify their income by working with smaller businesses as this allows them to build more economic resilience.

#### Design challenges:

Driving to the farms and packing the boxes is very intensive work. The experiment needs to move beyond the initial phase and look for ways to scale logistically or find ways for the community to contribute to the harder task of driving to the farms. The challenge for this model is to look for ways to organise the efficient delivery of food.

#### Living systems levels



This experiment refers to two of Millers living systems levels. Firstly Level 3 ‘organism’, that is the individual convivial designer who used their agency to create a new system from their own home. Secondly Level 4 ‘the Group’ being the community of people that participates in the food box service.

## Results

Everyday designers will make things happen

Throughout the research it has become apparent that the transition to sustainability requires people in everyday life to make long-term commitments in their communities to achieve changes to their food systems, local economies and communities. The commodification of everyday life (Debord, 1995) and alienation between people and their tools has led to fundamental human needs such as creation, affection, identity, participation, leisure, understanding and freedom being neglected (Max-Neef, Elizalde & Hopenhayn, 1992, Illich, 1972, Lefebvre, 1992). Convivial food systems praxis coupled understanding of living systems theory (eco and social literacy) are ways for everyday designers to ‘claim back’ everyday life. Professional designers have an important role to play in facilitating this process of change, however they must be able to adopt skills in relational services methodology and eco literacy in living systems theory. Wahl (2016 p.123) states that: *we are all designers! We all co-create the world we live in through our relationships and our behaviour as citizens, community members and consumers. We all have real and perceived needs and we all design our own strategies to meet those needs.* Transition Design (Irwin, 2015) and Transition Towns (Hopkins, 2011) are two important movements for everyday designers to engage with and participate in to claim back everyday life.

### Convivial Design Culture

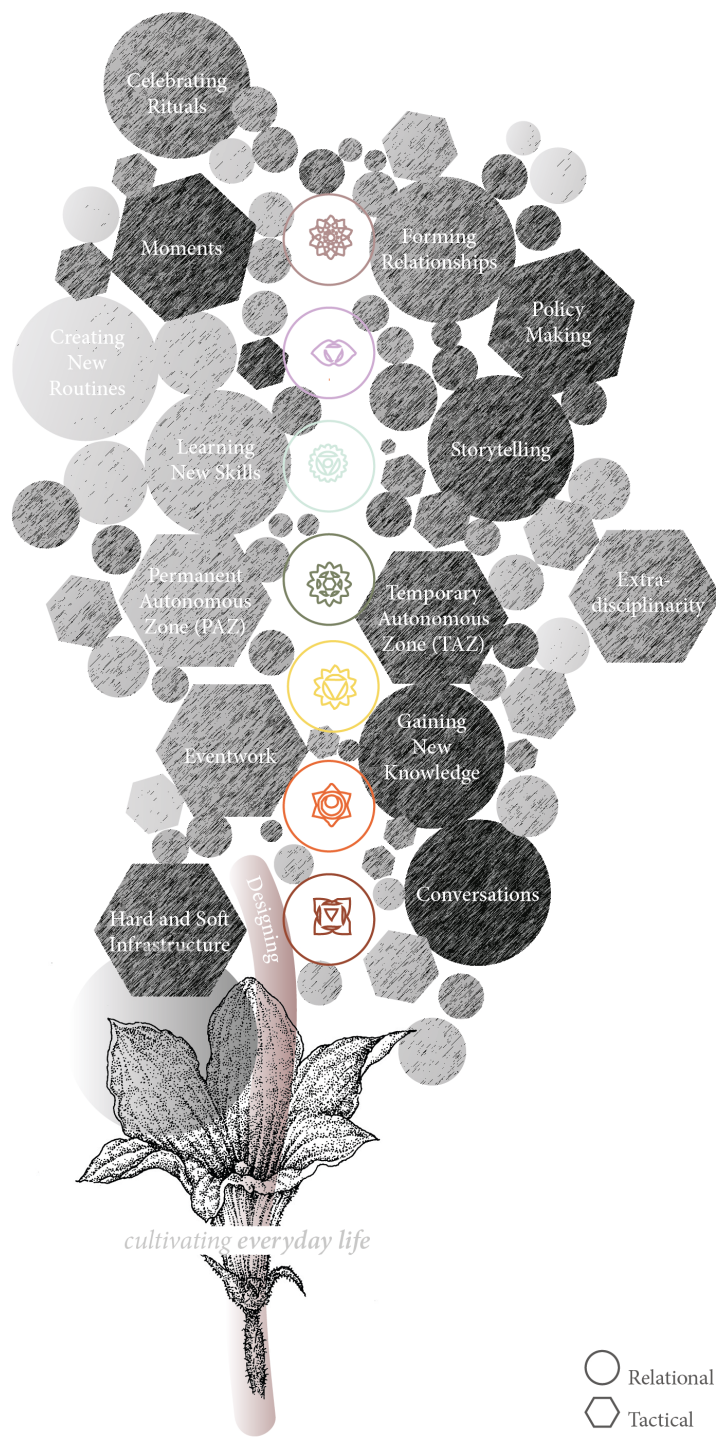
The convivial design culture concept (see figure 4) has been formed based on the theoretical foundation of living systems theory, case study analysis and an epistemological understanding agency in living systems. The outcomes of the experiments show the importance of the human interactions and relational methodology in designing convivial food systems. The convivial design culture concept is a relational and tactical strategy to implement place-based design interventions.

*Relational designing* is the conversations, routines, storytelling, co-designing policy and new skills which all ‘weave’ together a new culture and ways of operating. Relational services is a human approach to designing new systems, which requires making changes from a community level and forming deep relationships and new skills in order to make changes (Gibson-Graham, 2006). *Tactical designing* involves pushing boundaries through subversive or pleasurable events and interventions with the aim to connect the participants on a topic or skill of interest. Tactical actions can be short-term and quick in their implementation, however can lead to long term culture change and new infrastructure. Infrastructure can be both physical such as urban design, gardens, food hubs and kitchens as well as ‘soft’ such as policy making.

Everyday designers to bring about Convivial Design Culture?

Everyday designers can be radical, however, they are also working with whole systems to change them, so they are not necessarily subversive all the time. Everyday designers in essence are ‘living systems designers’ who understand the different levels of systems, and interventions to make at these particular levels. They look for ways to regenerate everyday life through events, routines, active citizenship, building new infrastructure and co-designing new policy (to name a few actions). Everyday designers do not engage in ‘left’ and ‘right’ politics, ideologies or any form of alienating, generalising or homogenous movement. Rather, they engage in relational dialogue and designing with people in their lives and design projects. Experimentation and prototyping are important design methods for everyday

designers to utilise in order to create new projects, interactions and dialogue between people (Bruce & Baxter, 2015). Through convivial interactions people can learn new ways of working together so grassroots, place based and collaborative projects can move beyond 'design visions'. Designing in everyday life is a dynamic process that acknowledges working 'with' communities to create new futures. Due to the nature of living systems, an everyday designer is responsive and tuned into the needs of the people within the system they are working in. They are constantly drawing on relational interactions, listening skills and compassion in order to ignite changes to a system. They are setting up designed situations that enable conversations and development of new skills and understandings.



Convivial Design Culture

Figure 4 Convivial Design Culture

## Discussion and Conclusions

It is apparent that the current industrial food system has many problems. The question remains how can we transition from what we currently have as our mainstream industrial food system to an alternative convivial food system? The answer to this question is not black and white. This paper does not propose for the convivial food system to overtake the industrial food system at this current time, this maybe even quite a dangerous proposition in terms of food security and feeding large populations in urban environments. At this stage, the fast consumer culture and centralised infrastructure in place the industrial food system means food systems are not resilient at a local level. The convivial food system concept challenges the dehumanising aspects of the current industrial food system and looks at relational, tactical and autonomous ways to reconnect to our food. In this sense, the convivial food system is slowly evolving from the grassroots and is creating a resilient model for long-term sustainability. Over time practices, attitudes and laws will change that support this convivial model and it can be a way of bringing about a resilient food system. Just in case of a major crisis in the industrial food supply chain the convivial food system has the potential to affect culture, policy and infrastructure to support people if there is a collapse. This alternative approach, may even influence the current industrial food system model so it begins to change some of its problematic features.

It is important to note it does not only take courage and skills to design alternative food systems, it requires working with the right actors and stakeholders within social systems. Individuals, groups and organisations cannot create systemic changes in isolated silos. A 'whole systems' approach needs to be adopted and all levels of living systems need to be addressed. For example, the supranational level which includes the public sector and international governing organisations such as the WHO, WTO and the United Nations need to be engaged in the systems change process. Institutions that are reinforcing the status quo need to be bold and look for ways to co-design their policy with different social systems levels such as individuals, communities and smaller organisations. Professional designers and everyday designers can play an important role in designing new systems with everyone from a small community garden group to an international policy for sustainable food systems. This paper has highlighted the way in which service systems and related institutions can challenge the status quo from a living systems perspective. Convivial food systems design as praxis allows for tangible interventions to be implemented in Miller's (1978) living systems levels. Future research will aim to explore the dynamic nature of designing and prototyping convivial food systems within a living systems framework, and aims to set indicators to monitor and evaluate the viability of this process.

## Acknowledgements

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# Trendslation – an experiential method for semantic translation in service design

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## Abstract

This paper explores the theme of the service designer as a cultural intermediary and presents a service design method, termed *Trendslation*, that assists in the translation of cultural phenomena into new service offerings and details. Taking a research through design approach, the method uses a *triple-staged semantic transformation* to support service designers in the design of more culturally sensitive services. The method is described and exemplified using the author's explorative design work with major Norwegian service providers within the food and fashion sectors. The method's utility is discussed, and shows that the method has relevance and can be a useful approach for service designers in utilizing cultural material as part of the design process. Further, the paper introduces the idea that cultural trends can be a source material for designing meaningful services. This supports the emerging view that service design can take a stronger cultural role in the future, that of a cultural intermediary.

**KEYWORDS:** service innovation, cultural intermediary, semantic transformation, Trendslation method

## Introduction

As the field of Service Design matures, a perspective of Service Design as a cultural intermediary is currently being explored from within the areas of service innovation and meaningful service experiences (Matthews, 2017; Dennington, 2017). Simon Clatworthy (2011) argues that "Service Design represents the application of design as a creative and culturally informed approach to services" and a research direction has been established exploring how service design could be developed in a more culturally sensitive direction (Dennington, 2017). In turn, this could contribute to the rise of more meaningful, cultural and trend sensitive services coming from service design.

To date there is some discussion in research that casts Service Design as more culturally determined, within such fields as social innovation (Mortati & Villari, 2014), social entrepreneurship (Balis, 2014), and strategic design and innovation (Meroni, 2006; Manzini, 2008). Yet, little originates from a Service Design point of view. From a cultural perspective, however, the discourse regarding the cyclical interplay between design and culture is well



developed and discussed (du Gay, 1997; Julier, 2000), as is literature regarding both design and brands as cultural influencers (Cooper & Press, 2003; Holt, 2004). As services become increasingly intertwined with our everyday lives, there is a need to more fully consider cultural approaches in Service Design. As consumer attitudes undergo a shift from owning products towards using services (Millburn & Nicodemus, 2014), the design of meaningful and desirable services could lead to competitive advantage, specifically in culturally determined areas such as fashion, in its relation to consumption, experience and brand value.

With its focus on experience through time and touch-points (Clatworthy, 2013), Service Design offers valuable tools and methods for businesses to design for enhanced customer experience. However, a cultural approach to service design transforms Service Design towards being a culturally sensitive field. This would position the Service Designer as a cultural intermediary, in which cultural meaning is transferred through the design of new services, and where the services themselves may influence culture. This calls for a new approach in Service Design to orient the field within culture, and to explore new methods to assist in the development of new culturally relevant service offerings.

The work presented in this paper is part of a larger project in which the view of Service Design as a cultural intermediary is being explored, and builds on core areas identified as central (Dennington, 2017). To outline a basis for the description of the suggested method, three main areas are described:

- Triple semantic transformation for service innovation
- Meaning-driven concept innovation
- Cultural phenomena, aesthetics and service style

## Service design as a cultural intermediary

### Triple semantic transformation for service innovation

The semantic transformation is described by Karjalainen (2004) as the process of the designer's translation of brand values into the aesthetic characteristics of products. Through this a product not only operates at a functional level, but also acquires intrinsic meaning. Throughout the design of innovative service concepts, a similar transformation process occurs (Dennington, 2017), thus a triple-staged process of meaning creation operates. The initial stage is the translation of an identified cultural phenomenon into meaning, secondly this meaning is translated into the service concept, and finally there is a translation of the meaning-driven concept into details of the service, such as touch-points and experiential evidencing (Figure 01). This could be termed a *triple semantic transformation for service innovation* (Karjalainen, 2004; Clatworthy, 2013; Dennington, 2017). This view creates a foundation for the *Trendslation* method further discussed in this paper. The triple-staged semantic translation is used as a framework for meaning-driven service innovation, one that is in line with current socio-cultural movements and a brand's core values.

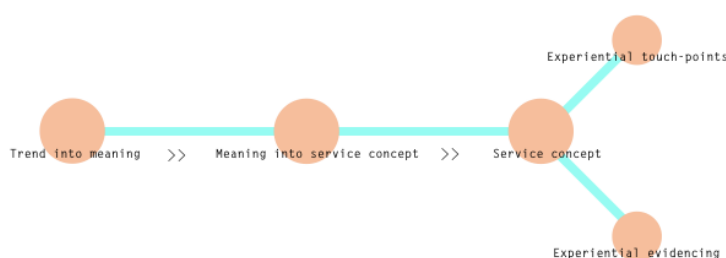


Figure 01 – Early illustration of the triple semantic transformation. Dennington, 2017.

## Meaning-driven concept innovation

Designed artifacts convey meaning through the designer's interpretation and translation of cultural influences into objects through design (Cooper & Press, 2003). Julier (2000) discusses how meaning is constructed and represented in an on-going interaction between design and culture, and writes how the iconic example of Alessi's three-legged Juicy Salif citrus squeezer has meaning embedded through its form and aesthetics, and how the experience of using the product surpasses its functionality. In this, the product moves from one of function, into one of contemplation, admiration and desire (Julier, 2000). Thus, meaning can be a driver for innovation through design (Verganti, 2009), and the term "meaning innovation" has been introduced as a design-driven view on innovation that potentially could lead to meaningful experiences through the addition of cultural, symbolic and emotional value (Verganti & Öberg, 2013). The same, it could be argued, happens when designing services, but at present Service Design does not take an active cultural role through its design (Dennington, 2017). Some work has been carried out regarding Service Design and cultural influence and meaning creation, through the bridging of service design and brand experience (da Motta-Filho, 2017), and through the marriage of sacred theory and Service Design (Matthews, 2017). However, there is as yet little research regarding the service designers use of culture and the conveyance of meaning through service offerings.

Meaning-driven concept innovation (Dennington, 2017), has been introduced to service design, and describes how a service designer acts as a cultural intermediary by translating cultural phenomena into meaning, and the further translation of this meaning into new service concepts through design. This is seen as an addition to designing new services based on customers' expressed needs or functional improvements. As this is still an emerging research area, there is a need to more systematically explore this translation process. One way forward could be the investigation of how meaning is created through the translation of cultural phenomena into style and aesthetics. In this research I do so by accessing major domains of design, namely fashion, sustainability and trends. These areas are not yet widely taken up in Service Design despite their extensive reach and dynamic character in the culture industries, particularly in relation to branding, and on the part of consumers.

## Cultural phenomena, aesthetics and service style

The meaning of style has been elaborately discussed in different design domains: in relation to product style (Vickers, 1992), fashion style (Hebdige, 1979; Crane, 2012) and brand style (Holt, 2004; Tungate, 2005). Aesthetics play an important role in conveying style, and thus in meaning creation (Postrel, 2004). In sub-cultural fashion practices, style is seen to carry significant meaning through semantic and stylistic codes that denote insider knowledge, shared beliefs and values (Hebdige, 1979; Haenfler, 2013). At present, there is little discussion of style in service, and the term could conceivably be used to denote the style of an offering, or the way in which the offering is translated into touch-points over time.

Meaning creation through brand style may be viewed as an outcome of the formally introduced semantic transformation in design (Karjalainen, 2004). Brand style refers to how the aesthetic characteristics of a product bear intrinsic meaning through the physical attributes of the design based on brand values, creating a series of recognizable products carrying the same style, such as successfully seen with e.g. Apple's product range. However, Apple also succeed in expanding their style into their service experience, where style is no longer just connected to physical and visual aesthetic attributes, but also to the marking out

of *service specific details*, such as behaviour, tone-of-voice and touch-points (Clatworthy, 2009). Could this point towards the need to define service semantics, and the way in which the intrinsic meaning of services manifests through aesthetic characteristics and service style? And how can service designers translate cultural phenomena into certain service styles? This has been explored through translating brands into experience (da Motta-Filho, 2017), although presenting a model for translating brand into service experience, this work does not reference the cultural aspects of an offering. The cultural influence is still missing.

On a consumer goods level, a successful product style is due to the designer's ability to identify and translate cultural *trends* into new products (Muir Wood et al., 2008). Trends are explained as shifting directions that impact and influence areas of society, culture or business (Martin, 2009), or as "a direction of changes in values and needs" (Dragt, 2017). In the consumer market, identifying and translating trends is an important part of designing and delivering desirable products at the right time (Pettinger, 2014). Trends, as shifting entities that may shape and influence design can be viewed as cultural phenomena, in the way they are shaped by, and may shape culture over a longer period of time. Trends can greatly influence the society and culture through which they move. Within service design, there is no discourse regarding the translation of trends into service offerings, yet service designers could be expected to be relevant trend transformers.

## Method/methodology

The research presented in this paper sits within a recent and expanding area of culturally sensitive and meaning driven service innovation, including areas of designing for brand experience (da Motta-Filho, 2017), the sacred and rituals in service design (Matthews, 2017) and service design as a cultural intermediary (Dennington, 2017). The themes are part of on-going research at the Norwegian Center for Service Innovation (csi.nhh.no), jointly funded by the Norwegian Research Council and business- and educational partners. The findings presented are extracted from the author's explorative design-driven and practice-based PhD study, where I have participated as a service designer in an overall research by design methodology (Sevaldson, 2010). This research also draws on the author's expertise and experience as a design professional, mainly within the fashion industry, providing input to the development of this research through design approach to generate new contextual and conceptual knowledge.

The initial discussion and findings presented in this paper are based upon the author's professional design work with two major Norwegian business partners: a young women's fashion brand with 200 retail stores across Norway, Sweden, Denmark, Finland and Austria, and a grocery chain with approx. 1800 grocery stores across Norway. The work also draws upon results from a six-week course for six MA-level students in Service Design engaged in the project with the girls fashion brand, and a one-day workshop with 30 BA- level students in Design, with no partner involved. The student work centered on further exploration of the triple semantic transformation for service innovation. The work was conducted at the Oslo School of Architecture and Design, and was jointly supervised by the author.

To analyze the translation processes occurring throughout the trend driven activity of designing new service concepts, mixed methods were used to gather and extract qualitative data from several sources, with the purpose of integrating the findings to synthesise further conclusions (Tashakkori & Creswell, 2007).

Research diaries were used by both the author and the six MA students to "aid reflexivity in the research process" (Nadin & Cassell, 2006), and to capture key insights and moments in reflexive feedback loops of observation, ideation and reflection. The diaries were used for visual and textual explorations through concept ideation, sketching, note taking, illustration and collages. By combining different visual techniques new insights or ideas were triggered

and further used to inform design decisions. Throughout the projects, visualizations were used to both communicate and articulate insights (Segelström, 2009).

Participatory observation was conducted by the author through meetings and workshops with the related business partners, and through tutoring students, to gain a clearer understanding of their viewed experience around challenges during the translation process in order to better inform new decisions around further data collection (Taylor, Bogdan, & DeVault, 2015).

Written material, consisting of personal field notes, correspondence with business partners, students' reflective texts, and feedback from external practitioners and business partners gave further insight into the process.

The service design projects used to discuss the *Trendslation* method are based upon the cultural phenomenon of social awareness centered on sustainability, identified through my previous design work with developing a service for fashion re-use (Dennington, 2017). The students' design work has been used to gather insight into the process, and to help develop the method. Some of the student work is also used as examples in the following section. The design projects were conducted in 2016-2017.

## Outlining the Trendslation method

At present, the integration and application of trends as a material for service innovation is not commonly used within Service Design, perhaps because there is a lack of any practical tool or method to assist in this. Yet, the notion of trends as drivers for innovation is regularly both used, and discussed in other design fields (Muir Wood et al., 2008; Pettinger, 2014). In order to further explore the possibility of adapting a trend-driven approach to a service specific view, and integrate it into existing processes as a means to assist in the triple-semantic transformation, I developed what I term the *Trendslation* process (Figure 02).

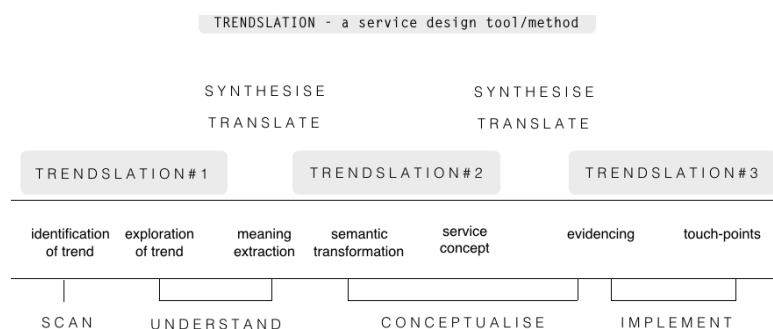


Figure 02 – First conceptual sketch of the Trendslation process. Dennington, 2017.

As a first attempt to construct a structured approach, analyzing the service designers' on-going process loops of identifying, translating and synthesizing trends through interpretation, meaning making, and the transition into service concepts through design and communication, became central. The initial approach and results are presented through reference to three acts of translation in keeping with the triple semantic transformation model; Scan & Understand, Conceptualize and Implement.

## 1. First translation: Scan & Understand - from trend to meaning

To use trends as a material for innovation, there is a need to both identify trends, and then translate these into meaning, as it is the meaning that lies beyond a trend that can be utilized as a driver for innovation (Verganti, 2009; Matthews, 2017), not the actual trend itself. To first identify trends, the active scanning and synthesizing of trends is a common approach to the early stages of the innovation process in areas of design, such as product and fashion design (Mason et al., 2015). This can be done in several ways, such as using existing trend resources, which can range from paying for costly trend reports, to using free online resources, going on inspirational travels before major projects or new seasons, and in general being open to “newness”.

As creative practitioners, service designers are open and sensitive to cultural expressions and impressions, just as designers in other fields are. However, the use of structured forecasting or trend resources is not common in Service Design, nor is it an accepted part of today’s process. In developing an approach for a Service Design context, I have tested existing approaches to scanning and synthesizing from other fields (Martin, 2009). These have been adapted and applied in a service context as a first approach to developing a starting point. These steps are described in more detail below:

### 1.1 Identify

Forecasting is a way of predicting future patterns and trends, through the way it “looks at how hidden currents in the present signal possible changes in direction” (Saffo, 2007). Different forecasting methods are used in major areas such as politics, economics and in relation to identifying societal changes (Newbold & Bos, 1990; Armstrong, 1985). Keeping within the realms of culture, the technique of Cultural Brailing, as termed by acknowledged forecaster Faith Popcorn (Martin, 2009), refers to being hypersensitive and observant of *newness*, such as new products, new genres, new styles, in addition to being open in every day life, to societal, political, technological, environmental and cultural shifts.

Els Dragt (2017) suggests scanning as the first phase of trend research to detect signs of change, which I adopted to begin the identification process in my own study. Through scanning and exploring socio-cultural expressions such as music, literature, commerce, art, social media, magazines and newspapers, food and drink, and available online trend resources (Figure 03), trends were actively “hunted”. Alongside scanning, physical items were gathered, creating a collection of photographs, pieces of graphic work (flyers, labels, packaging etc.), print- and cut-out’s and products.

In parallel with the use of scanning, the “5-Whys” technique, as suggested in *The Trend Forecaster’s Handbook* (2009), was tested as a way to dig deeper into observations made. Through sorting, ordering and clustering the visual findings, patterns emerged, and consideration of which trends were relevant in relation to the brand values led to new findings. As trend forecasting for consumer products seems to focus on the semantic characteristics and physical attributes when identifying newness, perhaps service designers additionally need to be more aware of intangible newness, such as new rhetoric, new business models or new experiences?



Figure 03 – Visual scanning and exploration of socio-cultural expressions. Dennington, 2017.

## 1.2. Explore & expand

The identified trend of social awareness was further expanded by the author as a design professional, through visual interpretations of the trend in relation to the partnering brand. This was done through the format of a mood board, by conveying the aesthetic and stylistic experience, as an orientation step for further use by other designers. The mood board, as a service design tool, is “a visual composition of pictures and materials that propose an atmosphere by giving the generic perception of it. The mood board helps in the elicitation of some values the service has that are difficult to be described by words.”

(servicedesigntools.org, 2017). By grouping similar or contrasting visual expressions, clustering by certain characteristics - colour, theme, form, style or shape - patterns emerged through forced or free association, which triggered new associative streams, and the designer could start to build a personal interpretation of the trend in relation to the brand. In this way the mood board proposed an atmosphere, but also extended into a more expressive, experientially oriented and brand relevant “experience board”. By translating the semantic qualities of the trend and brand, the visual interpretation triggered a more immediate and emotional response in the designer – and acted as the first move towards developing a certain service style (Figure 04).



Figure 04 – Exploring a stylistic and experiential expansion of the mood board to convey service style. Dennington, 2017.

### 1.3. Synthesize - Meaning making

The translation from trend to meaning was especially challenging owing to the nature of this process being highly intuitive through the designers' iterative loops of synthesizing and meaning creation. This became apparent through my own work, and was also the step most frequently identified as the most challenging by the students. Zooming in to parts of the visual interpretation, and combining these images with sketches, notes and key words, as well as discussing and describing the meaning in personal terminology, through word clouds, short descriptive texts or labeling with titles, were all useful ways of generating keywords describing the intended meaning. One example of meaning making was discovered through the framing of social awareness, where the trend of a new wave of feminism was identified in relation to the partnering young girls fashion brands values (Love, Listen, Inspire and Surprise), and led to the new meaning of "female empowerment through friendship and education." Reflecting on what the trend actually means, to whom and how, why the trend is happening, and if/how/why the trend is relevant to the brand, assisted in the meaning extraction. A more structured approach to this process could be a valuable step forward in meaning creation.

## 2. Second translation: Conceptualize - from meaning to concept

Throughout the first translation, a cognitive ideation process was initiated. With the defined meaning as a framing, more thorough ideation through sketching was used to start developing service concepts. However, the use of hand sketching only, in many cases - resulted in the concepts getting stuck at idea level, with the difficulty of moving away from the brands' existing core offering or domain, and into more innovative service concepts. Two steps were explored to assist in the move forward from ideation to conceptualization: communicative concept sketches and concept communication.

### 2.1. Communicative concept sketches

To begin with, the use of multiple design techniques such as collages, mapping, illustrations, short storyboards and simplified customer journeys, in quick sessions, helped to develop the concepts. Next, by adding a concept title, a short descriptive text in the brand's tone-of-voice, and by selecting grouping of images that conveyed the intended experience and communicated key offering, led to the formation of "concept-sketches" (Figure 05) that had such precise communicative features that these could serve as starting points for discussion to extend the concept even further. Developing mock-ups and simple prototypes of certain touch-points made the concepts more tangible, making discussion easier, with the result that feedback led to concepts being pushed in more innovative directions.

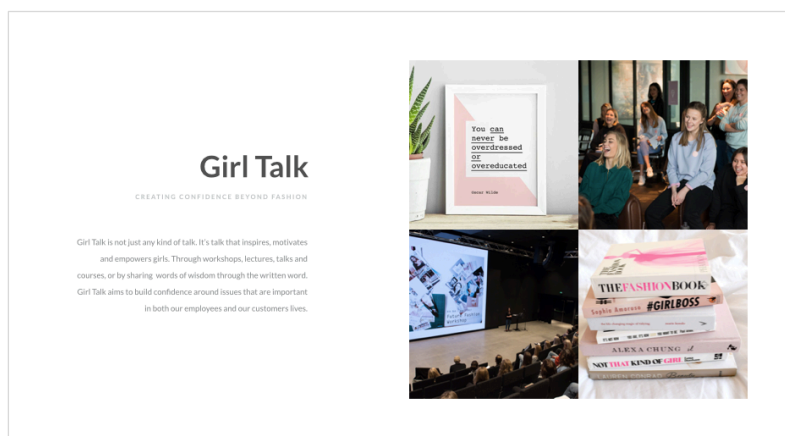




Figure 05 – Concept sketch with title, tone-of-voice and curated images for precise concept communication. Dennington, 2017.

## 2.2. Concept communication

As the concepts became more developed, communicating the core offering and experience in a precise, clear and engaging way made the concepts accessible for outside actors. When presenting the final concepts to the business partners, they were able to quickly understand the concept and how it related to their brand. Conveying the key features of the concept in a style that was attuned to their brand image, through choice of images, concept name and tone-of-voice, triggered immediate emotional response. This also functioned as a starting point for conversations and discussion around concepts that were far from partners' core offerings, yet still in line with their brand.

In one case the precise level of concept communication led to one of the partnering brand's VP of Marketing, Purchase & Assortment commenting that several of the students' concepts could almost directly be implemented into their current strategy, while selected service concepts designed by the author are in the process of being further developed by the partnering brand. One example was the student-designed concept of a summer camp (Figure 06), with education and friendship in focus, which successfully conveyed both the trend and brand values. Although the concept moved far beyond the young womens' fashion brand's core offering of selling clothing, it was still perceived by the partnering brand to be highly relevant as a new culturally located service offering.



Figure 06 – Concept communication for summer camp concept through mock-up flyer, mood board and simplified journey. Miryam Pippich, MA-student, 2017.

## 3. Third translation: Implement - from concept to experiential details

Experiential touch-points to enhance the meaning were designed and prototyped to strengthen the concept. One example was the prototype of a poster for a workshop at the summer camp, designed by a student. In addition to the graphic elements and tone-of-voice being in line with the trend and brand, the content of the workshop also enhanced the meaning. This was achieved through the theme of the workshop, carefully curated workshop facilitators, the venue of the workshop and down to details, such as what kind of lunch the participants would be served (Figure 07). All these parts added up to create the meaningful experience intended. Due to lack of time, the potential of designing experiential touch-points, or other experiential details was not fully looked into. For further inquiry, this step could be introduced earlier in the innovation process, and also be further explored in relation to how the design of such experiential details can shape and model the service experience.



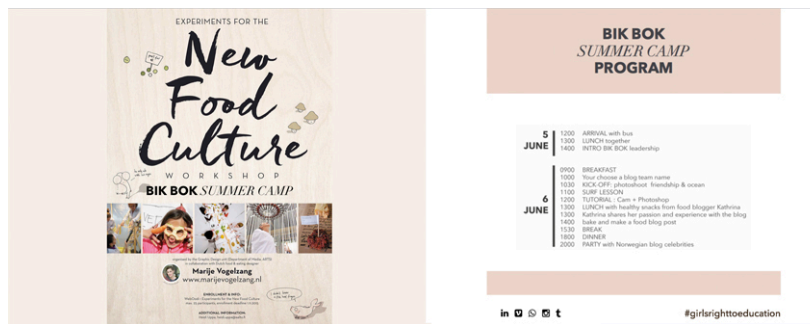


Figure 07 – Experiential evidencing of program for summer camp concept. Miryam Pippich, MA-student, 2017.

## To Trendsplate or not to Trendsplate

Through these first attempts at operationalizing the *Trendslation* method, three overarching findings arose. They support the claim for a richer, more elaborated cultural perspective on framing, enacting and analyzing trends and Service Design, and are discussed below.

An overall finding is that the method of *Trendslation* shows promise for assisting service designers in the semantic translation process from trend to meaning, and from meaning to service concept and details, in the early innovation phase. However, the method may show most potential for the design of highly experiential and meaningful consumer specific services (e.g. within retail and travel), where the user is more prone to act affectively. In other less culturally located areas of Service Design, e.g. within public healthcare, the method may seem to be redundant or to offer little assistance. For some services, it may be that only certain parts of the service are affected by cultural influence, and could benefit from using the method. Still, the use of the method for designing service concepts in a highly visual, stylistic and communicative way as triggers for conversations or to enact change within an organization could be more widely used within several areas of Service Design.

A second finding is that service design may benefit from a cultural orientation, in the way this opens for the design of more meaningful service concepts in line with current cultural conversations, through the service designer's ability to translate cultural trends into meaning and further into service concepts and experiential details. This supports my initial notion of the service designer acting as a cultural intermediary, through designing new services influenced by culture, but also having influence upon culture.

The final finding is that cultural phenomena can be used to shape and model service concepts in the innovation phase, and to design experiential service details, through the extraction and translation of meaning. These three findings, it could be argued, might allow service designers to design more culturally informed and culturally inflected services.

## Discussion: Service Design and the service designer as cultural intermediaries

In the light of Service Design as a culturally sensitive domain, there lies potential in regarding cultural, and thereby meaningful material as an influential factor in shaping and modeling service concepts in the innovation phase, through a semantic transformation process. The following reflections upon the approach and its implications are discussed below.

In the process of the triple semantic transformation, it became evident that the service designer, when designing new services based on meaning, translated from trends – also acts as a cultural intermediary; as an individual transferring meaning (Venkatesh & Meamber, 2006), and by this, acting as a taste maker (Maguire & Matthews, 2014). The view of the service designer as a cultural intermediary could initiate further reflection around what this might mean for practitioners, and the influence they may have upon contemporary culture, through the services they design.

In this view of the service designer as a cultural intermediary, and a designer of meaning-driven concepts, there is a need for a more experiential and expressive method for conveying the semantic qualities of the trend in relation to the brand through the designer's own interpretation, so as to assist in the identification and meaning creation. This is due to a key ability of the designer in gaining a clear cognitive interpretation of the cultural phenomenon, in relation to the brand values, as this understanding forms the basis for meaning creation.

In acting as a cultural intermediary, the service designer's ability to synthesize and create meaning from identified trends in relation to brand values is due to the service designer gaining a clear understanding of this trend through their own interpretation. Existing service design tools, such as the mood board, may be expanded in a more stylistic and experiential direction to assist in this step.

Aesthetics and style also play an important role in meaning creation (Postrel, 2003), and through the *Trendslation* process highly visual, experiential and stylistic interpretations resulted in stronger, more innovative and more elaborate service concepts, that both communicate the extracted meaning, and the partnering brands values. Expanding the format of a visual tool, such as the mood board, into a more stylistic and experiential visual representation, could build on what Ted Matthews (2016) introduces as Graphic experiential evidencing, as a method for “expressive communication of meaningful service encounters.” If developed further, a more stylistic approach to experiential evidencing, communicating meaningful service concepts in relation to trends and brand values, could contribute to the service designers' toolbox in the innovation phase of designing meaningful service concepts.

In the view of Service Design as a cultural intermediary, there is interesting potential that lies in viewing cultural trends as a service design material, throughout the innovation phase. When designing products, materials can be modeled to convey different semantic characteristics in the object, and thus convey different meanings. In Service Design, however, “the object to be modeled is the whole system and its individual parts”(Clatworthy, 2011). In the concept development phase, it became a challenge to distinguish the translation of trends into the whole system (e.g. customer journey), or into its individual parts (e.g. touch-points), which suggests the need for a more systematic tool for service designers to use in the application of trend as a material, primarily to shape service concepts, but also to assist in translation into the service details.

Current approaches for translation into products does not take into account this need for translation into both the whole and into certain parts, and calls for a *service specific* tool. This could be achieved by exploring how the service concept can be modeled according to where, when and how the semantic translation occurs throughout the service experience.

An additional reflection is that in viewing Service Design and the service designer as cultural intermediaries there is a need to explore, identify and define the semantics of services. Due to the intangible nature of services, service semantics may be related to codes and symbols, signals and attitudes, interactions or transactions, amongst many other possibilities. How can we identify service semantics? And through this, how can we define the aesthetic qualities of services? Expanding this knowledge base could help in the development of the area of Service Design as a cultural intermediary.

## Some conclusions

The aim of this paper has been to initiate the development of a systemized method for the semantic translation of cultural trends into service concepts, and into experiential service details. This is currently missing as a part of service design practice, yet is widely used in the innovation phase of other design fields. An explorative design approach was adopted to investigate how such translation of trends may be adopted to Service Design through the development of a process termed *Trendslation*. The *Trendslation* process was devised through service design projects with established Norwegian service providers within fashion and food sectors. The findings show that *Trendslation* has promise and could be a useful contribution to service design methods. Furthermore, it helps Service Design enact its semantic turn towards the service designer also acting as a cultural intermediary.

For service design practitioners, investing time in an early project phase to hunt, explore and expand trends could be a way forward to initiate the uptake of cultural influence. Here trend forecasting may be taken up as a resource. For service design practitioners in companies with internal trend forecasting units, some steps of the *Trendslation* may be redundant; nevertheless, the process could help the service designer in the translation of the identified trends into meaning, and further into service concepts and details. In Service Design education, simple trend forecasting techniques could be introduced to encourage and stimulate the cultural approach to service design.

Further research is needed to develop a more systematic method or tool for the translation and application of trends into service details, such as experiential touch-points and experiential details. This could include the investigation of how different trends may shape service concepts, according to where, when and how trends are applied along a customer journey. The components and structure of the suggested stylistic experiential evidencing tool needs further research with the aim of developing it as a contribution to the service designers' toolbox.

In my on-going research, I will work with new international business partners to further develop and test the method. A number of particular directions, arising out of the research reported here, will be explored. Possible new research areas could explore the translation of trends into service details, how the service concept changes in relation to how, where and which trends are applied, in what way stylistic experiential evidencing could be developed as a tool for practitioners and how service style can be conveyed and communicated in an early innovation phase.

The *Trendslation* method provides an initial framework through which service designers can consider the influence of cultural trends as drivers for innovation, in coherence with brand values. However, the view of Service Design and the service designer as cultural intermediaries implies the need to further discuss the possibilities, implications and new roles of Service Design in a fuller cultural view and framing. In what ways might new methods, such as the suggested *Trendslation* model, provide new cultural roles to the service designer in shaping and impacting culture through the translation process and meaning making, and through this the design of new services? The *Trendslation* method offers one early, flexible and dynamic model of the uptake of cultural practices, expertise and insights into the on-going semantic translation of service design into meaningful experiences.

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# Service design for artificial intelligence

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## Abstract

In this paper, we present the first findings of a project testing Artificial Intelligence (AI) in an academic library with the aim to support and redefine library services. The context of the research project is an academic library. Libraries represent an ideal environment for containing potential bias and test prototypes. Several AI supported services are prototyped and tested during a research project. The paper features approaches such as user journey and blueprint to address issues service providers and service users might encounter. The paper identifies a series of factors that need to be taken into account when designing prototypes in which AI features centrally. The paper also charts the implications of AI-enhanced library services in relation to users's behaviour and expectations and organizations' workflow.

**KEYWORDS:** service design, artificial intelligence, service blueprint

## Introduction

The discourse on artificial Intelligence (AI) is constantly expanding in scope and depth. For the intents and purposes of this paper, we will operatively subscribe to Nils J. Nilsson's definition: "Artificial intelligence is that activity devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment" (Nilsson, 2010: 13). The objective of most of the research in progress that aims at mimicking human intelligence is to adapt and improve machine learning using formal logic and mathematics. Advances in machine learning and Natural Language Processing (NLP) are among the main drivers behind AI, and have represented well-frequented research fields for many decades. Eventually, the technology that informed AI crucially gained momentum toward innovative solutions thanks to access to big data and cloud based processing capability. In addition, the willingness by some of the major stakeholders in the field, like Google, to share technologies needed to support AI, has been central to achieve the level of activity we now observe both in research and service provision. Google has a strong milieu in AI and machine learning, supporting especially end-to-end learned systems (Google, 2017). Other major companies also built large AI platforms, and offered usable solutions to the market even though the costs to access them may often seem dissuasive. IBM developed Bluemix (IBM-Bluemix, 2017), a platform for AI services, including Watson (IBM Watson, 2017), which has gained a reputation for being able to help doctors find the correct procedure and treatment for cancer patients. Watson, when asked,

can analyze enormous amounts of research papers, documentation, and other relevant medical research data. In this context, several concerns need be mentioned. On the one hand, there are several issues concerning how AI is developed without any form of regulation, which may have unforeseen effects on social, ethical and political arenas (Sampel, 2017). On the other hand, the majority of currently available AI services are quite simple, like chatbots—chat-based customer service tools for large companies that answer common or recurrent questions posed by users. Other small services are entering the market as well, like Watty (Watty, 2017), which monitors the power line at users' homes to analyze patterns of power consumption, and break down consumption by device and time of the day.

There is also a lack of research on the impact AI-based services may have both upon users and the organizations providing the service, as very few fully implemented services have been developed so far. Another factor reinforcing the effect of AI in a service context is the ability AI technology has to learn from the work done when performing a service. Taking into account societal and individual needs and behaviors, an AI-based service may have a major impact in how the service is perceived by the users and on several levels in the organization or company providing the service. For instance, trustworthiness and reliability may be emotions emerging when users interact with an AI-based service. For a company or organization, the self-learning capabilities that characterize AI may force strategical changes, cooperation issues, and so on. All the above are still assumptions as this type of services are still in their initial stages.

Atomization of technology in the form of ubiquitous computing creates sub-spaces for interaction between organizations and users in which exchange of can take place intuitively and in a progressive fashion. This fragmentation of action and interaction does not only concern the trading of goods and services, but also the domains of knowledge production and knowledge mediation. Alexandra Schneider argued that the smartphone can be considered as an “object of knowledge” for it physically represents a probe into archival materials (Schneider, 2012). The methods and capabilities in-scribed into devices and their code involve sets of constraints and affordances that redesign actions that would otherwise be required of the user to access and process the raw material of the library resources. At present, the outcomes of this process is typically determined through impersonation. Users of technology and their forays into the services are imagined as a priori projections. A more daring implementation of AI could amount to a fostering a mode of dialogue between the user and the technology in which digital assistance is designed to adapt and work back end to anticipate and fill the gaps in the users' skills and knowledge. In other words, AI would also stand for “archival intelligence,” i.e. it would inhabit the complex, pre-existing “knowledge of archival theory, practices, and procedures.” Most importantly, this implementation of AI would seamlessly aim at providing “strategies for reducing uncertainty and ambiguity when unstructured problems” result in ill-defined solutions (Yakel & Torres, 2003: 51).

In the context of a library, AI implementations may support, but also and perhaps most interestingly re-articulate several of the current services this kind of institutions offer to their users. The 2015 Horizon report predicted that the use of AI will be relevant within few years (“NMC Horizon Report Library Edition,” 2015). Libraries have already amassed data that can be exploited in new ways using AI. This includes examples such as metadata (Linked-Data) from collections, large silos containing research data or publications. AI can also help the library anticipate future user needs. For example, AI can be able to help in a faster and more targeted manner the creation of services tailored to those who have special needs (universal design). Users with dyslexia or other disabilities could have a library service designed on the fly, but based on their particular needs. Introducing AI-based services in a library creates new issues as well as perspectives. It also involves a reframing of goals such as security and credibility through delivery of quality assured information. On the personal level, changes in the emotional landscape of the interaction between service provider and service consumer also need to be taken into account (Beck & Libert, 2017). Those are values the library as an institution rests upon, and how AI will affect those is still unclear.



This paper and the research on which it is based represent a foray into this uncharted space. It examines of different service design methods, conceived in a site-specific fashion to look into services that can be delivered when AI is prototyped and tested in the context of a Norwegian academic library. In the first part of the paper we present our project and its goals at large. In the second part, we describe the results of two workshops through which the project was implemented. The outcome of the workshops consisted in a variety of different prototypes. Finally, one of these prototypes is analyzed using the service blueprint method. This eventually informs a discussion in which the overall aims of the project are reassessed and scope for further work is envisaged.

## The research project

Encouraged by the increasingly subtleness and stability of latest-generation applications using AI, the Library of the University of Oslo (UiO) resolved to apply for funding from the National Library of Norway to develop its own AI-based services. In comparison with other similar institutions, the overall size and character of the user base of the UiO Library allows this institution an agile stance in relation to technological change. In addition, the general context of the academic library also provides a favourable environment for testing new services. Libraries have access to large amount of data in databases that have traditionally grown in an organic manner thanks to the implementation of consistent metadata. Access to large amounts of data is a crucial precondition to educate AI systems within relevant problem areas.

The acknowledgement of a gradual decrease of usage that libraries have experienced over the last decade further provided momentum to embark on a similar research project for this specific academic library. Decreased demand in borrowed books and slow reaction times in adapting to new formats and consumption modes caused some libraries to be outdistanced from more readily accessible service providers. Moreover, as access to digitally based knowledge increases, the need to re-design the interaction between libraries and users also became a relevant objective. Today's library patrons are demanding more user-friendly services and services that are related to their research fields. The relevant amount of digital data upon which the library can rely provided an opportunity to design a project and reach useful conclusions within a foreseeable time span. The digitalization of many collections and the creation of consistent metadata for these collections were pre-existing resources that could readily be tapped upon. Making use of those large amounts of data is a golden opportunity for AI-based services in the library.

The project framework is explorative, in the sense that the goal is to test, study and gain experience in the field of AI in the context of a library setting. In addition, the emerging trend of using AI in various domains needed a prompt reaction by the library, as new concurring services will probably be developed in the near future. The objectives of the project include building up the knowledge of the different technologies needed to create an AI platform; suggesting AI-based services in a library; and finally designing and testing prototypes of these AI-services. We opted for using a service design approach in order to understand the manifold implications of AI being used in an organization involving several groups of heterogeneous human and nonhuman actors.

A series of service design workshops have been planned involving library staff and researchers acting as both facilitators and observers. In addition, small seminars were organized during the first part of the project to gather feedback and mediate the results of the work in progress to the rest of the organization. The second phase of the research project started after the development of the user journey. The library is now developing AI-based services with the help of a data scientist, who was coopted into the core research group. Three new services are currently underway. The first is a service helping researchers in papyrology that is already functioning as beta version and yielding fruitful results. Using

large amount of data from databases to educate the algorithm, the output of this new AI-based service will give to researchers predictions about values concerning papyrus items. The second service has the goal of read, analyze, and understand English literature corpuses, e.g. texts by the modernist author Virginia Woolf. This is also currently working as early beta version. Finally, the third service features a differently focus, for its goal is to solve automation problems in the context of self-archiving services that the library aims to provide to researchers.

## The workshops

The two workshops to which this section is dedicated were arranged in one of the branches of the University of Oslo library. Their goals were to develop prototypes of services using AI and chart the practical ramifications of using AI for such new services. The format of the first workshop was based on a well-established methodology one of the authors has developed to support innovation when designing services for academic libraries (Culén & Gasparini, 2014). The set-up in this occasion involved three groups of participants with different competences in a half day long effort using service design methods like customer journey. The workshop provided an opportunity for several prototypes of services implementing AI to emerge. Among them, two were developed upon.

The first concept, using the aforementioned Watson, was planned as a standalone AI service in the library. It was named “James,” and imagined to be a humanoid or something simpler, such as an iPad. James was projected to welcome the user at the entrance of the library and offer a variety of services (Fig. 1 shows a picture of James made by a participant with drawing skills). James will have the capability to use face-recognition to find out information about users and help them accordingly. For instance, James would pull up information about courses, preferences or special needs and re-configure the type and level of assistance it provides on user by user basis. One of the authors also entrusted James with the ability to analyze a curriculum text and allow students to ask questions across the content.

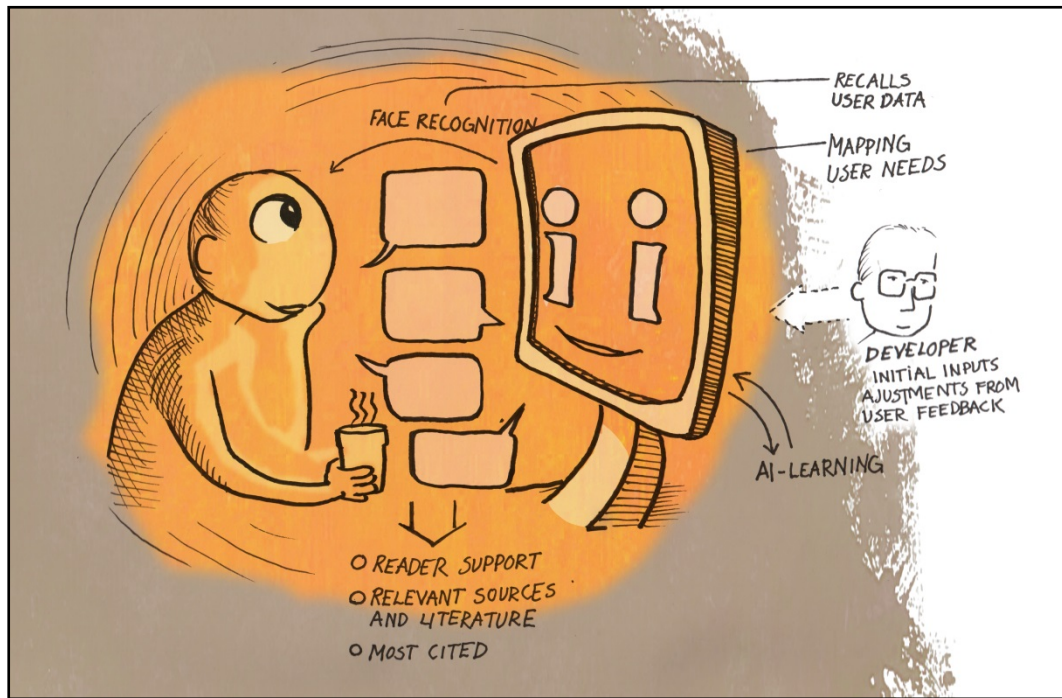


Fig. 1. Part of the user journey developed during the workshop. James has the ability to use face-recognition to retrieve information about the user and help them accordingly (Drawing by Ane Hem).

Watson already has the capability to perform this type of analysis, but the innovation in James's case is to design a potential for this service in the context of education. Allowing students approach knowledge based on their own situation could change the way higher education will work in the future. Another item that emerged through the workshop was the request for a type of service that supports researchers during their work. This also directly relates to the European Commission's aim and policy to keep research data accessible for future use. Accordingly, increasing amounts of data are now available to be fed into AI-services like Watson. The new projected service was imagined in the form of a research-buddy that could help researchers navigate and negotiate available data from previous research projects. Libraries are often in charge of storing and organizing research data and their most specialized expertise is knowledge management. The workshop clearly highlighted the need for a service that mines stored research data and allows researcher to cut the time needed to search, scan, and process previous research outcomes. This would allow researchers to redirect their scarce resources toward research activities where AI cannot (yet) provide assistance. An interesting side discussion involved a reflection on how copyright and intellectual property would be preserved through the use of AI. Such a discussion is outside the immediate scope of the present paper, but we acknowledge further work is required to define the implications of respecting copyright and intellectual property when nonhuman actors are involved. This initial phase of the first workshop was followed by a second one that implement a service blueprint approach to accurately test the service provided by James and map out the potential impact on for the organization providing the service and its users.

The second workshop had a different character. It was shorter, at a half day long, and more intensive. The activities during this workshop aimed to enrich the user journey developed in the first one. The participants were not the same and were chosen according to their competences. One of the effects of this reframing was the addition of new perspectives and issues, allowing for a redefinition of some of the touchpoints. Eventually, the visualized user journey functioned as an elaborative force to provide to the participants an additional opportunity to voice and refine the touchpoints.

## Service blueprint for AI-based services

The authors found service blueprint to be a viable way to analyze services developed during the workshop and to map out the impact of using AI in the library. Tax and Stuart (1997) argue for using service blueprint as it supports a holistic view of service provision. The necessity to have a bird's eye view on services is implied by the “evolutionary nature of service design.” A continuous monitoring of the effects new changes allows exchange and mutual interaction among the three main “dimension” of design i.e. processes, participants, and context (Tax and Stuart, 1997).

When the AI-supported library service named “James” was mapped out in a service blueprint (Fig. 2), several issues did emerge as valuable points of discussion. Each point, presented below, can be seen as a touchpoint in a user journey (Polaine, Løvlie, & Reason, 2013).



**Fig. 2. A first draft of the service blueprint for the AI service James (Photo: Gasparini)**

Each touchpoint describes possible effects on the organization, including librarians or management, and effects for users of the library, such as students or researchers. The user journey reproduces the scenario of a student or a patron coming to a physical library to get help with navigating relevant literature. As the user enters the building, James is ready to assist.

1. When the user approaches James for the first time, an agreement of data exchange must be concluded. The use of the service will probably require James to maintain user data from the visit. This data might include: library needs, behavior in the physical space, and search strategies developed together during the visit. Possible also disabilities or other special needs would have to be stored. This is necessary to support James's learning process. There are several implications for the user and they may have unpredicted effects. For instance, repetitive requests of user info, and lack of clarity about how the data will be used later on may prevent future use or bias James's development (for instance if only one group of users interact with James). For a service provider (in this case the library) routines must be

designed to clarify how the data is used by James, and where it is stored.

2. James needs to be updated continually to be aware of all the major changes in the way the library functions. In addition, it may monitor other minor changes it finds relevant for its own needs.

3. James uploads programme curricula based on the user's identity, after their face is scanned. This includes the courses the student is attending. Concurrently, it primes itself for possible questions. In parallel, it informs the user that it is available to provide a series of services. For the library this requires a check to determine if the access purchased by the library allows this kind of use. Access to e-resources in the context of the academic library is strictly regulated. In addition, if part of curricula and syllabi is not available as electronic resources, James will have to predict and fill the gaps to provide useful answers. The user may otherwise receive a biased result.

4. James may also try to persuade the student to participate in general library literacy courses or other training events on the correct referencing conventions when writing essays and dissertations. This is part of any university library's mission but students are often unaware of this package of services because it requires pre-emptive action on their part, rather than problem-based support.

5. The technology behind AI support learns when working with users and might adapt to accommodate the users' recurrent requests. After some discussion between James and the student, James may propose to take a look at the student's essay when they have completed writing the first draft. For the library, this is a borderline ethical case. James's helping the student could be interpreted as cheating, and several services already available today outside the institutional sphere inhabit this grey area. Bringing all the services together to let a self-learning system make this kind of decisions may form a problem. For the student, the service they have access to is open-ended. Possible issues might include damage to their self-esteem; falling short of the learning targets; or even enabling less scrupulous users by providing them with short cuts.

6. In addition, students will probably have questions about the intellectual property of their own academic work. For instance, if James helps a student in different ways and occasions, how much of the communication stored during the interaction between them will be used by James again in another context? Perhaps the research the student has done in a master dissertation might become obsolete before the student manages to publish it. For the library, as an organization, this situation raises questions about responsibility. Who will be in charge for educating James so it will behave correctly? In the case of disputes about re-use of knowledge and academic misconduct, will the library be held accountable? All of those questions require substantial rethinking in the way the library work and the skillset required of its staff in day to day work practice.

7. Finally, the journey in the library can start, either in the physical space of the collections to find literature, or through student and problem-centred coaching and training.

## Conclusions

The paper presented a project aiming of introducing AI-based services in the context of a university library. The overarching aims of the project included testing ways to use AI to update the portfolio of services provided and anticipate the wider ramifications of this. Service blueprint was used in the course of the project to recognize several tension points between AI-based services, users and the library. The implications that require further reflection include those informed by AI's self-learning abilities. These are complex and their negotiation is not obvious for it requires continuous problem-based and user-centred



approaches.

AI-based services already form part of everyday life, and advance in both research and service development is fast. The project presented in this paper and the workshop however demonstrated the need to rethink how services can be designed when a self-learning system is part of the process. When AI is put in the position to learn from the complex of activities that take place in the context of a university library, service providers should take a series of preliminary measures during the planning and designing phases of a new, innovative service. Using the framework envisaged by Bitner (1992), the librarian could be understood as taking up a role as enabler of the AI-based service. Further to that, a possible analysis of the service blueprint involves thinking of the AI-supported service as a new type of stakeholder, i.e. a service provider on its own acting to some extent independently from the library's immediate control.

One could assume AI-supported services are comparable to regular tested-and-proven IT-based services, but paper argues this is not the case. To begin with, an important aspect to take into account is that AI self-learns and library has to reflect on the extent to which as an institution it is willing to assume its responsibilities for the behaviour of an AI service. To help understand all the implication for the stakeholders, during the workshops we have used the service blueprint to move from a holistic view of the service ramifications to an in-depth analysis of the touchpoints (Fig. 3). Ensuring that the user can trust the results of an interaction with an AI-based service is an absolute requirement. Undesired effects like misleading or possible disinformation have to be avoided.

The new service on which our research team worked to help researchers in papyrology, which we mentioned above is in beta version, and some of the issues we listed have proved of paramount importance to accommodate the user perspective during the different phases of the project development. The sixth point, which refers to intellectual property, proved particularly central thanks to the reflection it conveys to further shape the service. Should the service be available for all? How can one monitor effects of an AI-based service? What are the long-term effects of an epistemology shaped by the contribution of an AI-based service? How can one respect the unique researcher identity of a scholar going about their work?



Fig. 3. Excerpt from the visual user journey, showing opportunities for interaction between James and a user (Drawing: University of Oslo Library).

What kind of service design tool do we need to develop services when AI is an important stakeholder? Questions of ontology are antecedent to methodological choices and cannot be

flattened by uniform technology. From this point of view, mapping the user journey helped the project to identify a set of crucial questions and decision nodes.

Service blueprint was also an important tool to chart the effect of service provision on the network of interrelations linking the users with the organization. Designing a service in which AI systems are used requires anticipating and defining the different facets of the service provision on the basis of ontological decisions and understanding of the temporal effects of the design effort. The envisaged user journey was used as a mediator between the user perspective described in the visualizations and the logistics of using AI in the chosen institution. There is a specific tension between user perspective and the internal and organizational needs an AI-based service can solve. One of the services under development addresses a back-office automation problem, and the user journey was used to keep the user perspective represented. Future work should focus on further understanding the intersection between service design and AI, especially on the impact of the service has over a number of time scales, and how feedback can be consistently channeled to inform the design process.

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# Constructing an approach to identify service design narratives: The findings of an automated text analysis

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## Abstract

Over the last two decades, service design has steadily attracted adopters from both practitioner and academic realms. The diverse origins of these adopters pose challenges for the further advancement of the discipline. To address one of those challenges, this text investigates the use of an automated text analysis technique to explore the possibility to identify discursive elements of service design practitioners' narrative to address organizational change. The author presents results of an automated text analysis of textual responses to a survey that reveal the main topics associated with 9 service design practitioners' approaches to 5 different scenarios. These findings identify three basins of meaning in the discursive construction of the survey respondents: STORIES, TEAM, and IMPLEMENTING. It also shed light on a possible framework for apprehending the social reality of service design practices through discursive elements.

**KEYWORDS:** service design, discourse, research, automated text analysis

## Introduction

Over the last two decades, service design has steadily attracted adopters from both practitioner and academic realms. Even though evidences demonstrate a significant progression of the academic and practitioner communities of service design (Manhães, Oertzen, Mager, & Tanghe, 2016), many challenges remain and restrict a further advancement of the discipline. The diverse origins of these adopters present opportunities and challenges for the further advancement of the discipline. To address one of the challenges posed by having a diverse community, this text focuses on the identification of common discursive elements in order to characterise a specific social reality through historically situated discursive elements (Alvesson & Kärreman, 2000, p. 1126). In that sense, it focuses on identifying a proto-discourse aiming at contributing for the future construction of a discourse for the service design community. In this context, the research on a proto-discourse means "being relatively sensitive to language use in context but

interested in finding broader patterns and going beyond the details of the text and generalizing to similar local contexts” (Alvesson & Kärreman, 2000, p. 1133). By analysing and synthesizing the results of three research phases and relate them to the available literature and understandings about service design, the author proposes an approach to identify a proto-discourse about service design. A proto-discourse can be described as a “call of conscience arising from a world already meaningful, but not yet language” (Ropp, 2002). In order to identify this potential meaningful world of service design, the below described path was constructed.

## Constructing an approach

The path constructed during the present study to investigate the characteristics of a service design discourse is divided into three phases, and used a multitude of methods as a triangulation strategy, “not in order to zoom in the truth through different methods, but in order to create a richer picture” (Alvesson, 2003, p. 172). The first phase was based on the results of a research on how service design practitioners describe their approach to complex projects (Basore, Dhawan, Dong, Moore, & Sin, 2017). This phase can be defined as “emergent-spontaneous” (Alvesson, 2003) and/or “opportunistic” (Riemer, 1977). As an insider, the researcher took advantage of familiar situations or convenient events that are *known* rather than *known about* (Riemer, 1977). The second consisted of clustering (Koller, 2005) the data and results obtained by the aforementioned research in order to investigate the possibilities of using an automated text analysis technique to identifying discursive patterns. This was done in order to reduce the possible effects “of being too close, and thereby, not attaining the distance and objectivity deemed to be necessary for valid research” (Brannick & Coghlan, 2007, p. 60). Although this study is based on the understanding “that there is no objective or single knowable external reality and that the researcher is an integral part of the research process, not separate from it” (Brannick & Coghlan, 2007, p. 63), the automated text analysis was used as an attempt to instil notions of “reliability, validity, and accurate measurement before research outcomes can contribute to knowledge” (Brannick & Coghlan, 2007, p. 63). As a third phase, the focus was on proposing a proto-discourse about service design by analysing and synthesizing the results of the previous phases and relate them to the available literature and the author understandings about service design. This phase is structured on the understanding that the greater interest of “the empirical material is what the researcher-author may do with it” (Alvesson, 2003, p. 183). The results of previous phases were worked in different “ratios” in terms of the intrinsic/instrumental value to produce and inspire interpretations aimed to be informative and revealing for the production of a more abstract and conceptual contribution to the service design community (Alvesson, 2003).

As a retrospective perception of this study’s path, it seems acceptable to categorize it as a reflexive methodology research (Alvesson & Sköldbberg, 2009). More precisely, it could be defined as self-ethnography, as it implies a mindset to some extent in opposition to a more technocratic-bureaucratic approach in which procedures, rules and techniques define and legitimize the scientific project (Alvesson, 2003, p. 190).

This methodology focus on the researcher’s intention to understand “what goes around” himself by “breaking out” from a particular framework to create knowledge “through trying to interpret the acts, words and materia” (Alvesson, 2003, p. 176) used by himself and his fellow service design practitioners. And, to do so, it was employed a “variety of different ways of creating and doing something with the empirical material: from a planned-systematic kind of “data collection” to an emergent-spontaneous approach” (Alvesson, 2003, p. 181), as it is described in the following pages.

## Phase 1 – Service design approach

Due to a non-related agenda to this particular text, during the Fall Quarter of 2016, the first phase began with a literature review to identify issues faced by organisational change efforts. After identifying over 200 different issues related to these efforts, an affinization process narrowed them down to 88 common issues. Following this, eight corporate employees with

roles related to organizational change completed a survey where they were asked to rank the 88 issues based on the perceived importance. Results from the survey identified five main issues related to organizational change. From these issues, five scenarios were created as project briefings and each one was sent to 8 service design practitioners, in a total of 40 professionals identified.

The five scenarios were all focused on the theme of organizational change, which can represent one of the most challenging topics in the field of service design. The group of Master of Fine Arts' candidates from the Service Design program of the Savannah College of Art and Design (SCAD), based on an extensive research, created and submitted the following scenarios:

- Scenario 1: "Company teams across the globe vary in size, specialty, location, etc. When it comes to innovation, each team and team member has their own understanding and approach. This makes it hard to promote and implement innovation at a broader level. Based on your experience, how do you think Service Design can help create and maintain a general consensus on the meaning of innovation within the organization?"
- Scenario 2: "The incumbent company has had the same set of company culture policies in place for its entire existence. Top management doesn't see the value in updating the policies. They see it as, "if everything is working fine - why change things?" Eventually, a significant external change forces the company to have to make changes internally. Because this was so sudden, adapting to the new changes was difficult for the company. How would you help them understand that, without intermittent cultural change, they will not be able to adapt to significant changes they will eventually face in the future?"
- Scenario 3: "The company just announced they were partnering with another well-known company. This came as a big surprise to employees, who weren't given any notice about the new partnership. With the new partnership, came a new company mission, values, re-org, amongst other changes... A number of the employees were angered by the surprise change, especially because the partnership was with a company whose values didn't align with their own. Many argued that they refused to abide by some of the new changes, because they didn't morally agree with them. How would you create alignment amongst the company considering that some employees are able to justify NOT aligning with the cultural change efforts?"
- Scenario 4: Uncontrollable external forces are causing the incumbent company to have to make changes internally in order to survive in the industry. Many employees struggle to understand why they need to adapt to these new changes. Essentially, they see no incentive or payoff from the cultural change effort. How would you approach this situation?
- Scenario 5: The incumbent company has had the same set of company culture policies in place for its entire existence. Top management doesn't see the value in updating the policies. They see it as, "if everything is working fine- why change things?" In the past, change within the company has always been unexpected and forceful, and sporadic. How would you help the company understand the value of and implement continuous, intermittent change so that they are able to adapt to change, overall, easily?

The 10 questions submitted for these 40 practitioners were: Q1: As a Service Design practitioner, have you ever worked on a situation like this before? (A: Yes/No); Q2: On a scale of 1-6, how worthy of the company's effort is solving this problem? (Scale: Not worthy at all – 1, 2, 3, 4, 5, 6 - Extremely worthy); Q3: Which members of the company should be involved? Check all that apply. (Multiple-choice: Top management; Middle management; Team members directly affected; Team members indirectly affected; Other); Q4: Which members of your team would be involved? Please list their roles. (A: Text); Q5: What methods would you use? (A: Text); Q6: What tools would you use? (A: Text); Q7: Explain the sequence of events you would take. (A: Text); Q8: How much time would be needed?

(A: 0-3 months, 3-6 months, 6-9 months, 9-12 months, 1 year +); Q9: What risks would you expect to face? (A: Text); Q10: What would be the final deliverables? (A: Text).

After a two weeks period, 13 service design practitioners responded (see Table 1) responded the survey on how they would approach the scenarios they were assigned to. Although the sample size can be perceived as small from a quantitative research paradigm, this perception can be considered simplistic and misleading (Onwuegbuzie & Collins, 2007). The reflection made by the author, based on the crisis faced by mixed method researchers (Representation, Legitimation, Integration, and Politics), lead to the justified true belief that the sample size allowed the author “to address simultaneously the four aforementioned crises as adequately as possible” (Onwuegbuzie & Collins, 2007, p. 304).

While there were similarities in approaches, and it was possible to achieve informational redundancy (Onwuegbuzie & Collins, 2007), there was clearly not one standard structured approach to tackle the proposed scenarios amongst the respondents. Nevertheless, based on that sample size, it was possible to identify a common theme around understanding the specific contexts as the key factor to help the respondents to make sense (Weber & Glynn, 2006) and to set a solid foundation for their approaches. As concluded by the students:

*A deep understanding of the context of the issue at hand will create a ‘space’ in which stakeholders can work towards a resolution. A significant part of this process is research.* (Dhawan, Sin, Basore, Moore, & Dong, 2016, p. 47)

At the end, the students’ research proposed a framework to support both organisations and internal or external service design consultancies to better interact throughout cultural change efforts. In brief, the proposed framework for Designing Organizational Cultural Change Efforts is structured around supporting the necessary internal and external conversations and actions around the following themes: Context, Research, Sequence, Deliverables, and Risks.

#	Respondent	Scenarios	Location	Company	Position
1	R4/S1	S1	USA	Consultancy	Experience Design Lead
2	R5/S1	S1	USA	Consultancy	Senior Art Director
3	R7/S1	S1	Canada	University	Organizational Psychologist in Training
4	R2/S2	S2	UK	Company	Senior Consultant and Design Director
5	R4/S2	S2	USA	Consultancy	Founder and Service Design Consultant
6	R5/S2	S2	USA	Company	Experience Designer
7	R1/S3	S3	USA	Company	Design Director
8	R2/S3	S3	USA	Consultancy	Lead Service Designer
9	R3/S3	S3	Germany	Company	Founder, Service Design Consultant and Author
10	R1/S4	S4	USA	Company	Service Designer
11	R2/S4	S4	China	Consultancy	Innovation Consultant
12	R2/S5	S5	Hong Kong	Consultancy	Senior Design Research Consultant
13	R5/S5	S5	Germany	Independent consultant	User Driven Innovation, Research and Strategy Consultant

Table 1 – Information about the Respondents of Phase 1

Phase 1 happened during the months of September, October and November of 2016. For more details about the specific outcomes of the original research, see Basore, Dhawan, Dong, Moore, & Sin (2017).

## Phase 2 – Topics from the different approaches

Based on the same 13 responses to the 10 questions survey, the author developed a second phase of research consisting of investigating the possibilities of designing knowledge structures from that body of data and results.

This time, instead of analysing the responses with the particular focus of tackling organizational change, the author sought for clustering information with the aim of constructing knowledge structures (Cole, 1994). For the purpose of this research phase, ‘cluster’ means “both the co-occurrence of metaphoric expressions from various domains and the semantic overlaps between those domains” (Koller, 2005, p. 220), and ‘information’ is understood as the constituent parts of a knowledge structure, which is a subjective or objective “structure of concepts linked by their relations” (Brookes, 1980).

In order to construct the intended knowledge structures, the following steps were taken:

- Step 1: from the 10 original questions, only the contents of 7 were used for clustering. The questions 1 (As a Service Design practitioner, have you ever worked on a situation like this before? Yes / No), 2 (On a scale of 1-6, how worthy of the company's effort is solving this problem? Not worthy at all – 1, 2, 3, 4, 5, 6 - Extremely worthy), and 8 (How much time would be needed? 0-3 months, 3-6 months, 6-9 months, 9-12 months, 1 year +) were understood as to present no decisive discursive content for the intended objective.
- Step 2: the contents produced by respondents R4/S2, R5/S2, R1/S3, R2/S3, and R2/S5 were considered questionable due to the fact that they responded ‘No’ to the Question 2. These contents were not discarded, only were used as a secondary source in case they supported the content produced by the other 9 respondents.

After analyzing the responses, it was decided to conduct a clustering process by applying an automated computerized text analysis technique using the QDA Miner and WordStat software (Mitrani, 2017; Provalis, 2014). The construction of a professional discourse based on most used words by a certain group of experts on a specific field is supported by an accumulating body of research that shows that

*(stereotypical) expectations play a major role in the way information about persons and group members is processed [...], what information is preferentially retrieved from memory [...] and the way these expectations affect impressions and judgments [...].* (Dijksterhuis, van Knippenberg, Kruglanski, & Schaper, 1996, pp. 254–255)

This approach is also supported by the understanding that, in a distributed memory model consisting of three processing modules (the orthographic, phonological, and meaning codes for a set of words),

*the activation or retrieval of a known concept entails establishing a specific pattern of activation across a set of processing units that represent various semantic features and that constitute a meaning module.* (Masson, 1995, p. 4)

By identifying these meaning modules present on the texts of the responses, it may be possible to infer knowledge structures that support the action of the respondent group. The texts of the responses, divided in 5 files (Q5, Q6, Q7, Q9, and Q10) were imported to the software (n=5). For the purpose of the intended analysis of a discursive construction for service design, and due to the small number of respondents (N=13), no pre-processing procedures were employed like stemming or lemmatization. It is important to note that the above-mentioned software uses a different definition to the concept of ‘cluster.’ While for the present text, the meaning of ‘cluster’ is as presented above, the software makes a distinction between at least two options of methods for finding patterns and groupings data:

topic modeling, and cluster analysis. The software's algorithm clusters documents into different groups based on a similarity measure between words: it applies a similarity measure to the numeric vectors to group the data. Its alternative is the feature 'Topic Extraction,' which can be defined by a set of keywords with each keyword in the set having a probability of occurrence for the subject topic. In brief,

*[w]hile in hierarchical cluster analysis, a word may only appear in one cluster, topic modelling using factor analysis may result in a word being associated with more than one factor, a characteristic that more realistically represents the polysemous nature of some words as well as the multiplicity of context of word usages. (Provalis, 2014, p. 45)*

Therefore, the Topic Extraction feature was applied (Segmentation: by paragraph; No. topics: 3; Loading: 0.30) to the responses provided by 9 participants (Question 1: Yes) to 5 of the 10 original questions. The resulting topics and keywords can be seen on Table 2. The eigenvalue represents the strength of the co-occurrence of the words in the topics, the percentage of cases indicates how commonly used that group of word is in the analysed documents.

The keywords are listed meeting the factor loading cutoff criteria (0.30) in descending order of factor loading. As an example, the Topic 1 group has an order factor loading of 8.41 (Eigenvalue), and the specific keywords 'STORIES' and 'WORKING' have the highest and the lowest individual factor loading of this group, respectively.

No	Keywords	Eigenvalue	% Var	Freq.	Cases	% Cases
1	STORIES; SERVICE; PROJECTS; MAPS; IMPACT; PHASE; WORK; INTERNAL; PROTOTYPES; INNOVATION; JOURNEY; MAPPING; METHODS; DESIGN; WORKING	8.41	16.97	62	5	100.00%
2	TEAM; DATA; INTERVENTION; IMPORTANT; ORGANIZATION; EMPLOYEES; CULTURE; WORKING; CHANGE; BUY-IN; MANAGEMENT; PROJECTS	3.69	15.33	59	5	100.00%
3	IMPLEMENTING; CO-CREATE; PEOPLE; BUY-IN; UPPER; MANAGEMENT; PROTOTYPES	2.79	10.27	29	4	80.00%

**Table 2 – Topics extraction from 9 respondents of phase 1**

Illustratively, as can be seen at Table 3, concerning Topic 1, it can be said that the combination of terms 'STORIES' and 'SERVICE' better describes Topic 1 then combining 'DESIGN' and 'WORKING.' It's interesting to note that the word 'PROTOTYPES' is shared by the Topics 1 (STORIES) and 3 (IMPLEMENTING), 'MANAGEMENT' by 2 (TEAM) and 3 (IMPLEMENTING), and 'WORKING' by 1 (STORIES) and 2 (TEAM).

No	Topic 1	Topic 2	Topic 3
1	<b>STORIES;</b>	<b>TEAM;</b>	<b>IMPLEMENTING;</b>
2	SERVICE;	DATA;	CO-CREATE;
3	PROJECTS;	INTERVENTION;	PEOPLE;
4	MAPS;	IMPORTANT;	BUY-IN;
5	IMPACT;	ORGANIZATION;	UPPER;
6	PHASE;	EMPLOYEES;	MANAGEMENT;
7	WORK;	CULTURE;	PROTOTYPES
8	INTERNAL;	WORKING;	
9	PROTOTYPES;	CHANGE;	
10	INNOVATION;	BUY-IN;	

11	JOURNEY;	MANAGEMENT;	
12	MAPPING;	PROJECTS	
13	METHODS;		
14	DESIGN;		
15	WORKING		

**Table 3 – Words listing by topics from 9 respondents of phase 1**

As a support for the analysis on Phase 3, the same process was applied to the responses provided by all 13 participants to 5 of the 10 original questions. The resulting topics and keywords can be seen on Table 4.

No	Keywords	Eigenvalue	% Var	Freq.	Cases	% Cases
1	STORIES; MAPS; MAPPING; STAKEHOLDER; INTERVIEWS; PROTOTYPES; JOURNEY; SERVICE; IMPACT; RESEARCH; INNOVATION; WORKSHOPS; PHASE; SCALE	9.45	10.47	89	5	100.00%
2	TEAM; BUY-IN; DATA; INTERVENTION; CULTURE; IMPORTANT; ORGANIZATION; PEOPLE; IMPLEMENTING; WORKING; CHANGE; EMPLOYEES; CO-CREATE; LEADERSHIP; UPPER	4.10	11.60	104	5	100.00%
3	CONDUCT; PROJECTS; MAKE; SMALL; INTERNAL; MANAGEMENT; TRAINING; ANALYSIS; COMPETITIVE; PHASE; STORIES; EMPLOYEES; WORK; WORKING; IMPACT	3.20	12.12	42	5	100.00%

**Table 4 – Topics extraction from 13 respondents of phase 1**

At Table 5, out of a total of 20 different words, it is possible to verify that 9 words are present on both topic extraction processes. It is also worth noting that both share the same first word listed in descending order of factor loading: 'STORIES.'

To provide the reader with some context on how these words were used, two excerpts of the responses for each topic's first word will be presented. For the Topic 1 - 'STORIES,' the excerpts are:

- Q6 – R2 / S2: “Opportunity STORIES, [...]. User STORIES (Epic, Themes and STORIES) [...].”
- Q7 – R3 / S3: “Keep on communicating both success as well as failure STORIES.”

No	9 Respondents	13 Respondents
1	STORIES;	STORIES;
2	SERVICE;	MAPS;
3	PROJECTS;	MAPPING;
4	MAPS;	STAKEHOLDER;
5	IMPACT;	INTERVIEWS;
6	PHASE;	PROTOTYPES;
7	WORK;	JOURNEY;
8	INTERNAL;	SERVICE;
9	PROTOTYPES;	IMPACT;
10	INNOVATION;	RESEARCH;

11	JOURNEY;	INNOVATION;
12	MAPPING;	WORKSHOPS;
13	METHODS;	PHASE;
14	DESIGN;	SCALE
15	WORKING	

**Table 5 – Comparison of words for topic 1 (9 and 13 respondents of phase 1)**

For Topic 2, from a total of 17 different words as presented by the Table 6, the first 10 words found in the 9 respondents version are also present at the 13 respondents' one.

No	9 Respondents	13 Respondents
1	TEAM;	TEAM;
2	DATA;	BUY-IN;
3	INTERVENTION;	DATA;
4	IMPORTANT;	INTERVENTION;
5	ORGANIZATION;	CULTURE;
6	EMPLOYEES;	IMPORTANT;
7	CULTURE;	ORGANIZATION;
8	WORKING;	PEOPLE;
9	CHANGE;	IMPLEMENTING;
10	BUY-IN;	WORKING;
11	MANAGEMENT;	CHANGE;
12	PROJECTS	EMPLOYEES;
13		CO-CREATE;
14		LEADERSHIP;
15		UPPER

**Table 6 – Comparison of words for topic 2 (9 and 13 respondents of phase 1)**

As excerpts for the Topic 2 - 'TEAM,' the following are provided:

- Q7 – R7 / S1: “After the large group intervention, the TEAM would meet to consider next steps.”
- Q7 – R3 / S3: “Create a formal internal TEAM (or council) or service design experts [...]”

Topic 3 present the biggest disparities in terms of word groups. Although it seems possible to draw inferences on the similarities between contextual meanings of the words 'IMPLEMENTING' and 'CONDUCT,' the fact is that only the word 'MANAGEMENT' is share by both extractions out of a total of 20 words, as can be seen at Table 7.

No	9 Respondents	13 Respondents
1	IMPLEMENTING;	CONDUCT;
2	CO-CREATE;	PROJECTS;
3	PEOPLE;	MAKE;
4	BUY-IN;	SMALL;
5	UPPER;	INTERNAL;
6	MANAGEMENT;	MANAGEMENT;



7	PROTOTYPES	TRAINING;
8		ANALYSIS;
9		COMPETITIVE;
10		PHASE;
11		STORIES;
12		EMPLOYEES;
13		WORK;
14		WORKING;
15		IMPACT

**Table 7 – Comparison of words for topic 3 (9 and 13 respondents of phase 1)**

The selected excerpts for Topic 3 - 'IMPLEMENTING' are the following ones:

- Q5 – R7 / S1: “Collect this qualitative data from customers and employees to get a pulse on the overall buy-in of the organization on a potential change initiative before IMPLEMENTING anything.”
- Q7 – R1 / S1: “[...] absolutely has to be co-create with the people that will be IMPLEMENTING changes [...]”

As a result of Phase 2, it was possible to infer that there are three main topics or discursive clusters supporting the service design discourse of these 9 respondents. In a descending order of factor loading, these clusters could be named: Stories, Team, and Implementing. The meaning of each one of these names cannot be derived by a simple etymological assessment. It is the context in which they are used that will support constructing an understanding about them. In that sense, each topic can be understood as a dynamic system, as a basin of attraction, where its “name” (the first word of each cluster) can be seen as the minima of the basin, the point where the “system comes to rest” (Masson, 1995, p. 5). In order to be able to be understood as a network of professionals, service design must be “located in just a few large basins of attraction, so networks tend to converge toward one of a relatively few attractors” (Lansing, 2003, p. 190).

### Phase 3 – Proto-discourse about service design

The third phase is focused on proposing a proto-discourse about service design by analysing and synthesizing the results of the previous phases and relate them to the available literature and understandings about service design. The word ‘discourse’ seems to have two main and different meanings when concerning organization studies:

*the study of the social text (talk and written text in its social action contexts) and the study of social reality as discursively constructed and maintained (the shaping of social reality through language). The former approach highlights the ‘talked’ and ‘textual’ nature of everyday interaction in organization. The latter focuses on the determination of social reality through historically situated discursive moves* (Alvesson & Kärreman, 2000, p. 1126).

This phase intent was on determining some sort of social reality through historically situated discursive moves. In that sense, focuses on identifying a proto-discourse aiming at a contributing to the future construction of a discourse (Alvesson & Kärreman, 2000). Besides the results of Phases 1 and 2 described above, this third phase also included a comprehensive literature review that spans from 1984 to 2017, similar to the one performed by Antons and Breidbach (2018).

A non-exhaustive description of these analysis and synthesis for each one of the identified topics is presented below.

#### Topic 1: Stories

The analysis and synthesis of Topic 1 (9 Responses: STORIES; SERVICE; PROJECTS; MAPS; IMPACT; PHASE; WORK; INTERNAL; PROTOTYPES; INNOVATION; JOURNEY; MAPPING; METHODS; DESIGN; WORKING) enables to understand service design efforts as a social process of identifying and communicating strategic decisions related to enhancing organizational performance (Wiltbank, Dew, Read, & Sarasvathy, 2006). These efforts are based on a DESIGN approach, “which combines the objective and subjective self-formative process of the human species” (Dilnot, 2017, p. 5).

The DESIGN of innovative SERVICE propositions demands crafting and telling the right kind of practical and emancipatory STORIES (Alvesson & Kärreman, 2000; Feldman & Sköldbäck, 2004) to the right audiences at the right PHASE. These stories are about new “activities emanating from specialized knowledge and abilities that people do for themselves and others (i.e., service, applied abilities) and the activities they want done for them” (Vargo & Lusch, 2017, p. 47). The connection between STORIES and SERVICE INNOVATION can be supported by the fact that “narrative has played an important adaptive function in human evolution because it offers a way to simulate an experience” (Adornetti, 2014, p. 234).

Stories enable organizations to simulate new service propositions, helping specific social contexts to make sense (Weber & Glynn, 2006) of what is or not WORKING and to define PROJECTS that can positively IMPACT the real world. Researchers suggest that “service design plays a key role in service innovation” (Patrício, Gustafsson, & Fisk, 2017).

Understanding SERVICE INNOVATION dynamics implies having a clear perception not only of the constant external renewal of value flows, but also of what occurs at the INTERNAL contexts of organisations due to the corresponding potential new configurations demanded by new service offerings. This systemic perspective on service design requires iterative METHODS for MAPPING JOURNEYS and creating PROTOTYPES (Blomkvist & Holmlid, 2010, 2011) to enable the identification of patterns, “because relationships and processes cannot be measured in the traditional sense due to their emerging properties” (Vargo et al., 2017, p. 4).

As a last remark about Topic 1, it is important to keep in mind that this is the topic with the highest order factor loading (8.41) of the three automatically extracted. This number cannot be taken in absolute, but only in relation to the other topics values. The larger the Eigenvalue, as compared with the other topics, the stronger the evidence that the measured variables represent the underlying constructs (Doll, Xia, & Torkzadeh, 1994). This suggests that Topic 1 is the most well-structured discourse basin.

## Topic 2: Team

The analysis and synthesis of Topic 2 (9 Responses: TEAM; DATA; INTERVENTION; IMPORTANT; ORGANIZATION; EMPLOYEES; CULTURE; WORKING; CHANGE; BUY-IN; MANAGEMENT; PROJECTS), with an order of factor loading of 3.69, suggests that service design efforts have a basin of attractors focused on processes of developing and communicating a holistic yet detailed analysis of specific social contexts (Basore et al., 2017) in which an organisation “lives” by analysing its relationships with current and prospective stakeholders (ORGANIZATION; CULTURE), as well as the nature and the role of said stakeholders (EMPLOYEES; TEAM; MANAGEMENT). To understand stakeholders’ contexts most IMPORTANT (prioritizing) aspects, service design relies on producing valid DATA. Which is obtained by the application of qualitative and quantitative research methodologies, methods and tools. The produced data, interpreted through design and co-creation practices, is the foundation to define INTERVENTION PROJECTS to drive CHANGE. Consistent data, in instrumental, practical, and emancipatory forms (Habermas, 2005), is decisive to apprehend and implement changes in social reality.

The words identified for Topic 2 are mostly related to internal elements of an organization. Although the proposed scenarios were focused on organizational change, the author believes that the discourse should include references to external elements. Which leads the author to infer that the collective perception amongst service design practitioners has an emphasis on “internal stakeholders” and a lack of “complex systems” discursive elements.

As academic service research suggests, the lack of consistent apprehension of social reality leads to failure in strategy and “can play a role in theorizing about how to develop more effective strategy implementation” (Vargo & Lusch, 2017, p. 60).

Besides direct customers and suppliers, service design efforts would also need to designate broader networks of actors that can support an organisation throughout its innovation efforts. Those actors can be researchers, experts, inventors, entrepreneurs, managers, designers, sponsors, project teams, R&D groups, firms, universities, R&D labs, incubators, government, public funding agencies, associations, virtual organisations, clusters, and technological parks (Pacheco et al., 2017).

### Topic 3: Implementing

Topic 3 (9 Responses: IMPLEMENTING; CO-CREATE; PEOPLE; BUY-IN; UPPER; MANAGEMENT; PROTOTYPES), with an order of factor loading of 2.79, has the least amount of words identified and the lowest Eigenvalue. These results lead the author to infer that the collective perception amongst service design practitioners presents a lack of “implementation” discursive elements.

The words identified for Topic 3 and the literature reviewed suggest third basin for service design that seems to revolve around developing and communicating a constantly-updated understanding of the trends and factors that influence and contribute to IMPLEMENTING organizational change. In order to do that, service design efforts should CO-CREATE an understanding in middle and lower MANAGEMENT, and then obtain UPPER MANAGEMENT BUY-IN-in.

Understanding the systemic nature of social change – at a micro, meso, and macro aggregation levels (Vargo & Lusch, 2017) – may contribute to effectively encouraging and supporting organizational transitions into preferred futures (Simon, 1996). The literature review points towards the concept of institutions (Vargo, Wieland, Archpru, & Akaka, 2015; Weber & Glynn, 2006) and institutional transformation (Sarasvathy & Dew, 2005) as a broad socio-historic, as well as economic perspective, that requires the development and communication of a constantly-updated understanding of possible effective actions that can support organisations and social contexts to adopt and implement innovative opportunities, i.e. strategic decisions related to enhancing organizational performance (Wiltbank et al., 2006).

### Preliminary considerations and future directions

As preliminary considerations, it seems that the three phases approach - with the use of an automated text analysis technique - to identify service design narratives used to address organizational challenges may be effective. The approach would start with constructing organizational challenge scenarios and obtaining service design narratives to address them; the obtained narratives would be submitted to an automated text analysis technique to identify topics and discursive elements; these discursive elements would be critically analysed and considerations about the presence or lack of specific words would be constructed under the light of pertinent literature review. Further research with a larger sample of respondents and different scenarios should yield more precise discursive elements groups.

This text suggests that Topic 1 is the most well-structured discourse basin in relation to Topics 2 and 3. Which leads the author to infer, based on the present study results, the need for further research on the collective perception amongst service design academics and practitioners on three directions: 1) the over-emphasis on “stories / service / projects / maps” discourse; 2) the emphasis on “internal stakeholders” and the lack of “complex systems” discourse, and 3) the lack of “implementation” discourse in the related community. Service design, as a practitioners’ field of activity, can be defined in many ways and related to myriad diverse human characteristics and professional capabilities. From a reflexive research perspective, the identification of discursive elements, their presence and consistency or lack of them, based on how practitioners describe their approaches, followed by an automated analysis of their texts, and adding theoretical elements from the pertinent literature, seems to make sense. From a critical standpoint, rather than identifying specific human characteristics

or practices, the identification of discourses elements that can be adopted by all sorts of organizations and individuals, frees the service design community from defining specific tools, practices, personalities, professional skills and capabilities.

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# Resident autonomy in assisted living facilities: A conceptual framework for transformative service research

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## Abstract

In this paper we explore the concept of autonomy and its impact on health for older adults living with chronic illness. With the world's population growing older, along with increased incidence of disease, much needs to be done to mitigate the burden of illness for the health of the person, communities and the nation. Part of the solution of growing old with disease, is in the residential placement settings with service designed technology to aid the individual to maximize their quality of life. From a social ecological framework, we outline key concepts as reported by elders for designing transformative service. Determinants of autonomy both from a health and a design perspective were explored interprofessionally. The key concept as reported by elders for the meaning of autonomy was the ability to make their own decisions. The study concludes with prospective research plans to design a prototype solution to help mitigate autonomy.

**KEYWORDS:** autonomy, service design, assisted living, transformative service research

## Introduction

In the United States, more than 835,200 older adults reside in assisted living and similar residential care communities (Center for Disease Control and Prevention [CDC], 2015). These communities provide services to individuals who often cannot live independently but do not require the degree of assistance that would necessitate residence in a skilled nursing facility (Khatutsky et al., 2016). Although the transition from residence in one's own home to residing in an assisted living facility is often necessary, most older adults prefer to age in place and avoid transitions (National Council on Aging, 2015). Moreover, the transition from independent living to a residential care community may threaten an individual's autonomy (Shippee, 2009). This is significant given that there is a growing body of research that suggests increased autonomy is associated with positive health outcomes and improved quality of life (Murphy, Cooney & Casey, 2014; Sikorska-Simmons & Wright, 2007). In the service design literature, scholars have argued that a greater sense of personal agency

positively impacts the perceived process quality of a service, thereby improving the person's functional outcome quality and capacity (Grönroos, 1984; Edvardsson 1997). There is an increasing number of aging adults living in assisted service (Harris-Kojetin, et al., 2013; Harris-Kojetin et al., 2016), yet little is known about their needs for maintaining their sense of agency or autonomy.

### Assisted Living Facilities-definition and review

According to the National Center for Health Statistics (NCHS) there were in 2014 some 30,200 residential care communities, serving 835, 200 residents across the United States and these numbers continue to rise annually. These licensed, registered or certified residential care communities varied by bed capacity (Sengupta, Harris-Kojetic and Caffrey, 2014), and according to the skilled level of care provided (NCHS, 2016). The majority of residents live in communities with more than 50 bed capacity. Functionally, screening for cognitive impairment is done to determine dementia-specific programming or skilled level of healthcare needs (NCHS, 2012). Those facilities that provided assistive living services, when the resident required minimal care while living as independently as possible, with the availability of personal care aides (PCAs) made up approximately 94% of all these communities. These communities are found all over the United States and are growing as the aging population increases (US Census Bureau, 2014). The latter was the target population of our research.

A report from the U.S. National Center for Health Statistics (NCHS) released in 2016 entitled Long-Term Care Providers and Services Users in the United States: Data from the National Study of Long-Term Care Providers, 2013 – 2014 indicated that the daily use rates per 1,000 residents aged 65 and older in Massachusetts were 12.07 and was on par with the national estimates of 16.77 with a standard error [SE] of 0.42. When the rates were interpreted for those aged 85 years and older, that daily use rate rose to 44.21 with a SE of 2.05. According to the same NCHS report there are 13,600 licensed maximum capacity facilities for long term care in Massachusetts, USA, half of which are chain affiliated and 46.6% are Medicaid certified. With only 4,794 full time nursing and social work employees to serve 12,900 elderly living in residential care communities, the need to design services to maximize the autonomy of residents is crucial in helping to keep these residents as physical and cognitively healthy as possible. Today's innovative service designs though anticipated to be developed with individualized or unique features, will need to consider that adults  $\geq 85$  years old make up more than one half of the residents (59.1%), the majority are women 73.6%, most are Non-Hispanic whites and most require some help with activities of daily living particularly grooming. Most importantly, that it should be scalable at some point as the predicted growth rate of adults  $\geq 65$  years old, is anticipated to be 22.2% by 2020 and 25% by 2050; 83.7 million, almost double its estimated population of 43.1 million in 2012 (US Census Bureau, 2014).

One cannot address the aging of Americans without attention to the health impact or disease burden to individuals, families, and society. Negotiating for health services and navigating the health system are integral aspects of managing care in the elderly, and thus autonomy is important. These episodes of transition care can be viewed as negative services. Negative services are those that are necessary but unwanted or perceived as stressful by the consumer (Morgan & Rao, 2006). Anderson and Ostrom (2015) identified several issues that may contribute to the conceptualization of a service as negative, including the chronic nature of a consumer's need for a particular service, power dynamics, prejudices, and marginalization (p. 244). The domain of autonomy has undergone paradigm shift, in the relevance to various disciplines, but one of its variable remain constant and that is the *desirability* of autonomy.



## Transformative Service Research

Transformative Service Research (TSR) is a burgeoning field in service marketing studies, yet much of the work in this realm is still conceptual, and more work needs to be done as quantitative and qualitative research. TSR is defined as “service research that canters on creating uplifting changes and improvements for the well-being of individuals (consumers and employees), families, social networks, communities, cities, nations, and ecosystems” (Anderson and Ostrom, 2015). It is research for the greater good, encompassing social responsibility, sustainability, health and economic growth, and is flourishing within the service and consumer research realms. Anderson and Ostrom (2015) defined transformative service research as “any research, regardless of academic discipline...that investigates the relationship between service and well-being,” (p. 243).

The intersection of service design and health is not always with positive impact. Subsequently, several authors (Morgan & Rao, 2006; Singh & Duque, 2012; Spanjol et al., 2015) have called for further research into negative services. The conceptualization of residential care as a negative service provides a framework for planning transformative service research that seeks to mitigate threats to autonomy in the residential care setting. In our study, we sought to learn elders’ perspectives on their sense of autonomy for the purpose of designing a service system to make health related care arrangements among the population who needs assisted care. The purpose of this paper is therefore to provide evidence for understanding autonomy in the context of transformative service research. Using an interdisciplinary team approach, we synthesized findings from the design, marketing, and nursing literature to define autonomy, identify its determinants, and construct a conceptual framework of assisted living resident autonomy. We posited that qualitative research to support our hypothesis that service design for mitigating elders’ autonomy in residential care communities required first-hand knowledge of this concept.

## Autonomy

According to Spear and Kulbok (2004), autonomy “may be defined as a state of being independent or self-governing”. Although the concept of autonomy was used in a variety of settings, it was not defined beyond the simple definition of independence or self-governance. Earlier studies examined it in relations to language development, (Littlewood, 1996). Spear and Kulbok (2004) raised three different areas as examples: nursing research on adolescent autonomy focused on self-determination, control, decision-making, and social and risk behaviours; education research examined autonomy in light of self-learning, intrinsic motivation, locus of control, and academic achievement; and psychosocial research focused on maturation, self-efficacy, independence, individuation, and self-actualization concepts. The authors identified several common attributes of the concept of autonomy including active, individualized, holistic, contextual, and developmental. What follows is a brief explanation of different perspectives of autonomy.

## Determinants of autonomy: from a health perspective

Researchers in health sciences have identified several determinants of autonomy among older adults living in residential care. Primary among these determinants is the extent to which residents are presented with choices and maintain control over their decisions. As Rodgers and colleagues (2007) observed, residents who are involved in decision making, experience enhanced autonomy because the act of making a decision permits a continuation of the residents’ prior social role. Specific examples of decisions that have been found to promote autonomy in the residential care setting included managing one’s own medication rather than relying on staff (Perkins et al., 2012); deciding how much to eat or how much to stay awake (Tuominen, Leino-Kilpi & Suhonen, 2016); deciding when to go out and when to participate in communal activities (Bradshaw et al., 2012); and being able to access assistance 24 hours a day rather than following a caregiver’s visitation schedule (Fjordside & Morville,

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2016; Tuominen, Leino-Kilpi, & Suhonen, 2016). As Bradshaw and colleagues (2012) observed, when daily life is regimented and restricted, a sense of institutionalized living occurs.

Relatedly, privacy has been identified as a second determinant of autonomy among older adults living in residential care. Bradshaw and colleagues (2012) found that having one's own living space—including one's own bedroom, bathroom, and storage—provided privacy and allowed residents to exercise control over their daily routines. Fjordside and Morville (2016) observed that while services provided by caregivers in the home permit care recipients to live longer in the community setting, these services often come at the expense of privacy. In addition, the authors observed that the presence of caregivers may be experienced by residents as a burden if the caregiver is unfamiliar with the resident's needs and preferences. For this reason, established relationships with long term caregivers promote resident autonomy. Likewise, maintenance of residents' existing relationships with family, friends, and neighbours promotes autonomy by continuing the social role held prior to the transition into the residential care setting (Perkins et al., 2012; Walker & Paliadelis, 2016). When examining brain health and the elders' social engagement, the ability to make independent decision was implied as being integral to well-being. (Meghan et al., 2017).

### Determinants of autonomy: from a design perspective

Littlewood (1996) introduced two essential components of autonomy: ability and willingness. Ability depends on if an individual has both knowledge about the choices one has and the skills required to perform certain behaviours. Willingness depends on both individual's motivation and self-efficacy to perform a behaviour. Researchers in the field of Human/Computer Interaction proposed four spheres of autonomy in technology design (Calvo, Peters, Johnson, & Rogers, 2014). First, designing autonomy within a software environment. Autonomy in this sphere provides freedom and control to an individual user while using a software or tool. Second, designing assistive technology to support and improve autonomy in daily activities. For example, using self-monitoring technologies to track physical activity and dietary choices. Third, using personalized design to address individual needs. Finally, designing technologies to improve autonomy through psychological development, such as raising awareness and consciousness and supporting self-reflection.

Batya Friedman (1996) discussed how designs can promote user autonomy. This author also raised an example of a new computer workstation to illustrate how hardware design can either hinder or help the user's ability to control the technology. Furthermore, by using the term of user autonomy, she referred to individuals who are self-determining, who are able to decide, plan, and act in ways that they believe will help them to achieve their goals and promote their values. Autonomy in this context is protected when users are given control over the right things at the right time and the challenge for design is to decide these *whats* and *whens*.

Davy (2015) explored the concept of autonomy within the context of inclusive design. She believed standard accounts of autonomy create inaccessible philosophical environments by focusing on individual capacity and naturalizing the exclusion of people with intellectual disability from the purview of political and moral theory. She also pointed out that sociopolitical understandings of autonomy as an individualized entity contribute to the lack of social and political assistance and resources offered to people with disability. She argued that a model of autonomy is needed that takes the vulnerable individual as its starting point and emphasized relations of support and advocacy, based on the premise that we all require supportive relationships and enabling environments in order to exercise autonomy.

Kim (2015) explored dignity and autonomy from three perspectives in her works on service design. This researcher believed autonomy is setting up self-governing rules, which is the beginning of the action, concluding that the three perspectives were self-control, self-

decision, and free will. Kim believed that people find dignity when they act as autonomous agents of their own doing and being. From both the health and design perspective a framework of health that encompasses both was considered for use.

## Conceptual framework

A framework that comprehensively examines the concept of living with chronic illness and takes into account the various domains was utilized as a resource for our study planning. As seen in the image below, designed by Robert Wood Johnson Foundation (RWJF) the delivery systems design is an integral part of any health system. Furthermore, decision making and the organization of health care is crucial to the implementation of any disease management or wellness program. The framework is presented below in Figure 1 RWJF Chronic Disease Management Model, as two major concentric ovals representing the constructs of Health Systems and Community. The relationship of organizations of healthcare, clinical information systems, delivery system design, and decision support all falls under health systems, which together is a subset of the community for an individual. However, the larger community also has self-management support and resources and policy that impacts a person health. The model widely used by governmental agencies in Australia, Canada and the US though useful in the initial iterative stage of our research was replaced with the Social Ecological Model to best explain the meaning of autonomy as reported by elders

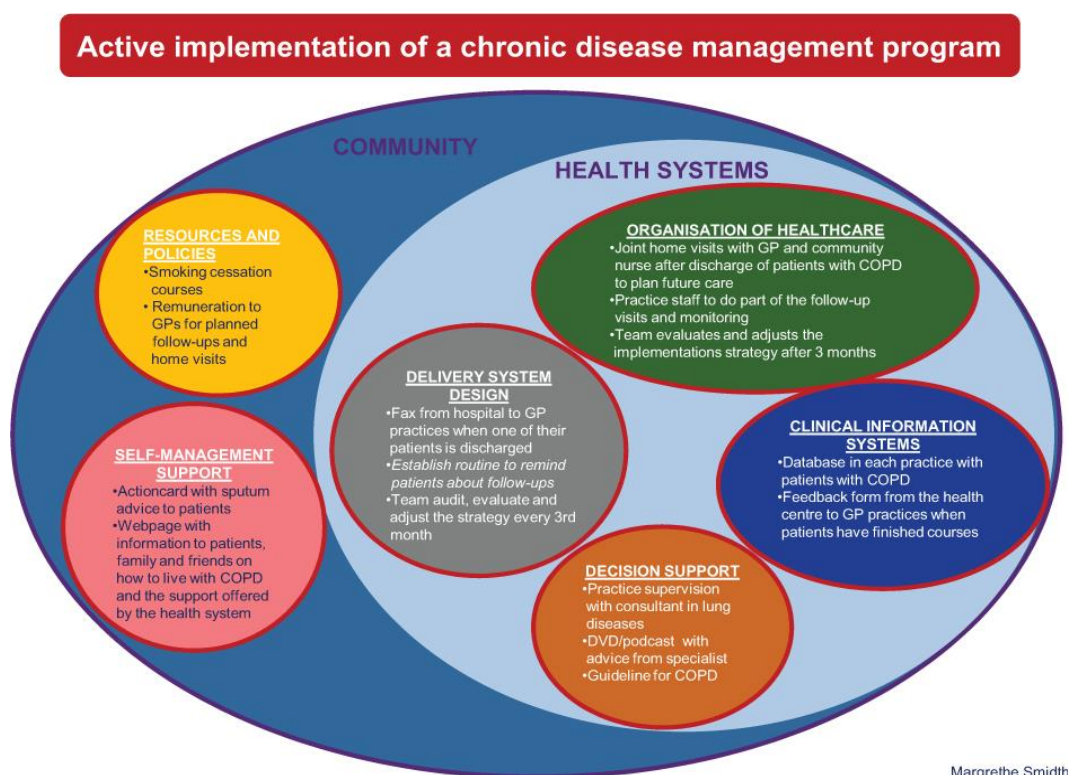


Figure 1. RWJF Chronic Disease Management Model

## Autonomy conceptualized

The Social Ecological Model (SEM), is a framework for prevention, and provided the operational framework for this study. This framework shifts the current view of care from a purely medical model to that of a socioecological perspective. There are a few variations of

the model, which was first developed as an ecological systems theory by Urie Bronfenbrenner in the 1970s. This was further developed by McElroy in 1988 to capture not only the physiological determinants of a human problem but also the behavioural and public health aspects of a problem or phenomenon under investigation (Coreil, 2009). According to Coreil (2009), these models are some of the most widely used for application to health promotion, the Center for Disease Control (CDC) also has used this model in health promotion and disease prevention efforts.

The SEM model has twenty-one domains which are divided into five hierarchical levels. Level 1 is Intrapersonal/ Individual. These are factors that impact the individual at a personal level for example; education, attitudes, genetics, and demographics. Level 2 is Interpersonal. This usually represents social networks and family characteristics or relationships in the immediate community that influence health care behaviours. Medical-provider health teaching and commonly prescribed treatment for disease can be included here. Level 3 is Organizational/ Institutional. These factors include social and cultural norms established by schools, workplaces, and neighbourhoods. It explores the health impact based on where people live, work or play. It also takes into consideration societal factors such as culture and religion (for example, people living in residential communities). Level 4 is Social/Policy: This could be public policy and regulation for example, the use of license and certification to determine who and where levels of care can be given to the elderly. It may also examine the effects from the built environment, socioeconomic, public facilities and health care needs. Level 5 of the SEM is most distal to the individual and is the level at which the individual has the least control over, it deals with the societal environment, such as the health facilities, economics, educational institutions, policies, and other largescale infrastructure of society (Coreil, 2010) including health insurance.

A model of this type is fitting when studying a condition as complex as elder care and designing for autonomy. The status of autonomy can be affected by having physiologic problems, or mental incapacity (inability to make decisions on their own). There may also be health literacy concerns in which the subject lacks the knowledge or understanding of navigating the system to protect their well-being. The community changes with the varied human and economic resources availability. Even standards of care or policies that leave varied levels of uncertainty among family and health practitioners for screening and treating frail adults can contribute to the complexity of aging in America phenomenon. The levels for this framework are illustrated in Figure 2 (Conceptualizing Autonomy using the Socioecological Model (SEM) below to show its construct alignment to autonomy and sets the groundwork for user engagement service designing.

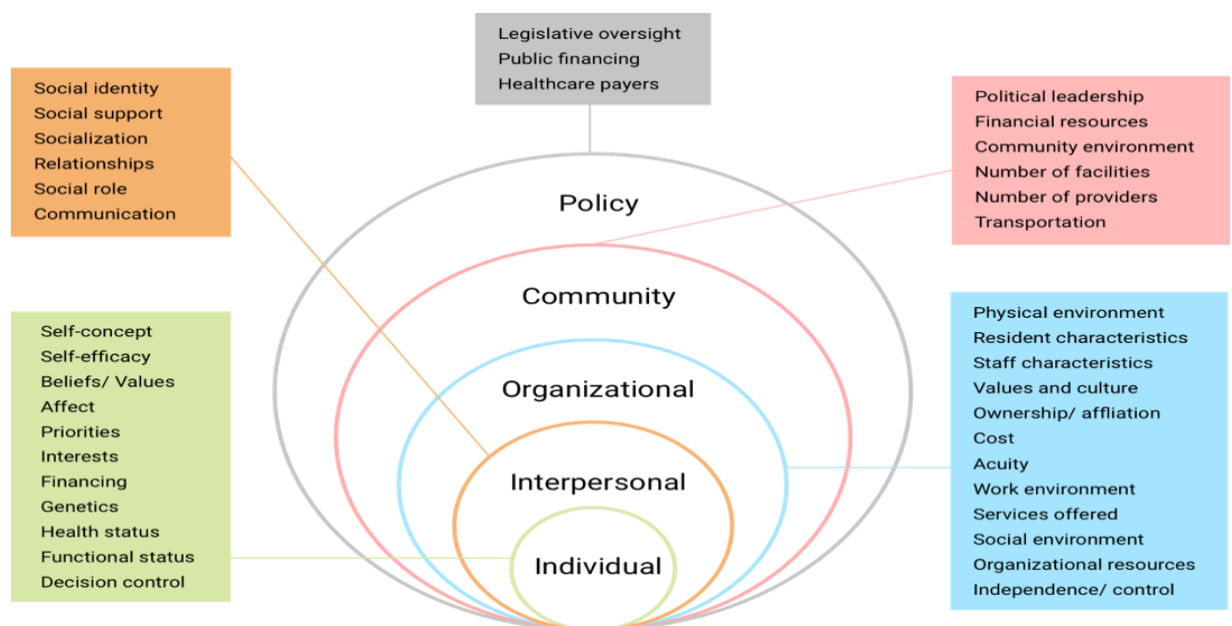


Figure 2. Conceptualizing Autonomy using the Socioecological Model (SEM)

## Methodology

Our research was an iterative process that started with the literature review to determine gaps in elderly healthcare and scope of the problem. Then with institutional review board (IRB) approval we conducted our study which included face to face recorded interviews, participant journaling and in- home observation of those person who met the inclusion criteria. If they met the inclusion criteria of being 65 or older, was fluent in English and had one or more chronic disease and resided in a residential care community they were invited to participate.

People then self-selected to be part of the study and underwent two screens, (1) was to determine cognitive ability using the Allen Cognitive Level Screen [(ACLS) leather lacing] tool and were excluded from the study if their scores fell below 5,  $n=1$ . The ACLS tool was developed according to Allen, (1991) to grossly estimate a person's higher functioning cognitive processing capacities, learning potential, and performance and problem-solving abilities. The use of this tool was meant to screen out any of the adults who had mental impairment or dementia at the level that impaired functioning or engaging with our research team. The ACLS tool is an evidenced based standardize screening assessment. (2) Was to evaluate their literacy in medicine using the 'Rapid Estimate of Adult Literacy in Medicine' short form (REALM-SF) tool. According to the Agency for Healthcare Research and Quality; Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. The tool has been validated and field tested in a variety of setting, (Arozullah, 2007). The research team felt these two pieces of information were also important to know as we ideate and propose the service design prototype. The participants were given a small monetary incentive for their participation.

# Results

In the first phase of the study, participants [n=10] were interviewed, they ranged from 65 to 90 years-old, were female and predominantly Caucasian. They had one or more chronic disease with varying obvious levels of physical impairment, and all communicated in English. Although they came from many States across the USA, they were now living in a single residential care community designed for seniors. Their living in the residential community ranged from a few weeks to 21 years. From the 2-week journaling activity, there were 135 journal entries received fully completed from n=9 participants. In home observations were done with n=9 participants. The next phase informed by the findings from the interviews, journaling and observation was a combination of ideation, territory mapping and then story telling. Armed with these stories, solution and proposed outcomes, we conducted four focus group with participant and key informants n= 24 two of these groups included participants from the first phase of the study.

Using Dedoose Web 2.0 for data analysis and thematic formations we found that participants described autonomy in a variety of ways consistent with the science of autonomy, but the most common themes were (a) making one's own decision; (b) completing one's own task (errands, financial management) and (c) having the means (financial, transportation and mental or physical health) to achieve one's goals. In the Figure 3 below, Autonomy defined by elders, excerpts from the interview demonstrates this significance:

## Participants' definition of *autonomy*

1	Making one's own decisions	2	Completing one's own tasks	3	Having the means and ability to achieve one's goals.
<b>Interview 3XX</b> <i>"Taking care of myself, nobody telling me what to do or when to do it, driving my car, handling my own finances, being physically able to do what I need to do. ...the main thing is nobody telling me what to do or when to do it"</i>		<b>Interview 3XX</b> <i>" I think as you get older, you have to cooperate. If someone tells you take your..... You have to do it. But I'll probably only do something kicking and screaming. But no, you really. I used to tell people, if you take a little help, you can stay independent longer."</i>		<b>Interview 3XX</b> <i>"Especially the day you have to give up your license. You might as well just give up. You know because really you're losing your independence when you do that."</i>	

Figure 3 Autonomy defined by elders

Relationship with children ranked at the top of their list. For many of the participants, their children were the impetus for them moving into residential care; participants described moving to live closer to their children, and primarily described the relationships with their children as supportive. Participants received assistance with groceries, medications, and other errands from their children. Children also provided social contact and often took participants out for dinner or other social activities. Participants did, at times, describe relinquishing autonomy (e.g. moving out of their own home, giving up their car) at the request of their children. Participants also lamented that they [did not accept well the shift in role responsibilities] were not needed by their children in the way they were previously. The top code co-occurrence for autonomy was as illustrated in Figure 4 below. Decision making and control was reported together; transitions were paired with loss, children, family and friends;



self-management was paired with medication; transportation was paired with friends and children and volunteering was paired with community

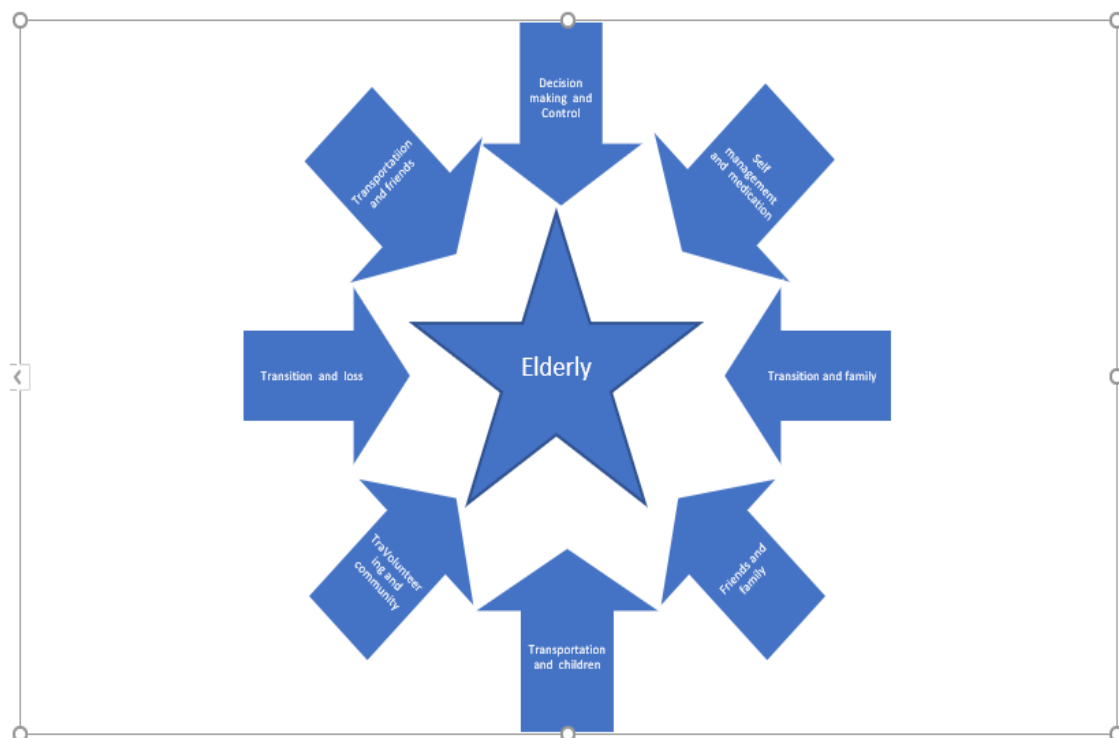


Figure 4 Top code co-occurrence

The decision making was not always of what to do, but the sacrifice made, according to participant speaking in relevance to transportation, “I try to limit that to the important places, like church or going to ...I went yesterday to visit a friend of mine over in a home, a group home, excuse me over in (town), I went over and visited her yesterday. I forego church, because it would cost \$7 or something to go to church, and [additional] \$10 to [town], so I just couldn’t go.” Another lamented about transition and loss, “I had a really wonderful dog and I could not bring him. I dropped the lab dog anyway. When I moved, ... I had him for 10 years. I never intended to ever ... give him up, ...my daughter insisted that I needed to do that.” The journaling prompted by three open ended questions yielded similar results as that seen in the home. The in-home observations indicated that the majority of help were required for arranging social activities, shopping, medication use, exercising and bathing.

## Discussion

In the voice of the elders the interpretation is that future generations play a key role in what happens to the elderly, and service design will have to capitalize on this vital link. One must consider that the relationship of children to elderly is crucial to the health and well-being of the seniors. This was a homogenous group and with the exception of age and well-being status, the latter attributes were not measure but implied from our visual observations and participant conversations, the group lacked diversity. There were no men in the participant group although men lived in the residence. This was not uncommon a finding as more women than men tend to engage in qualitative research and furthermore, women live longer than men and may find the benefits of improving self-care more appealing. Through this triangulated measure of autonomy, the research team felt there is enough support of the

hypothesis and evidence to move to the next phase of designing a prototype. The design ideas will be iterated and tested by diverse models used in a service design approach, such as territory map, stakeholder map, perception model, market analysis, customer journey, product-service system model, etcetera. The final prototype will be an experience scenario and a service blueprint as a pilot for a working service system that can be validated in future research.

## Conclusion

The focus of care for elders is transitioning between care environments and maintaining the elderly's autonomy wherever possible is most beneficial. This is economically beneficial for the patients, and also improves the quality of service from care providers (Mynatt and Rogers, 2000; Hellström and Hallberg, 2001; Navaie-Waliser, et al., 2004). This change aligns with the recent "sharing economy" that provides better sense of agency to individuals by decentralizing the locus of care from a central organization to service co-producers at the nodes of the network (Lessig, 2008; Kim, 2015). Clients who live alone with pre-existing medical illness pose a challenge in the management and coordination of care. More critical is the client whose first entry into the health system is secondary to a critical illness event. Safety calls, wellness calls, arrangement of social services, accessing their residence, and mobilization of medical specialty takes on significant relevance for the patient who may lose their sense of independence rather quickly. When the elderly can continue to manage their care with the help of well-designed services and can orchestrate that input into decision making, health outcomes are reportedly better.

At the center of the service system, patients and caregivers are empowered to personalize their options and pathways by co-designing healthcare service with the help of information technology. In order to develop the digital and human capability of the service system, a human-centered service design approach is recommended and planning should engage a variety of stakeholders including elders and their children to determine prototype usability and feasibility. The growing population of aging adults who live alone raises health, safety, cost and resource concerns for the local governments and health care organizations. Our findings on the meaning of, and conceptual framing of autonomy in elders is consistent with findings in the literature. Our research contributes to the resolution of the emerging social problem of dependency among elders living in residential settings. It offers theoretical and practical implications for designing service, as well as serving as a case study of the growing field of patient-centered multidisciplinary research.

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# Digital Methods for service design. Experimenting with data-driven frameworks

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## Abstract

From logs and information left in online spaces to data points self-generated by connected devices, digital traces have become more and more diffused over the past years. Along with some big-data approaches, Digital Methods of research - treating the actual content of users' manifestation online (i.e. tweets, Instagram pictures, comments) - offer the opportunity to better understand people and behaviours through their online activities. This paper investigates how Digital Methods can be repurposed as a full-fledged approach for the Service Design practice, by offering a method to outline service design frameworks from a corpus of web data. These quantitative methods, in combination with the traditional qualitative ethnographic approaches, leverage the continuous exchange of information that is happening in the digital space and suggest the possibility to automate parts of the data collection and analysis processes in support of service design activities. Grafting on several case studies - we will explain how Digital Methods could be used to identify and describe a set of personas by extracting and interpreting data from their online activities, and we will inquire into the application of the same methodological approach to map other frameworks - such as experience journeys or system maps - that are critical to Service Design.

**KEYWORDS:** service design, digital methods, personas, service design tools

## 1.Design disciplines in transition

In the last two decades, we are acknowledging an entire disciplinary field experimenting with new “ways of thinking and doing” (Manzini 2016) in the face of growing environmental,

technical and political issues in our society (Cross 2011; Ehn et al. 2014). Using design to address those type of challenges is now a global phenomenon and is raising important questions around design itself as the discipline seeks to make sense of its new role in the world (Yee et al. 2013). The Service Design practice is playing an important role in this transition by offering an approach that helps entire organizations shift towards a user-centred or customer-centred model, and transform the way they offer their services as well as the way they operate.

The design practice fosters a deep understanding of people and communities to analyse the continuously evolving context, but also need to consider that those communities are place-based and globally-connected, in a continuous exchange of technology, information and culture. On one hand this requires to expand the tools and techniques that support our understanding of users, systems and the constantly evolving context around them (Ostrom 2015). On the other hand, more germane fields of study of such complex socio-technical issues and problems (i.e. Science and Technology Studies, Political Sciences, Media Studies and Public Affairs) are experimenting new methodologies fitting into the so called digital-turn, expanding the notion of design research to the online domain. Research approaches based on the digital traces left over the Web and conducted in the framework of digital (Rogers 2009) and qualitative-quantitative methods (Venturini & Latour 2009) are opening the possibility to collect and analyse a wealth of data to observe and describe such complex environments. The hypothesis of this paper is that a promising way to cross these two tendencies is to continue and reinforce the circulation of approaches and methods between Design and Social Sciences, re-imagining the use of digital data and methods in specific, controversial and complex Design Research and Service Design contexts.

## 2. The evolution of Service Design frameworks

The design of new services is an activity that should be able to link the techno-productive dimension (What is the realm of the possible?) to the social (What are the explicit areas of demand and what the latent ones?) and cultural dimension (Manzini, 1993). This definition given by Manzini at the start of the scientific debate around service design suggested that the methodological approach of industrial designers should have been expanded in order to embrace the possibility of designing services (Morelli, 2002). The new practice was asking designers to deal with an intangible subject matter and a constant need of engaging other stakeholders in the process: it was not immediately clear what techniques could have better supported those purposes and several tools have been tried and borrowed from Social Science, HCI Marketing and Business Management (Tassi, 2008).

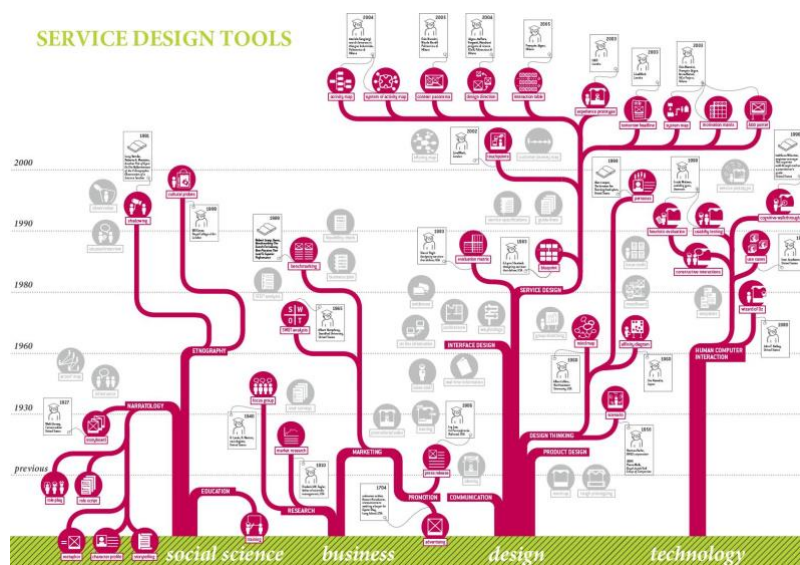


Figure 1 – The origin of service design tools

In the years, we saw a gradual convergence around a set of frameworks that have become essential assets for design practitioners, such as *human archetypes* or *personas* to represent human behaviours, *user journey maps* to describe the experience of interacting with a service, or *system* and *ecosystem maps* to describe the wider context and what the different players exchange in the service delivery. These types of Service Design frameworks have helped bringing the service design and user-centred approach to organizations, and have become an essential component of systemic transformation processes. However, the expansion of the design scope and context of action is raising some new methodological questions around methods and tools. The existing frameworks are mostly relying on a qualitative approach to describe users, experiences and systems - but if design is transitioning to focusing on a local-based globally-connected community in continuous exchange of information, values and culture (Tonkinwise, 2015), we could consider to better integrate data coming from other relevant sources available nowadays, and embrace that evolving context and dimension with a mixed of quantitative and qualitative approaches. Furthermore, we could also look at a partial automation of the data collection and exploration processes to provide new ways to efficiently observe specific behaviours over time and reflect on their constant evolution, through self-generated frameworks.

### 3. The opportunity to work with Digital Methods

We argue that using digital data and analysing them both qualitatively and quantitatively can be extremely useful in the complex social, technical and economic contexts where design is called to intervene. Proving this hypothesis requires to address different challenges facing design theory and practice (The Design Collaborative 2014): How to cope with a heterogeneous and conflicting spectrum of values and interests? How to collaborate with other disciplines? How to stabilise specific research methods and protocols? How to test them in large scale empirical experiments? We will try to tackle the latter two questions further in the article, by drowning on the theories and practices of Digital Methods of research (Rogers 2009, 2013).

Digital Methods exploit the wide range of traces that are left on the Web by different users, leveraging natively digital objects such as hyperlinks, tags, likes, tweets, URLs. Digital methods foster a social research approach, taking advantage of the empirical capacities embedded in online activities (Schneider & Foot 2004) with their unique dynamic nature - a mixture of ephemeral and permanent elements - (Hewson 2003).

Digital Methods differ from the research programs focused on big-data. The emphasis of Digital Methods is not in the magnitude of digital data analysed but in the critical affordances deployed by the data-acquisition protocol. Digital Methods protocols are deriving significant findings from relatively small and ad-hoc designed data-sets (Marres and Weltevrede 2013). By following a series of iterative steps and refinement procedures, the final formatted data are carved out of informational disarrays and unformed masses of online digital objects.

## 4. Data-Driven Personas case studies

To propose an example of fertile synergy between Service Design and Digital Methods and set the ground for a replicable empirical methodology, a full-scale test has been conducted by focusing on one specific design framework. The initial hypothesis for this research is that it is possible to understand the behaviours, needs and expectations of the users we are designing for by collecting and studying their online traces from a variety of sources. Distilling relevant information out of these online traces can lead to the identification of clusters of users to be then described as *personas*.

### 4a. The process of distilling Data-Driven Personas

The Data-Driven Personas method could be summarised into four macro-phases (FIG. 2).

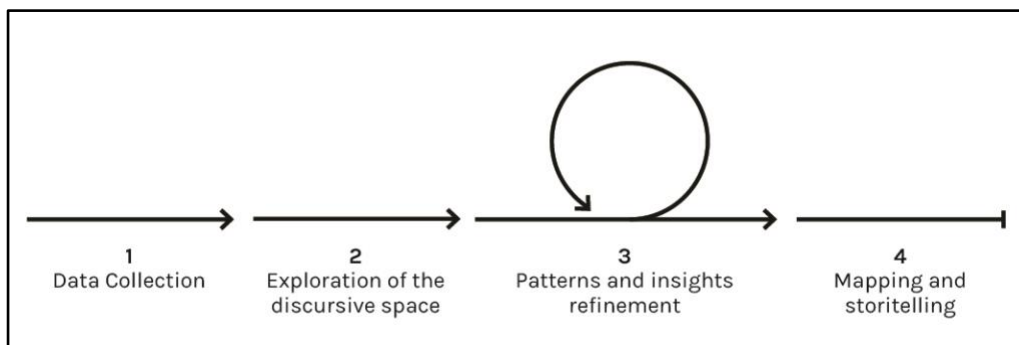


Figure 2 – The four steps of Data-Driven Personas

1. **Data collection:** aims at defining the nature and scope of the data harvested as well as their limitations, by defining the research protocol used to generate the corpus of data. Before the harvest starts, a deep reflection is required concerning what data could be relevant for the exploration and when they should be collected. Similarly, to the moment in which service designers and researchers craft a research plan to set up qualitative interviews with users or observation sessions, the first step of this process is the identification of a relevant space in the online context where users are discussing a certain topic. A deep understanding of the bias induced by the kind of user traces (e.g. hyperlinks, tags and hashtags, threads, ranks or edits) and by the kind of platforms that are offering them (e.g. Facebook, Twitter, Wikipedia, blogging platform, search engines) is needed. According to the specific theme and objective of the exploration, the protocol could rely on observing how people generally talk about a topic on a specific social network, versus look at search results in the existing engines. The platform selected will provide an initial image of emerging personas, that could be then validated in a second moment by investigating the same debates on a different platform or conducting qualitative ethnographic studies.

2. **Exploration of the discursive space:** aims at finding an entry point to analyse the investigated topic, displaying the constellation of debates emerged from the collected data, and highlight research insights and patterns. The corpus of data extracted from the web is visualised in order to get a synoptic view on the issue under analysis and identify the main components. Similarly, to the synthesis moment in which service designers or researchers start mapping their data point and insights in order to quickly identify affinities and patterns, this visualisation is aimed at providing an overview of all the data points collected, and start exploring them.
3. **Patterns and insights refinement:** aims at iterating on the emerging clusters of information in order to enrich their understanding and further detail the research insights. While the exploration of the discursive space allows to quickly highlight the most relevant topics and clusters composing a complex issue, through a deeper analysis it is possible to closely identify the cohesive groups of users and needs behind those clusters. To achieve this objective, it is necessary to detect some distinctive features characterizing each cluster, by analysing the verbal space or visual imagery that are associated to their debates, and eventually expand the field of analysis to the broader verbal space and visual imagery that characterize the profiles of each user in that cluster. Moving from clusters to individual users help validating all the assumptions around the type of people and behaviours populating each cluster, and better understand the emerging *personas*.
4. **Mapping and storytelling:** aims at outlining the complete description of each *persona*, making use of the most relevant qualitative and quantitative aspects related to the data emerged during the research process. Vivid descriptions of user types enable to bring fictional user profiles to life (Cooper, 1998; Grudin & Pruitt, 2003) and - as regards to Data-Driven Personas - this can be done by using the data generated by users during their online activities. An advantage of the Data-Driven method is that researchers can build the profiles in a semi-automatic way by using existing information to narrate the various aspects of the user profile.



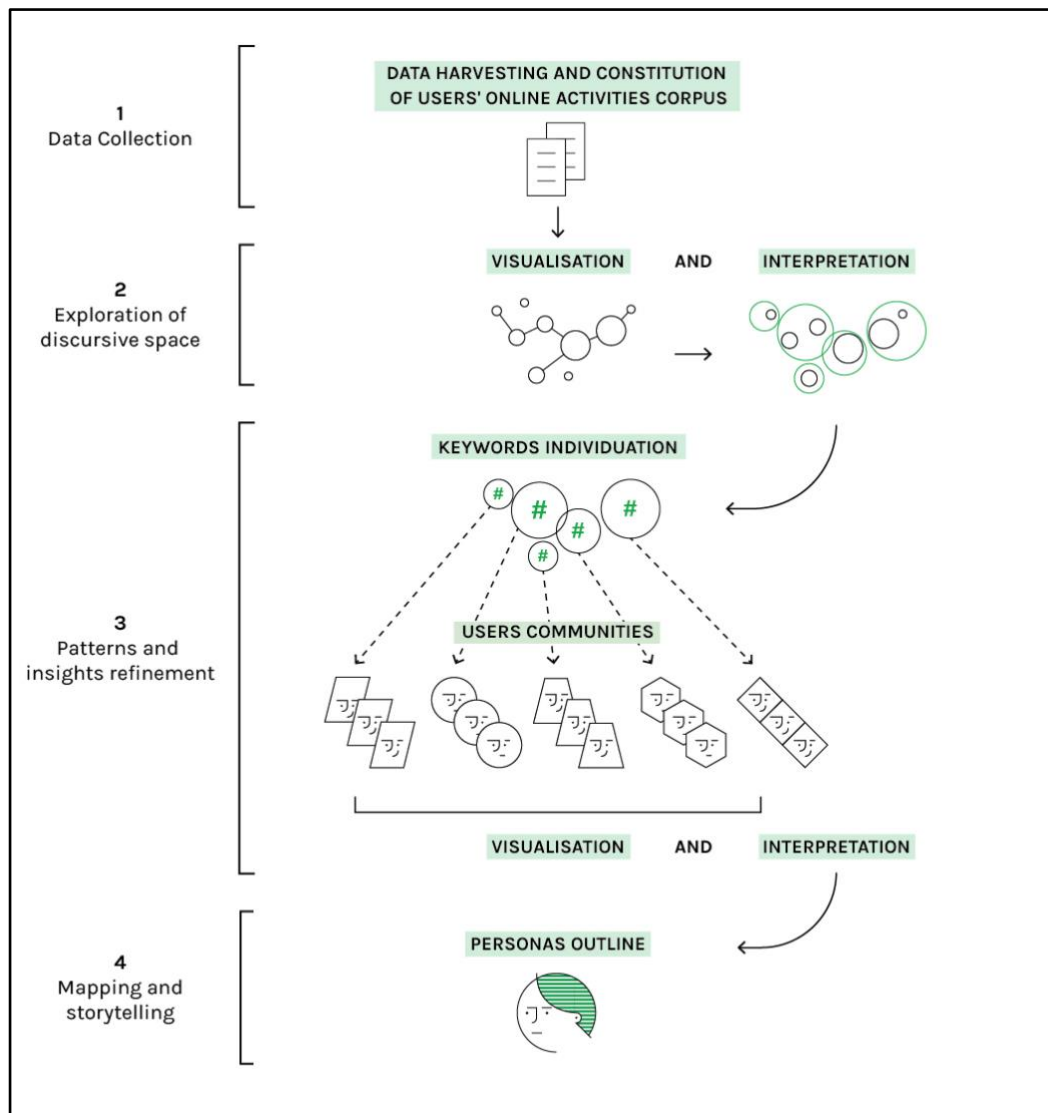


Figure 3 – A representation of the process used to distill Data-Driven Personas

#### 4b. Case Study: Naturpradi

NATURPRADI is a research project aimed at observing and describing the effects of the many initiatives endorsed by the Paris municipality to revegetate the city. These initiatives are trying to produce smart solutions to a growing range of issues created by urban growth. Nevertheless, there is no agreement on the imaginaries and technical practices that should be included into this new urban nature (Gandy 2006). To observe, monitor and, eventually, produce elements of reflections for future urban policies, the NATURPRADI project is mapping the symbolic and material elements of the urban nature debate (Ricci et al. 2017). To achieve its objective, NATURPRADI started a Digital Method campaign by collecting digital-native content produced on Twitter. The online news and social networking platform has been chosen since it is broadly used by a variety of actors getting spontaneously organised around discussion topics by using hashtags (Burgess and Bruns 2015, Rogers 2013). The core of the NATURPRADI project is to investigate and elicit different viewpoints and perspectives on urban nature, how they are sustained by specific communities and populated by identifiable users. For this reason, NATURPRADI has provided the great opportunity to test a new process moving from user-generated content to personas, following the four-step process defined above.



## 1. Data Collection

After having chosen Twitter for collecting the manifestations of interest, the Streaming API<sup>1</sup> has been adopted to retrieve online data related to the topic of nature in Paris. This process requires to acknowledge and consciously embrace Twitter limitation<sup>2</sup>, specificity and embedded politics (Gillespie 2010; VanDijck 2013), as they are technically, rhetorically and culturally expressed (Gillespie 2014): only their clear understanding allows later on in the process to mitigate and validate the results of the research. Among the different approaches for Twitter corpora building (see Mayr and Weller 2017) it has been chosen one based on key expression query. Through a collaborative and participatory procedure among the members of the NATURPRADI consortium, a list of 158 expressions (FIG. 4) has been used to capture the tweets in which they were mentioned. To assure a territorial specificity to our corpus we queried only for French word. Furthermore, all the keywords were queried by adding the word “Paris”<sup>3</sup>.

agriculture - agricultures - agriculture biointensive - agriculture verticale - agroforesterie - agrosylviculture - alimentation proximité - #AMAP - aquaponie - arboriculture - arbre - arbre alignement - arbres alignements - arbre urbain - arbre\_remarquable - arbres - arbres urbains - arbres\_remarquables - arbuste - arbustes - architecture écologique - aromatique - aromatiques - association\_végétale - bande\_enherbée - biodiversité - biodiversité bâtiment - biodiversité jardin - biodynamique - biointensive - botanique - botaniques - cartographie végétation - chantier nature - compost - composts - compostage - compostages - conservation nature - corridor biologique - corridors biologiques - "coulée verte" - "coulées vertes" - développement - durable - éco-habitat - ecoagriculture - écocitoyenneté - écoconstruction - écologie urbaine - écologique - écologiques - écoquartier - écoquartiers - espace vert - espaces verts - ferme verticale - fermes verticales - fleurie - fleuries - flore des murs - floriculture - forêt - forêt urbaine - fragmentation écologique - fruitier - fruitière - fruitiers - génie écologique - génie\_écologique - gestion différenciée - graminée ornementale - "guerrilla gardening" - horticulture - horticulture urbaine - îlot - îlot chaleur - îlots chaleur - incroyables comestibles - infrastructure verte - jardin - jardins - jardin communautaire - jardins communautaires - jardin ouvrier - Jardin-forêt - jardinage - jardinage collectif - "jardin familial" - "jardins familiaux" - "jardin public" - "jardins publics" - "jardin sauvage" - "jardins sauvages" - jardinage urbain - jardins ouvriers - matrice écopaysagère - micro-agriculture - micro-ferme - micro-fermes - mur végétal - mur végétalisé - murs végétalisés - murs végétaux - naturalité - nature - observatoire paysage - patrimoine naturel - paysage urbain - paysages urbains - permaculture - plan climat-énergie territorial - plante - plante grimpante - "plante utile" - plantes - plantes grimpantes - polyculture - potager - potagère - potagères - potagers - prairie - prairies - prévégétalisation - "produit local" - "produits locaux" - alimentation proximité - renaturation - "réseau écologique" - "réseaux écologiques" - résilience écologique - soutenable - soutenables - stratégie biodiversité - sylviculture - système d'information sur la nature et les paysages - terrasse végétalisée - terrasses végétalisées - toit-terrasse - toits-terrasses - toiture - toitures - trame verte - trame\_verte - trames vertes - végétale - végétales - végétalisation - végétalise - végétalises - végétalisée - végétalisées - végétation - verger - vivrière - grenelle environnement - effet serre

Figure 4 – The set of keywords used for the data collection on Twitter

## 2. Data Exploration

The data collected were used to generate a series of graphs showing how different users are connected to each other and the specific words used in the tweets. In the map, we can recognize clusters of conversations, such as the central institutional cluster featuring linked to the municipality (@Paris, @Anne\_Hidalgo, @PKOMITES and @vegetalisons). Thanks to a mixed qualitative-quantitative

<sup>1</sup> These API offers the possibility to retrieve only live data, imposing a bandwidth limitation coming into effect when the requested tweets exceed the 1% of the all traffic flowing in the platform.

<sup>2</sup> A limitation affecting Twitter based researches is linked to its representativeness (see Blank 2016). Although Twitter is widely used all across the world, its adoption rate changes accordingly to different social milieux and the way it is used may differ significantly from country to country. In the NATURPRADI project there is no assumption about the possible exact extension of the observed digital population to the general one.

<sup>3</sup> To assure that the final corpus would not been biased by tweets not related to Paris or to the urban nature, a further curatorial procedure has been applied. Through a custom and open-source software (the source code is available here: <https://github.com/medialab/catwalk>), every tweet has been read by the research team and evaluated in terms of its pertinence. This approach, distinguishes the NATURPRADI project from many other big data ones. Furthermore, the close reading of the tweets enabled us to have a constant overview of the state of the discussion, gaining a deep understanding of the dynamics of the issue. This aspect resulted to be extremely useful in the analysis and interpretation of the data.

interpretation of the graph, sustained by a visual analysis of the network, five key clusters can be identified (FIG. 5): *Technological Development*, *Urban-Agriculture*, *Co-design of Public nature*, *Ecological attitude* and *Relaxed Contemplation*.

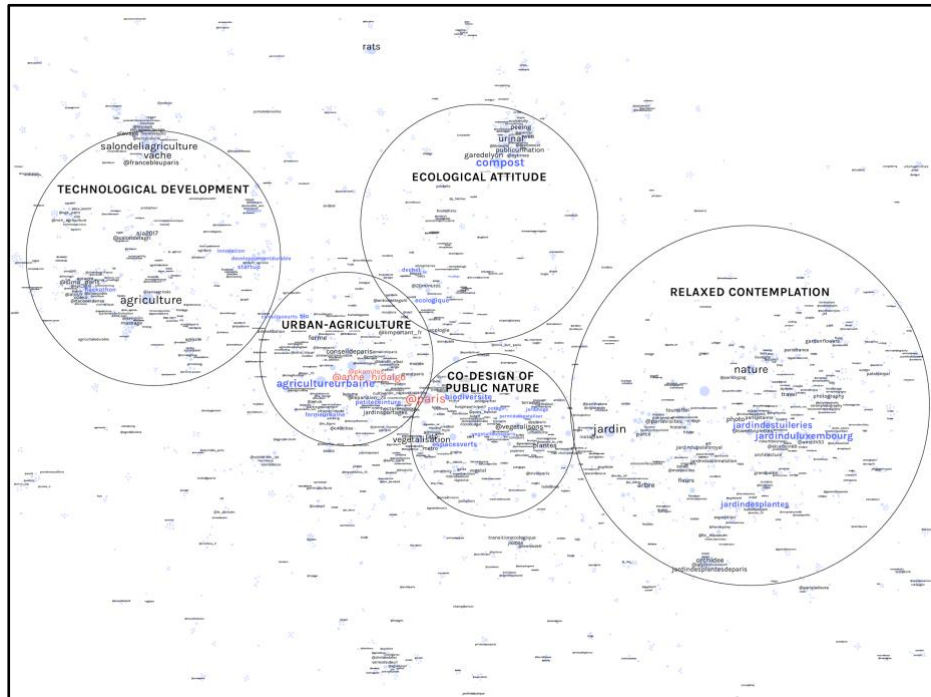


Figure 5 – The user-object networks

### 3. Clusters Refinement

For each cluster, a list of keyword has been produced to identify the users belonging to one or more of them. For example, a user is identified as part of the Ecological Attitude group whenever he or she used at least one of the *keywords* *compost*, *ecologique*, *dechets*. If that same user wrote any of the keywords related to the other clusters, she would also appear in those communities (Fig. 6). The so obtained corpus is then used to understand if, besides debating about the same topic, they also debate in a similar way.

Just like when the researcher carries out field investigations to collect more insights about how people live, the visualisation and interpretation of different aspects of their online activities allows to progressively validate the cohesion of communities. This iterative process consists in visualising the multiple dimension of the corpus (e.g. images, texts, links) and then interpreting the results to understand if there are similar groups which can be merged together and considered as a unique behaviour or, on the contrary, if inside a cluster more than one distinctive behaviour can be discerned. In our test, we have focused on the two main elements of a tweet, its textual content and the possible images attached to it.

SELECTED KEYWORDS	
<b>A. Technological development:</b>	startup, innovation, developpementdurable, hackaton
<b>B. Urban-agriculture:</b>	agricultureurbaine, fermeurbaine, petiteceinture, circuitscourts, bio
<b>C. Co-design of public nature:</b>	biodiversite, espacesverts, vegetalisonsparis, potager, jardinage, permidevegetaliser
<b>D. Ecological attitude:</b>	compost, ecologique, dechet, tri
<b>E. Relaxed contemplation:</b>	jardindestuilleries, jardinduluxembourg, jardindesplantes

Figure 6 - The selected keywords for each cluster used to retrieve the communities of users which used these words in their tweets

***Digging into the textual sphere:*** the visualisation of the textual sphere shows the 150 most recurrent terms for each group, sorted from the most to the least frequent (Fig. 7). The size of each bubble is proportional to the frequency of the word. The colour of the bubbles describes how much each word is shared with other clusters: the lightest the colour, the most shared the word; the darkest the colour, the least share the word - which means that it is uniquely used by a specific community. While the most used words by the *Technological development*, *Urban agriculture* and *Co-design of public nature* have proved to be in accordance with the initial depiction of these communities, the interpretation of this visualization lead to an interesting observation concerning the *Relaxed contemplation* and the *Ecological attitude* communities. In the *Relaxed contemplation* cluster, the names of several famous French photographers occurred among the most frequent words: this could suggest the presence of a smaller community within that cluster, with an interest in photography and in the historic representation of the city. Whereas the *Ecological attitude* community seemed mostly linked to the recent news of the urinal-vases installed in Paris by the municipality, and their textual sphere appeared similar to the vocabulary used by the *Urban-agriculture* community: this suggested that the two clusters share parts of same debates and are likely representations of the same attitude.

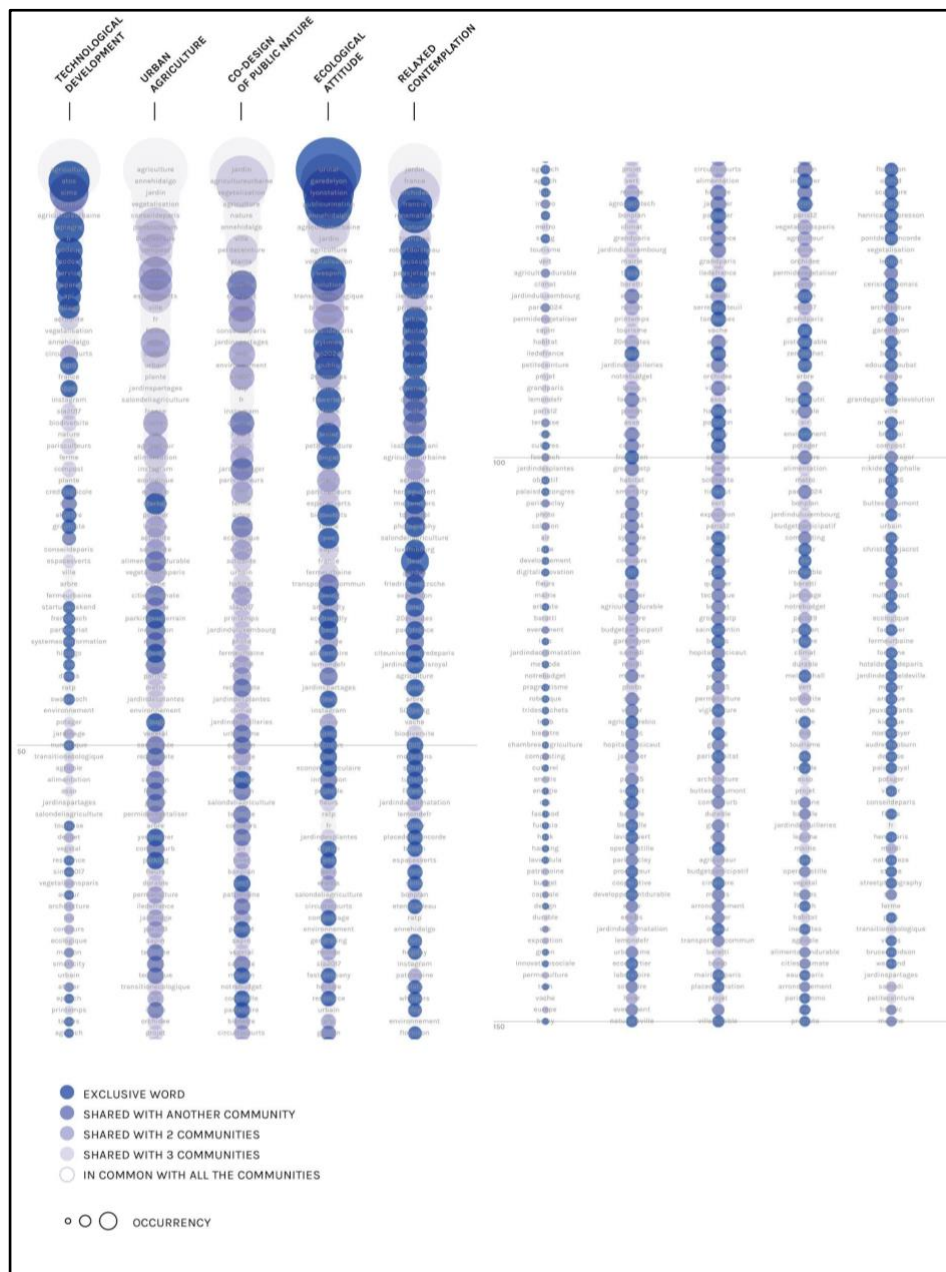


Figure 7 – The textual sphere visualisation shows the 150 most used terms for each community

**Digging into the visual sphere:** analysing the images that are produced and shared by the users enables a quick introduction to the imagery of each cluster. For example, by interpreting the visual elements, we understood that the *Relaxed contemplation* cluster mostly shares content about the most famous Parisian architectures and green areas (Fig. 8). In the lower part of the network there is a significant group of historic images, which corroborates the presence of a sub-community of *Nostalgic users*. Repeating the process for the other clusters, the visual sphere analysis helps to understand the cohesion of the identified groups (Fig. 9-12).

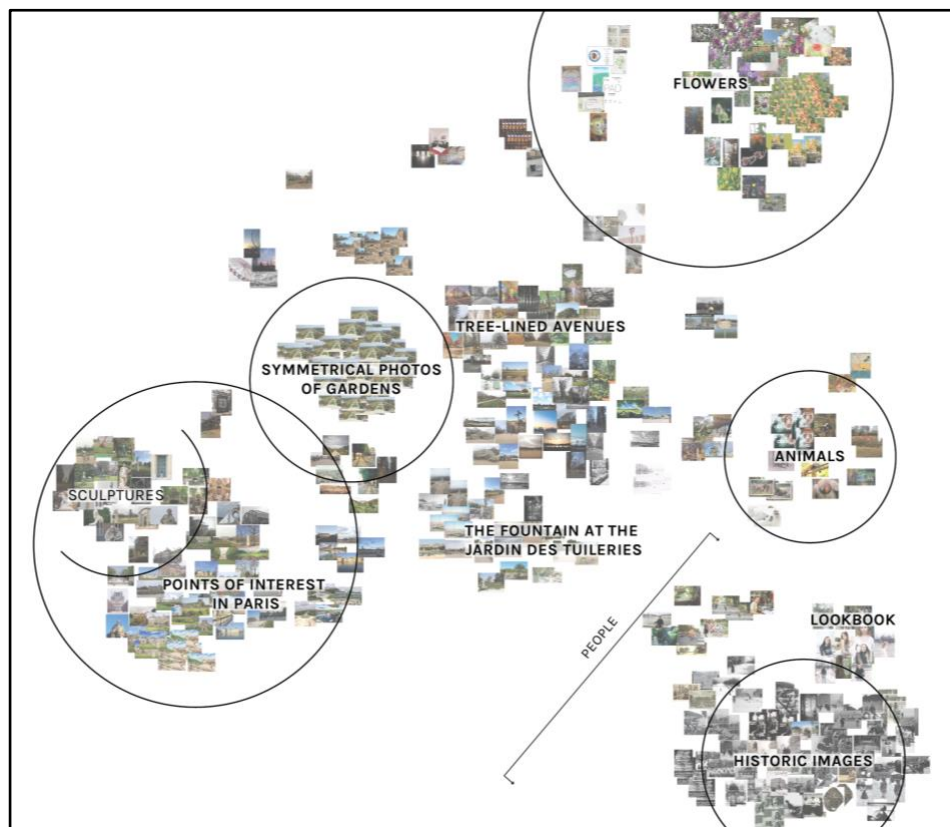


Figure 8 – The visual sphere of the “Relaxed contemplation” community

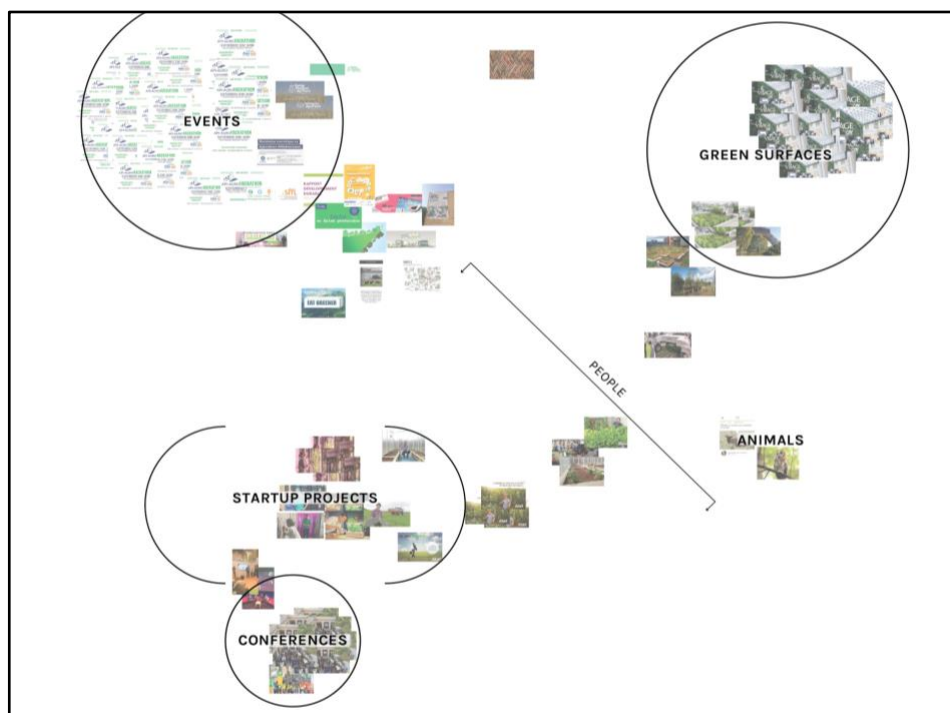


Figure 9 – The visual sphere of the “Technological development” community

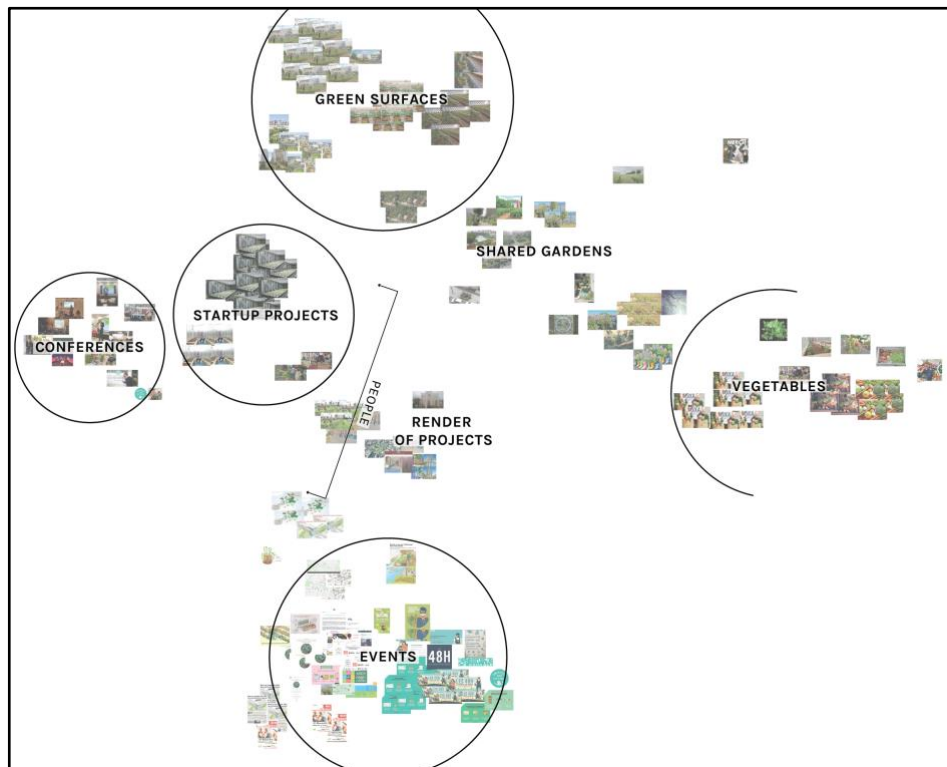


Figure 10 – The visual sphere of the “Urban-agriculture” community

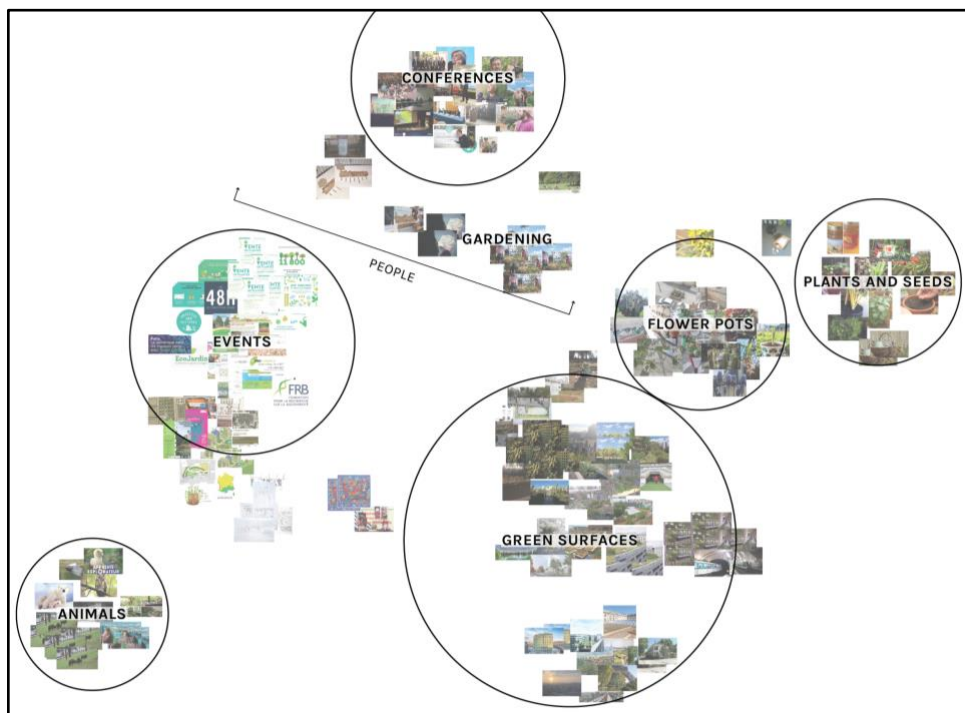


Figure 11 – The visual sphere of the “Co-design of public nature” community



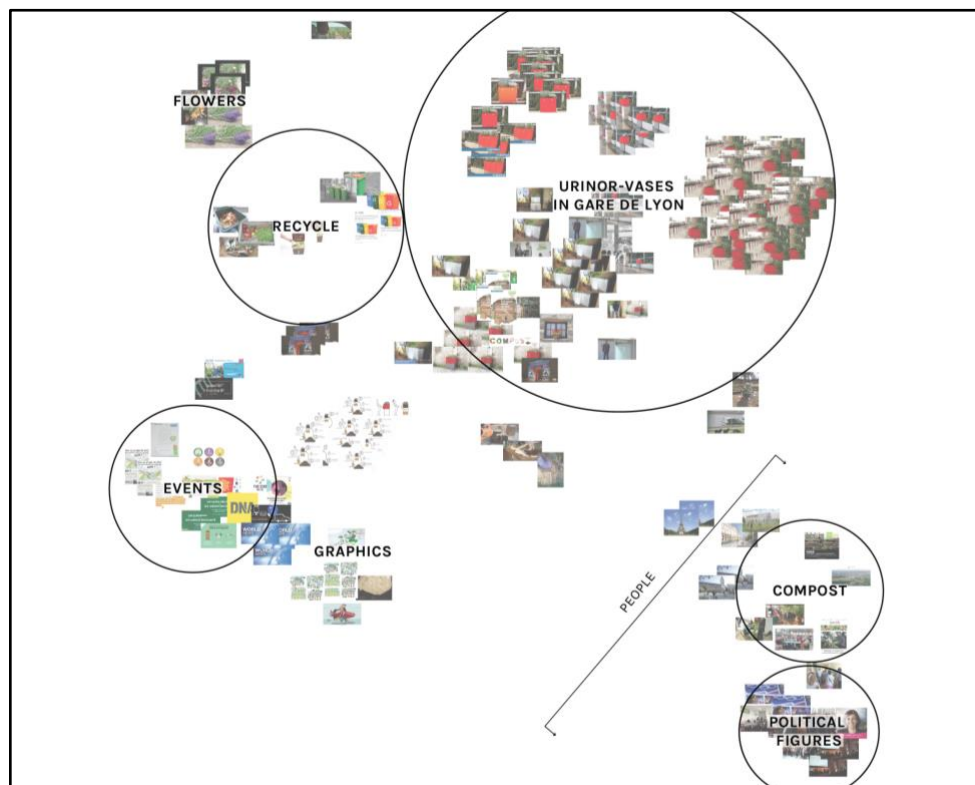


Figure 12 – The visual sphere of the “Ecological attitude” community

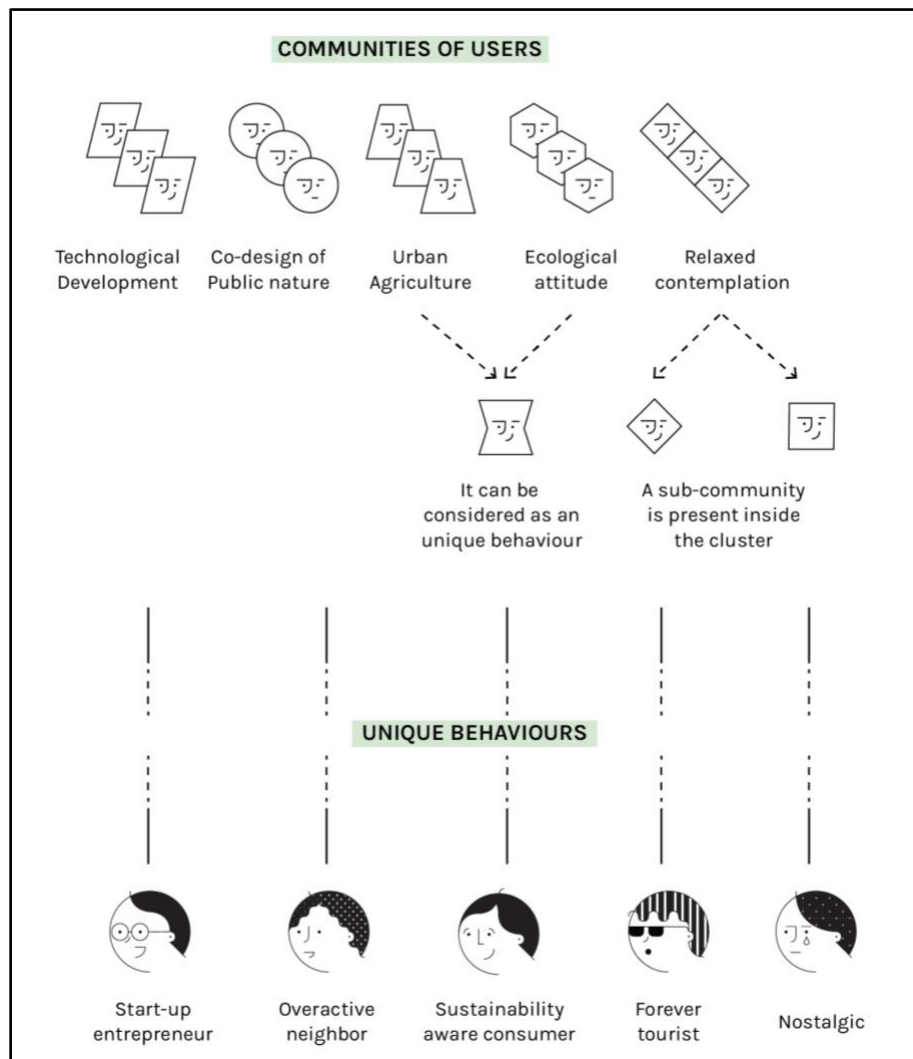


Figure 13 – The analysis of the textual and visual imagery of each community allows to individuate the unique behaviours of the research

#### 4. Mapping and Storytelling

Finally, each persona has been outlined with the data produced by the group of users from whom that personas was created. The narration starts with the picture and the name randomly picked from the real users belonging to that persona. The keywords which initially brought to the definition of the community and then of the relative persona are listed as the most representative hashtags. A tweet has been selected from the data corpus, in order to represent the usual way that persona would talk about urban nature in Paris (the persona's quote or *motto*). The Twitter descriptions of users are used to narrate how each persona would describe themselves: a bubble chart visualises the most occurred terms. The most recurring images of each personas are also part of the narration, showing their visual imagery. The connections among different personas are represented by a diagram showing how many users are unique to that personas and how many are shared with other personas. Each persona can be also located on the initial map of the overall discourse, telling us if - in their relationship with nature - they show a more contemplator or expert approach. Finally, their tweets activity over time can help understand the engagement with the topic (Fig. 14-18). The final personas could be used as a starting point to imagine different services that the municipality of Paris could propose - related to nature - or different needs concerning the existing



**START-UP ENTREPRENEUR**

@Beatriceheraud

#innovation #hackathon  
#start-up #developpementdurable

"Le rôle des #startup important dans le développement écologique de Paris #HackingParis #WS\_HACKING"

"The role of the #startup is important in the ecological development of Paris #HackingParis #WS\_HACKING"

RELATION WITH NATURE  
CONTEMPLATOR EXPERT

RELATIONS BETWEEN PERSONAS  
NOSTALGIC START-UP ENTREPRENEUR SUSTAINABILITY-AWARE CONSUMER  
FOREVER TOURIST OVERACTIVE NEIGHBOR

number of unique users  
tweets in continuum

MOST SHARED IMAGES

MOST RETWEETED TWEET

"Le village by CA Paris va sélectionner 12 startups dont l'activité est au service du développement durable..."  
"The village by CA Paris will select 12 startups whose activity is focused on sustainable development..."

ACTIVITY OVER TIME

15 MARCH

DESCRIPTION

PARIS EMPLOI NEWS PROJETS PASSIONNE COMMUNICATION POLITIQUE  
FOOD RECHERCHE MARKETING ENGAGÉ RSE RESPONSABLE FORMATION  
SOCIAL MEDIA SOCIAL SERVICES GROUPE FRANCE COMPTES  
CEO SOLUTIONS INNOVATION CREDIT AGRICULTURE  
STARTUP INTERNATIONAL DATA ATOS AGRICOLE AGRICULTEURS CENTRE  
OFFICIEL TECH IOT DESIGN ATOSFR BUSINESS DIRECTEUR  
NUMERIQUE TWEETS JOURNALISTE DEVELOPPEMENT DIGITAL  
ENTREPRENEUR WEB MANAGER MODE MEDIA  
EXPERT ENVIRONNEMENT MONDE

Figure 14 – Description of the “Start-up entrepreneur” persona

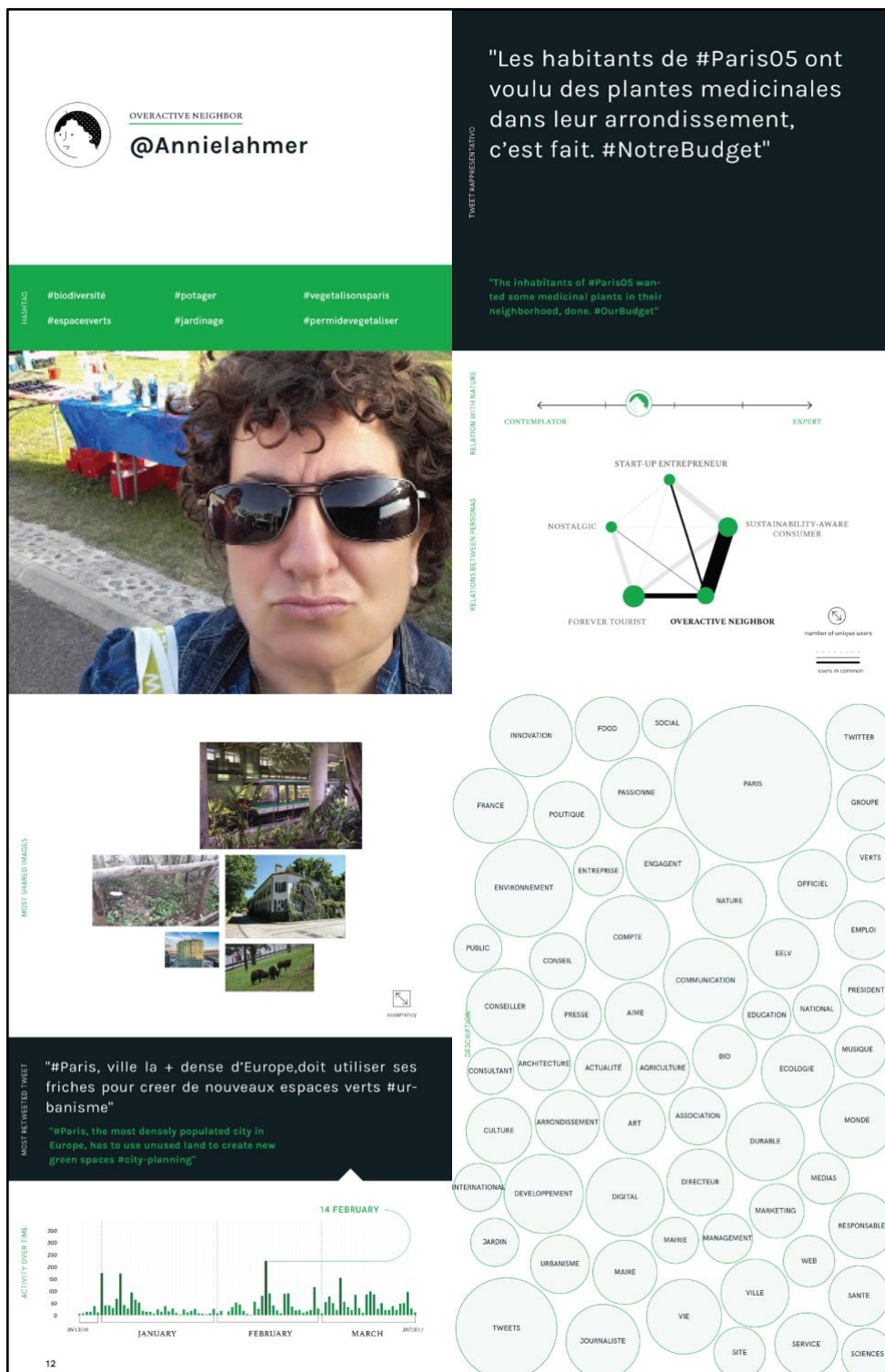


Figure 15 — Description of the “Overactive neighbor” persona





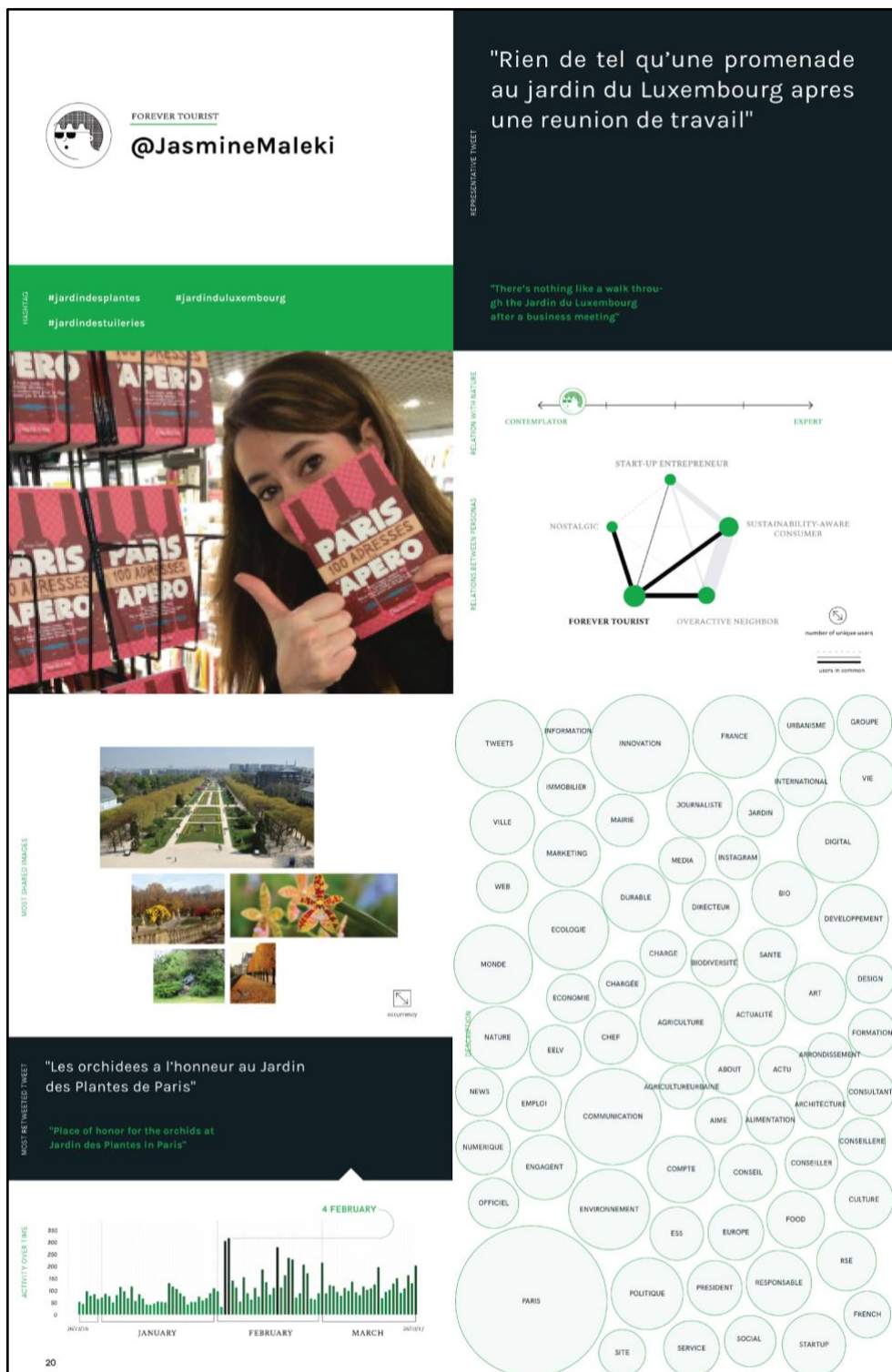


Figure 17 – Description of the “Forever tourist” persona

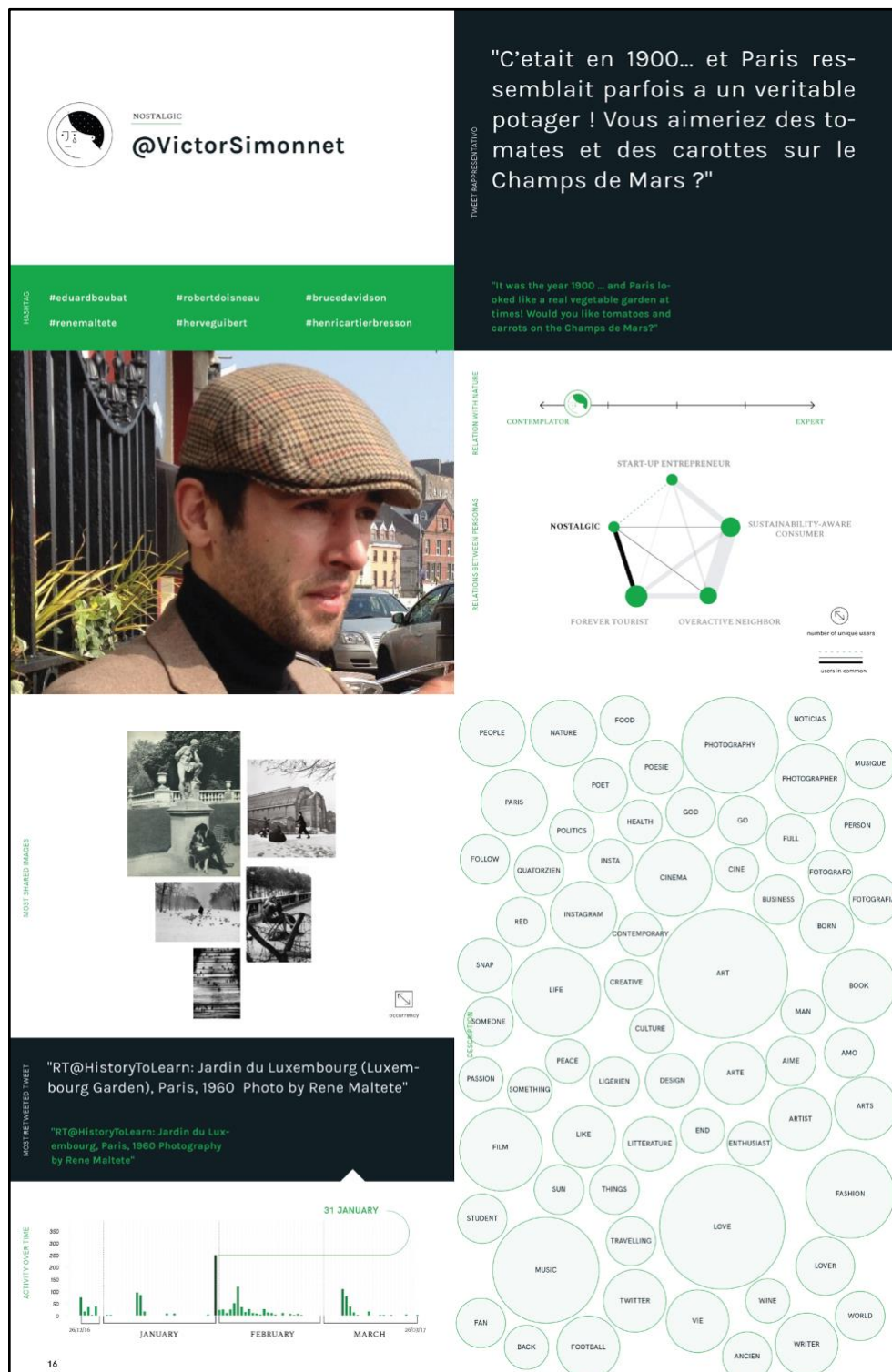


Figure 18 – Description of the “Nostalgic” persona

#### 4c. Case Study: Co-design workshop on gender violence

In the context of the World Usability Day hosted in Rome in November 2017, the same approach piloted during the NATURPRADI project has been adopted to facilitate a collaborative workshop around the topic of Data-Driven Personas. The research question we asked ourselves was how we could map the different attitudes towards the topic of gender violence.

## 1) Data Collection

As for the NATURPRADI project, Twitter was identified as the appropriate space for the analysis since in the Italian context it collects a lot of opinions on this topic, in relationship to specific news and public debates. A set of keywords were identified (FIG. 19) in order to obtain the data corpus, following exactly the same strategy adopted during the previous experimentation.

violenza sessuale - violenza di genere - violenza sulle donne - #nonviolenza - #nonunadimeno - #adessobasta - #365giorniconledonne - #orabasta - #liberedi - #riprendiamocilalibertà

Figure 19 – The set of keywords used for the data collection on Twitter

## 2) Data Exploration

The overall map representing the online discourse on Twitter was used as a starting point for the collaborative session. Participants were asked to look at the map and highlight the key clusters they could recognize in the visualization, based on the affinity of themes and keywords used to talk about gender violence. The clusters covered a wide range of perspectives (Fig. 20):

- A. **Activist community**, featuring the organizations and associations that belong to the Italian feminist movement.
- B. **Short-term debate**, linked to single episodes coming out in the news.
- C. **Anti-migrant voices**, where the vocabulary associated to gender violence is blended with racism and hanger against foreigners.
- D. **Social and ethical reflections**, a generic variety of intellectual conversations around the topic.
- E. **Institutional advocacy**, giving space to the institutions that are trying to tackle violence through education programs.

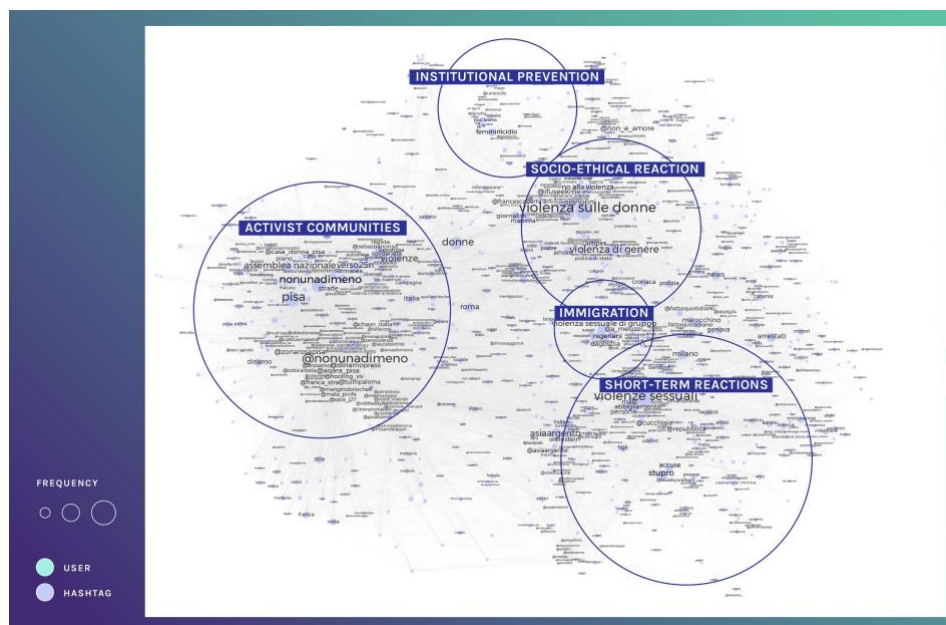


Figure 20 – The tweets user-object networks

### 3) Cluster Refinement

In a second moment, participants were asked to filter a cluster of reference and start digging into it. By qualitatively reading some of the tweets and checking some of the relevant Twitter profiles emerging from that specific debate, they could understand if the cluster was really sharing the same approach or if it was hiding different nuances. Based on that they could further validate and characterize that persona (Fig. 21) with an identifying attribute and quote.

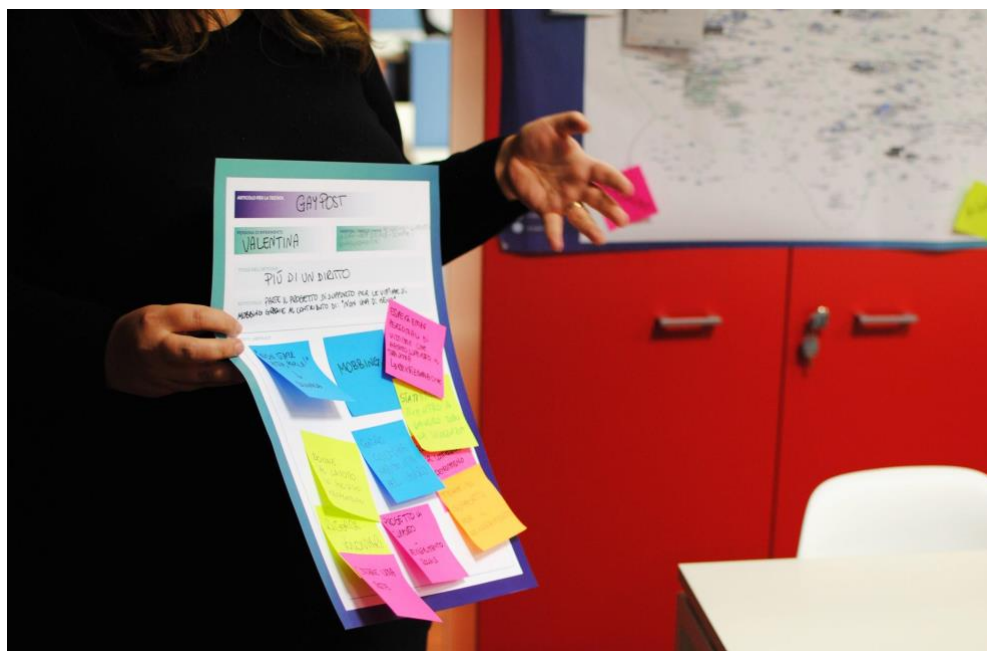


Figure 21 – A first description of the identified persona

### 4) Mapping and Storytelling

Each persona could be described by combining a set of automated information extracted from the corpus (e.g. a random image profile) and some qualitative information derived from the understanding developed by the team during the exercise (e.g. a qualitative description of the behaviour of that persona). The workshop produced the description of seven different personas (Fig. 22-23).





#### 4d. Case Study: Glamour

The initial corpus of data used to distil the Data-Driven Personas doesn't necessarily need to come from social networks. Web analytics could provide interesting insights around user behaviours, as well as a dataset built ad hoc through a quantitative survey or diary study. In this last case study, we worked with the Glamour team of Condé Nast to setup a model aimed at observing user behaviours with a mixed qualitative/quantitative research approach. We first looked at their web analytics, which were showing clear patterns in terms of readers' engagement and reaction to the content offered by the online magazine, showing emerging clusters without giving evidence of the motivations and needs behind. Starting from those clusters, we distributed a dedicated diary study with the aim of collecting photos and



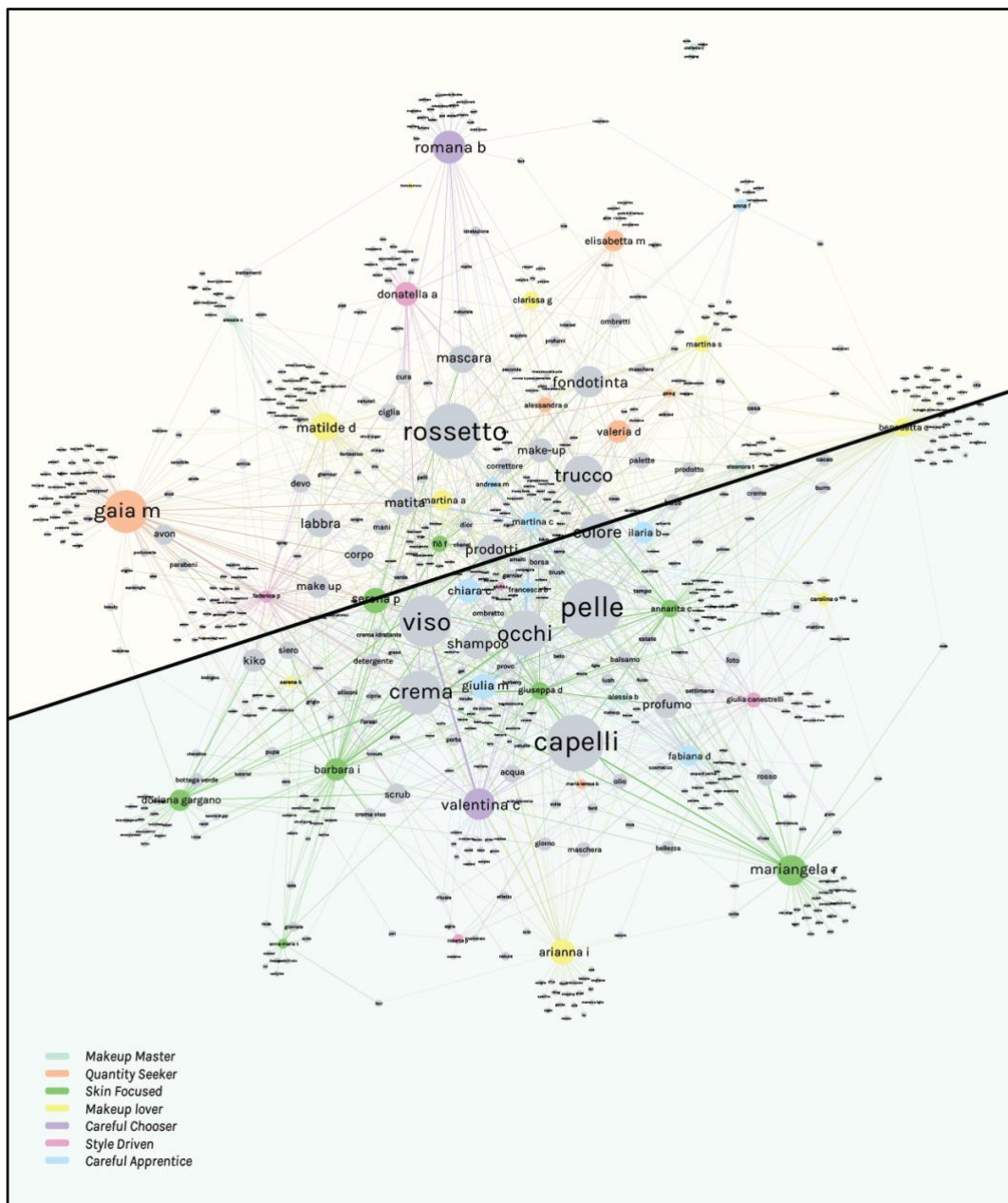
comments in answer to specific research questions, and use that material to look deeper into their behaviours.

### 1) **Data Collection**

The initial clusters derived from the web analytics helped recruit a sample of research participants (50 in total), with the objective to ask them to share their experiences, stories and desires through a digital diary. The diaries generated a large amount of information (photos and comments).

### 2) **Data Exploration**

The first step was analysing the comments: we mapped all the words used to describe make-up and self-care routines in two visualisations (Fig.24). By looking at that map, we see a clear distinction among the women who are more focused on the aesthetic side of beauty and those whom considered the topic as an intimate way of self-care. Furthermore, it was also possible to distinguish different group of users based on their use of a general or specific own vocabulary referring to the topic, and start elaborating the initial draft of personas.



### 3) Cluster Refinement

In a second moment we looked at all the images (1950 images sent by the participants) in order to understand if the clusters identified through the initial semantic maps were cohesive, and start understanding more about each of them (Fig. 25).

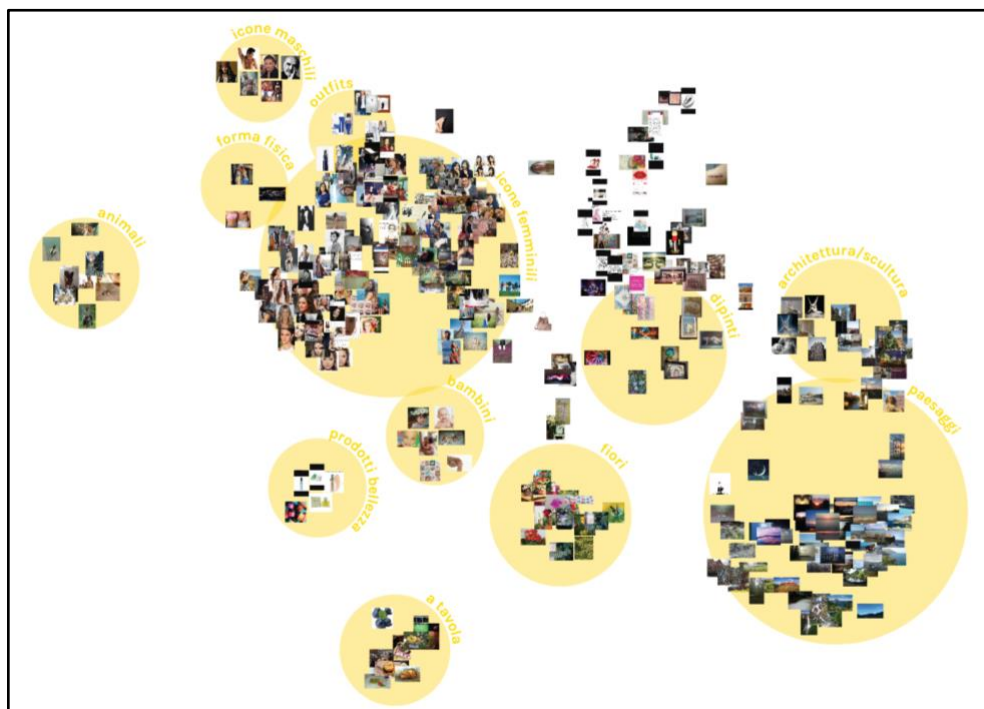


Figure 25 – The images produced by the users to represent their concept of beauty

#### 4) Mapping and Storytelling

The refinement exercise has led to the identification of seven main personas, who were described by extracting some of the images and quotes from the diary of each cluster (Fig. 26).

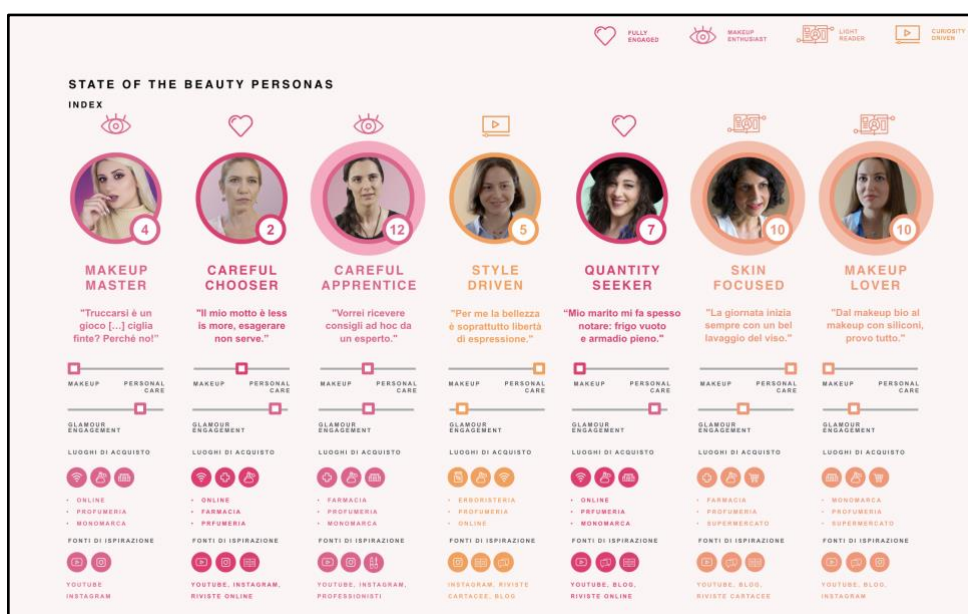


Figure 26 – The "State of Beauty" personas

At the very end of the process, a final round of individual interviews was conducted on a small selection of participants (one person per each type of persona). This approach suggests the possibility of an integration of Digital Methods into a more traditional ethnographic

research process. The final outcome was a set of personas as well as a replicable model that allows to bridge a quantitative and qualitative understanding, and to leverage web analytics to structure an efficient ethnographic field-work.

## 5. Limits and opportunities

The new Data-Driven personas method aims to expose how Digital Methods can be integrated into design practices, deploying new “techniques which communicate, interact, empathize and stimulate the people involved” (Giacomin, 2014). Digital Methods could allow to scale up the magnitude of data and information collected. The proposed approach offers significant advantages in terms of time and costs, if compared to traditional qualitative research and analysis techniques: it allows to quickly collect and analyse a wide dataset and develop key insights even before activating the field-research and start investing on it. Nevertheless, there are some activities in the process that shouldn't be underestimated, such as:

- **Data collection:** setting up the necessary infrastructure for collecting data might take some time. Depending on the scale of the data to be collected, simple solutions like storing it into spreadsheets or plain text files (i.e. CSV) might be not appropriate and the setup of a proper and efficient database might be required. Furthermore, the API provided by the digital platform, as well as the interface through which the data might be scraped, tend to change rapidly. This may affect the quality of the harvesting, or at least, require a continuous monitoring, tracking and adjustment of the collection procedures. Working with digital data means to respect the ever-changing privacy policies and terms of use of the platforms involved in the research. Along with the respect for these standards, an ethical reflection on how to handle personal identifiable information is always needed.
- **Data cleaning:** in some cases, sorting noise out of the stream of data collected can be done in a quick way (e.g. filtering out objects that are less frequently encountered, or conversely, the ones that are mentioned too much). In other cases, a careful reading of the collected data is necessary. Regardless the specific strategy adopted for reviewing and cleaning the dataset, a constant control of the data harvested is always necessary.
- **Data visualisation:** distilling information out of a dataset requires the use of visualisation techniques, libraries and software. Interactive visualisations are able to offer different views on the data through multiple and non-exclusive visual models, and they are extremely valuable in the first part of the process.
- **Data interpretation:** the insights and clusters that emerge during this type of analysis need to consider possible limitations and bias. Collecting data over social media, for example, implies to cope with the digital divide issue and with the different platform culture (e.g. the more or less marked predisposition to use hashtags) that might be present in different geographical location. The outcome of this type of analysis needs to be seen as part of a wider range of research and design thinking activities aimed at understanding the people and context of use.

Digital Methods need to be considered an opportunity in integration, and not in replacement, of current service design tools and techniques. For example, along the process of creating Data-Driven Personas, the researchers may use the emerging clusters as a way to define potential participants for a set of in-depth interviews. The interviews will provide

both a validation of the analyses carried out previously and, above all, add a deeper qualitative layer to the understanding of the different personas. Following this example, Data-Driven Personas can ease the preparation of a field-research, by raising important themes upfront and offering an alternative strategy to recruit research participants.

The Data-Driven Personas protocol is a first attempt to provide a sustainable and replicable approach to effectively apply Digital Methods to support the service design process. This protocol is applicable to all those cases where the research environment involves a community of users who drive a series of debates inside an online space. Other protocols could be explored in the future, investigating the possibility to derive other key Service Design frameworks - such as experience journeys and system maps - from the analysis of the online discourse. The expansion towards additional frameworks would require to think about spaces where to find that information, ways of clustering the data collected and strategies for refinement and visualization, by relying on a four-steps model similar to the one introduced and discussed in this paper.

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# Bridging design-driven and service innovation: Consonance and dissonance of meaning and value

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## Abstract

Conceptualization of meaning in design-driven innovation and value in service innovation, seem to be sharing some core characteristics that are essential but have not yet been integrated. Thus, this paper explores design-driven innovation and its conceptual relevance for service innovation within the framework of service-dominant logic (S-D logic) by examining interrelation between meaning and value. Design-driven innovation is defined as a strategic framework that enables radical innovation through change in meaning that emerges in interaction. Meaning as a concept is grounded in the human-centred design approach by Krippendorff (1989) who argued that people interact with artifacts because they make sense to them. On the other hand, S-D logic with its core concepts evolving around resource integration for value co-creation among multiple stakeholders, has become an increasingly important perspective to address complexities of service innovation. Also, S-D logic's concepts have found a common ground in theorizing about service design since value is seen as arising in use. Both meaning in design-driven and value in service innovation share some conceptual commonalities. By exploring and interrelating these two conceptual frameworks this paper aims to open new ways for understanding and operationalizing service innovation as well as evolve and strengthen the role of service design within it.

**KEYWORDS:** design-driven innovation, service innovation, meaning, value co-creation, S-D logic

## Introduction

Meaning in design has played an important role in understanding interaction and use of different artifacts due to its emerging, phenomenological and context-dependent nature. On the other hand, preoccupations of the nature and importance of value as arising in use and being phenomenological and context dependent has had an increasing relevance in service and management literature especially service-dominant logic (S-D logic). There seem to be

overlaps between meaning and value that have not yet been explored but could be relevant for understanding and operationalizing service innovation and leveraging the potential of service design within it.

Integrating design and management for innovation has resulted in a number of methodologies and frameworks, one of them being design-driven innovation. Design-driven innovation is gaining momentum and relevance in both design and management research, a strategic framework for achieving radical product innovation through the change in meaning (Verganti, 2008). This innovation framework integrates the notion of meaning from human-centred design literature (Krippendorff, 1989) to argue that change in meaning is a new radical innovation strategy different from both market-pull and technology-push (Norman & Verganti, 2014; Verganti, 2009). Design-driven innovation relies on organization's capabilities to innovate by changing the meaning of products where meaning is co-generated, context-dependent and emerges on both collective and personal level. Thus, the innovation of meaning is achieved through change in sociocultural models enabled by the firm's discourse with the network of professional stakeholders or key interpreters that can support it (*ibid.*). For example, Nintendo wii is often seen as an example of a product where meaning was changed from a game console to a platform for shared and interactive entertainment and is even applied as an aid in the healthcare sector (Verganti, 2008). However, design-driven innovation is still product and technology-oriented and predominantly researched within these contexts (Buganza et al., 2015; Rampino, 2011; Simoni et al., 2014; Verganti, 2003, 2009) while research focusing on specificities of service innovation is scarce (Takeyama et al., 2016). Nevertheless, meaning, as the main conceptual building block of design-driven innovation, brings forward interpretative qualities and understanding that for radical change one needs to actively interact with the network of stakeholders in an ongoing discourse and meaning co-generation. These aspects could be particularly relevant within the service-dominant logic (S-D logic) perspective on service innovation.

Service innovation has expanded the focus from an organization-driven stage in the new service development process to a more holistic and collaborative new value co-creation among many stakeholders, which is supported by the S-D logic framework. S-D logic, conceptually opposite to goods-dominant logic (G-D logic), posits that service is the basis of every exchange, and that based on provider's value propositions actors integrate their operant resources to co-create value (Vargo & Lusch, 2016). During the value co-creation, value-in-use emerges, which is always phenomenologically and idiosyncratically determined by the service beneficiary (*Ibid.*). S-D logic defines service innovation as the process of new value co-creation and resource recombination through meaningful value propositions (Lusch & Nambisan, 2015; Skålén et al., 2014). Thus, value co-creation is a key conceptual building block in S-D logic relevant for innovation. However, service innovation framed within S-D logic is sometimes difficult to operationalize both in terms of what constitutes innovation and how it occurs (Snyder et al., 2016).

Since some main concepts in design-driven innovation and S-D logic share interesting similarities, the purpose of this paper is to explore the interconnectedness of meaning and value co-creation that can inform and be relevant to service innovation. This will be done through the mapping of conceptual connections between design-driven and service innovation. By doing so, S-D logic and design-driven innovation can serve as a bridge for stronger penetration of meaning into the service innovation sphere on both theoretical and empirical level.

The paper is structured as follows. First, the authors give an overview of design-driven innovation explaining its main postulates. Second, a theoretical underpinning of service innovation and S-D logic is provided in order to understand their central concepts and challenges. Third, an analytical comparison between main building blocks of S-D logic and design-driven innovation is presented. Finally, a discussion is provided with the outline of main contributions and directions for future research.

## Design-driven innovation: integrating management and design research

Design-driven innovation is positioned as an innovation strategy that enables radical innovation of products and services through the change in meaning (Verganti, 2008). Meaning as a basic concept in design driven innovation comes from human-centred design and the work of Klaus Krippendorff. According to Krippendorff (1989, 2006), meaning is the essence of human-centred design where meaning arise through interaction with artifacts; an artifact's form follows its meaning and not its function. Hence people interact with artifacts because they have a meaning to them, and by interacting with them meaning is construed. This position asserts that neither the artefact or interaction, nor the meaning, is an objective signifier or something that is signified. Meaning is situated and based on a subjective account, where different subjects can share and understand the others account of meaning. However, to better understand the positioning of design-driven innovation necessary for future connections with the S-D logic and service innovation, both the management and design context of the framework need to be further examined.

Design-driven innovation deals with the radical change of meaning as a way to radically innovate and gain or sustain competitive advantage, an established concept in innovation management. This commonly used duality between radical and incremental represents the degree of change and originates from technological innovation research where the former has a significant impact on the market and can result in substantial competitive advantage (Abernathy & Clark, 1985; Chandy & Tellis, 2000). As Verganti (2009) points out, design-driven innovation as a strategy for radical change was inspired by a certain peculiarity he noticed, where long-term market and innovation success of Italian design was occurring due to the manufacturers and executives and not the designers employed. Verganti's (2008) empirical findings suggested that the innovation process seemed tacit and network-based, but came from specific capabilities that are not related only with the breakthrough technologies but also with meaning. One of the common examples he gives is Alessi's kitchen utensils line "Family follows fiction" which has radically innovated by changing the meaning; from plain and functional kitchen tools to fun and wondrous objects. However, the study of meaning related to the artifacts came from design practice that harboured a long term preoccupation with how designers make sense of things and facilitate interpretation (Jahnke, 2012). Particularly the works of Klaus Krippendorff on the role of meaning in design constitute the main building block of design-driven innovation.

### Characterizing meaning in design-driven innovation

Krippendorff (2006) has positioned meaning as a central concept in human-centred design that calls for a paradigmatic shift in a way designers not only design, but conceptualize artifacts. His work draws from various aspects of design theory and practice arguing for a change of the functionalist paradigm that relies on designers designing artifacts with particular function(s) in mind (*ibid.*). For designers to design in an increasingly complex world filled with complex artifacts, Krippendorff (2011) proposes new principles based on the six-level trajectory of artificiality that explains development of artifacts according to his changing paradigm; from products to discourses. This shift in the nature of artifacts is important to acknowledge because it broadens the scope of design practice, with designers having unique set of skills in dealing with their complexities. What enables the movement along this trajectory is the understanding of meaning or how people make sense of artifacts (*ibid.*), a design concept that is in the focus of design-driven innovation.

Meaning as a central concept of human-centred design represents a set of anticipated uses that arise in the interaction and are emergent in socio-cultural context and the situation in use (Krippendorff, 2006). More importantly, Krippendorff's human-centred paradigm gives users of the artifacts agency by arguing that it is impossible for designers to control meaning of their design, because users make sense of artifacts often unrelated to design's intention

(Krippendorff, 2008). This is also consistent to some of the criticism of user-centeredness coming from design literature that sees users merely as passive recipients of design solutions (Almquist & Lupton, 2009; Redström, 2006; Zurlo & Cautela, 2014). Although many discussions on meaning can be found in design (Almquist & Lupton, 2009; Desmet & Hekkert, 2007; Kazmierczak, 2003; Krippendorff & Butter, 2008; Medeiros, 2014), Krippendorff's conceptualization became the main building block of design-driven innovation where it is seen, as Verganti and Öberg (2013) point out, as co-generated between the actors, context-dependent and embedded in culture. With radical changes in meaning that design-driven innovation enables, the product moves away from its predominantly functional purpose and co-produces a new context with users (ibid.). Because new meaning as an output is always dependent not only on the context but on actors that are making sense of it, it cannot be optimized. This concept has also been advocated by other authors studying radical change of meaning in relation to technological innovation (Buganza et al., 2015, Dell'Era et al., 2010). Therefore, meaning in design-driven innovation is characterized by its emergence in interaction among key interpreters, context-dependency, inability to become optimized and ongoing construction in organizational and societal context.

## Operationalizing design-driven innovation

The framework of design-driven innovation follows the systematic process of listening, interpreting and addressing and includes a variety of interpreters or “sources”, not primarily users (Verganti, 2009). The departure from users as the primary interpreters in innovation process is important in order to understand where the capabilities of design-driven innovation come from. In design-driven innovation Verganti (2008) posits that:

*Radical changes in meanings instead ask for radical changes in sociocultural models, and this is something that might be understood (and affected) only by looking at long-term phenomena with a broader perspective. Design-driven innovation is therefore pushed by a firm's vision about possible breakthrough meanings and product languages that could emerge in the future (p. 438).*

Therefore, the change in meaning is facilitated through the sociocultural models that leverage on the network of external key interpreters who have an important role in design-driven innovation process. Their core capability is to influence the radical change of meaning through design discourse enabling them to envision the possible futures, which is something that could never been possible from the user research only. Therefore, organizations should look at the design discourse that emerges with key interpreters as a form of research where it is important to understand how people make sense of things as well as how emergence of radical new meaning can be facilitated (Verganti, 2009). Key interpreters can be users, but everyone that co-produces the socio-cultural world around the firm in which meaning emerges should be included (designers, technology suppliers, research and educational institutions, marketers, media, etc.). Thus, design-driven innovation differentiates from a user-centred approach in the sense that users should neither be the primary nor the only source of information to understand the meaning that can emerge and become relevant in the future.

Norman and Verganti (2014) also argue against the ability of human-centred design to facilitate radical innovation because of its focus on iteratively evaluating design through user involvement, and blindly using this as the decision space. Although this notion is not unknown in innovation literature, since user involvement and participation was often connected to only incremental and not radical innovation, some studies still show that involving users can be highly beneficial for innovation process (Ehn, 2008; Magnusson, 2009; von Hippel, 1986) including radical innovation (Lettl, 2007, Björgvinsson et al, 2012). However, human-centred perspective of Krippendorff should not be confused as equivalent to user-centred approach that design-driven innovation framework departs from. In discussing human-centred design and the role of meaning, Krippendorff (2008) is not merely user-centred. He emphasizes the necessity to bring stakeholders and their understanding into design process, and to design the artifacts to be redesignable. The later characteristic means

design becoming open for co-creation, which Krippendorff sees as truly design-driven as opposed to information-driven process. This co-creative nature of artifacts arising through meaning corresponds strongly with the value co-creation concept in S-D logic that will be presented in the following section.

The core empirical research of design-driven innovation, in the sense of Verganti, is focused on products, however some studies explored it in the context of service and service design (Takeyama et al., 2016). Nevertheless, further research is needed in connecting design-driven innovation with the specific context of service innovation on both theoretical and empirical level. This can help in bringing design-driven innovation more effectively into the service innovation context of S-D logic that acknowledges changing paradigm of service and is also relevant approach for theoretical development of service design (Wetter-Edman et al., 2014).

## Service innovation and S-D logic

Understanding the theoretical development of the service innovation field is necessary for positioning its latest advances within S-D logic framework. Service innovation developed from established innovation research investigating process advancements mainly in manufacturing. As research in service innovation was evolving, three distinctive perspectives on service innovation can be tracked. Coombs and Miles (2000) summarized them in the *assimilation*, *demarcation* and *synthesis* perspective, perspectives to which other researchers have added (see e.g. (Carlborg et al., 2013)). *The assimilation* perspective views services in the same way as manufacturing, disregarding that there are any particular differences between products and services, and with product and manufacturing as a prevailing focus. *The demarcation* perspective argued for clear distinction between services and manufacturing, mainly through the new service development (NSD) stance, which represented services as an internal process, insisting that this should be taken in consideration in research and that the same approach couldn't and shouldn't be employed for both products and services. *The synthesis* perspective integrates an innovation approach for both products and services stating that this perspective should be broad enough to include both. This development of service innovation is coherent not only with the shift towards the service economy, but also to the adoption of a service mindset that embraces active roles of service beneficiaries during the co-creation of value (Witell et al., 2016). Thus, the synthesis perspective on innovation found common grounds within the theoretical framework of S-D logic and its view that innovation entails integration of resource during new value co-creation process (Lusch & Nambisan, 2015). The synthesis perspective is also consistent with the view that service innovation should not just add value to organizations, but also to customers thus affecting different elements of service systems and subsequently affecting economic development (Drejer, 2004).

### Basics of the S-D logic

S-D logic moves away from differentiating between products and services and focuses instead on a service as a fundamental basis for exchange where the process of value co-creation is closely connected to resource integration between actors involved (Vargo & Lusch, 2016). Ever since its initial introduction in the service research as a new paradigm (Vargo & Lusch, 2004), S-D logic addressed different aspects of service research through its eleven fundamental premises (FP's) and axioms stating that service is fundamental basis of all exchange and that value is always co-created between actors. In the centre of S-D logic are thus the concepts of value and resources, where operant resources, representing actors' knowledge and skills, are seen as fundamental sources of strategic benefit through which value co-creation happens. Value thus arises in use (value-in-use) and is co-created by multiple actors coordinated by institutional arrangements (Vargo & Lusch, 2016). Value is also something that cannot be delivered by the actors and where service providers can only

offer value propositions that foster value co-creation (ibid.). Hence in order for value co-creation to happen, resources need to be integrated. Therefore, value that emerges in use during co-creation is dynamic, always idiosyncratically determined by the customer and context-dependent (Edvardsson et al., 2011; Grönroos & Voima, 2013). With its framework, S-D logic moves away from viewing customers as passive entities that consume value and where organizations add value through the operations in which service innovation is just a fragment of organization's development process (Edvardsson & Tronvoll, 2013). Instead, service-centeredness that S-D logic brings is inherently relational, acknowledging the fundamentally phenomenological and complex nature of value co-creation. As such, S-D logic is considered fairly congruent to theoretical developments in service design, although additional interpretative richness is found in service design practices (Wetter-Edman et al., 2014). To summarize, one of S-D logic fundamental premises is that value is co-created in use through integration of the resources among multiple actors, and has an idiosyncratic quality determined by the beneficiary. Value is also context-dependent and its co-creation is coordinated through institutional arrangement.

### Service innovation in S-D logic

The concepts of *value co-creation*, *resource integration* and *value propositions* are key building blocks of S-D logic relevant for understanding service innovation. A key to understanding service innovation is to understand how value co-creation occurs in service systems where meaningful value propositions lead to resource integration (Chae, 2012; Skålén et al., 2014; Spohrer & Maglio, 2008). The complexity of service lays in multiple actors that are involved in creating value propositions and are engaging in value co-creation within the entire service ecosystem (Chandler & Lusch, 2015; Koskela-Huotari et al., 2016; Vargo & Lusch, 2011). Thus, S-D logic focuses on the processes that are emergent and dynamic in explaining the nature of service. The emergent nature of service innovation happens because the interaction between service actors is unpredictable and constantly evolving (Chae, 2012). However, this emerging process-based focus can be challenging for operationalizing service innovation, especially relating to the degree of change (Snyder et al., 2016; Witell et al., 2016).

While service innovation has adopted dualities such as incremental and radical degree of change, a key issue in detecting them is the fact that the line between service innovation process and outcomes is often blurred. Many researches employing S-D logic therefore tend not to focus on radical vs. incremental innovation (Witell et al., 2016), and highlight the emergent nature of configurations of value co-creation (Holmlid et al., 2017). However, the relevant service innovation questions about what represents new value and to whom is this value new are important and still need further research (Witell et al., 2015). Avoiding to answer them makes operationalization of service innovation more difficult while addressing only degree of change can be insufficient in understanding what part of the offering truly represents innovation (Snyder et al., 2016). Nevertheless, with the design-driven innovation focused on new meaning as a way to achieve radical change, the following section will explore how the presented concepts interrelate and can possibly open up new spaces for contribution of service design to service innovation.

### Bridging design-driven and service innovation

The previous sections summarized literature-based genesis, nature and challenges of design-driven and service innovation explaining their main building blocks. In this section, both will be conceptually compared to investigate further possibilities for contributions in service innovation based on change in meaning. Design-driven innovation is a strategic firm-centred framework that highlights the radical change. Service innovation within S-D logic represents the new forms of value co-creation and resource integration. The comparison in this section

will cross-cut through main conceptual building blocks of innovation process and outcomes in both.

The main building block of design-driven innovation, the concept of meaning, shares some of the qualities with S-D logic on value and value co-creation. Therefore, to understand the similarities and differences of innovation process the comparison of meaning and value is presented. Table 1 summarizes the comparison based on the literature presented in previous sections.

**Table 1: Comparison of the main concepts**

Nature of meaning (design-driven innovation)	Nature of value (S-D logic)
<ul style="list-style-type: none"> <li>• Meaning emerges in interaction</li> <li>• There is no optimal meaning, it cannot be optimized or constant</li> <li>• Meanings are context dependent</li> <li>• Creation of meaning happens in interaction and reflection</li> <li>• Radical change in meaning is always co-generated among key interpreters</li> <li>• Meanings are constructed and re-constructed during ongoing societal and organizational processes</li> <li>• Meaning is intangible in nature</li> </ul>	<ul style="list-style-type: none"> <li>• Value is co-created in use through resource integration</li> <li>• Firms cannot embed value in their offering and deliver it</li> <li>• Value is context-dependent (value-in-context)</li> <li>• Value is always idiosyncratically determined by the service beneficiary</li> <li>• Value propositions are invitations for multiple actors to engage in value co-creation</li> <li>• Value is always co-created by multiple actors including beneficiary</li> <li>• Value co-creation is coordinated through institutional arrangements and institutions generated by actors</li> </ul>
Buganza et al., 2015, Dell’Era et.al., 2010, Krippendorff, 1989, 2006, Norman & Verganti, 2014, Verganti 2003, 2008, 2009, Verganti & Öberg, 2013,	Edvardsson et al. 2011, Edvardsson & Tronvoll, 2013, Grönroos & Voima, 2013, Mele et al. 2010, Skålén et al., 2014, Vargo & Lusch, 2004, 2008, 2011, 2016,

Table 1 shows that meaning arises in interaction and value arises in use. Value-in-use presupposes interaction therefore the point of emergence is the same. Further, meaning cannot be optimized while it is also impossible to embed value into product. Both characteristics come from the presumption that neither meaning nor value can be entirely controlled because they are always dependent on the actors who interact with them and make sense/co-create them. Both meaning and value are also context-dependent. Design-driven innovation states that radical change in meaning is co-generated among key interpreters while S-D logic posits value co-creation at its core around which multiple actors come together to integrate resources based on value propositions. Design-driven innovation as a radical change stems from interactions of key interpreters where focal firm needs to actively engage in participation and interpretation of design discourse, which is seen as a form of research. Therefore, the key interpreters have an active role in facilitating radical change in meaning. Both key interpreters and actors represent various stakeholders around the firm in question. Creation of meaning happens both in interaction and reflection, which means that it evolves both in personal and collective spheres. On the other hand, value is always phenomenologically determined by the beneficiary and value co-creation is facilitated through institutional arrangements. Based on this comparison, Figure 1 summarizes interrelation of basic concepts through five connectors: *interaction, context, institutional generation, emergence* and *idiosyncrasy*.

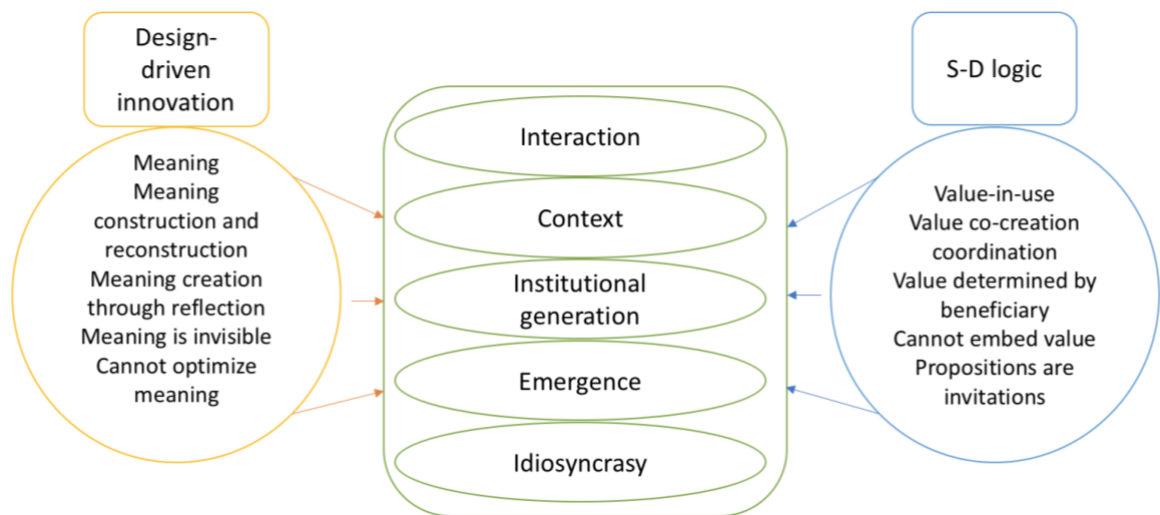


Figure 1: Connectors indicating interrelation

How these concepts as building blocks influence their related innovation processes is another important aspect to be considered. Simplified visualizations of both innovation processes serve to depict the basic relation between the central concept and other elements relevant for innovation process. Figure 2 shows the summary of design-driven innovation process that evolves and emerges around meaning. Network of key interpreters engage in design discourses that generate proposals for new radical meaning. If such change happens they also change socio-cultural models, which influence key interpreters. For the process of design-driven innovation, key interpreters are the most relevant element in innovation process that leads to radical innovation. They are often seen as focal firm's external network because of their capability to engage in discourses on possible futures, which are often unrelated to solving specific problems of the customer. The process of design-driven innovation, and its importance to radically change the meaning lies in analysing, interpreting and using discourses found among key interpreters, a process that can be seen as sequential.

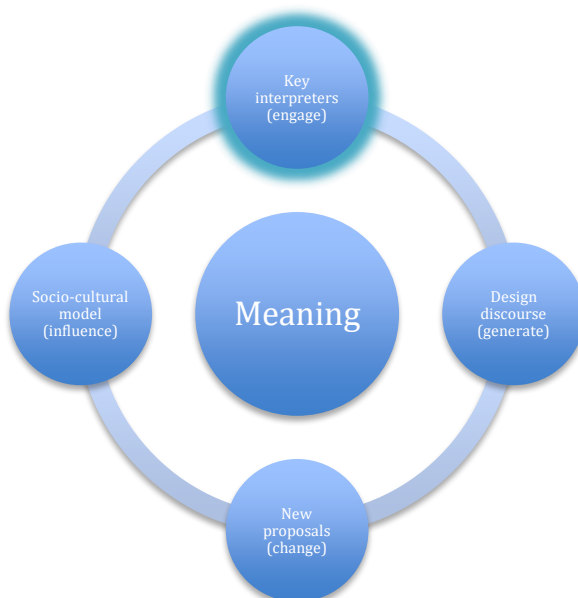
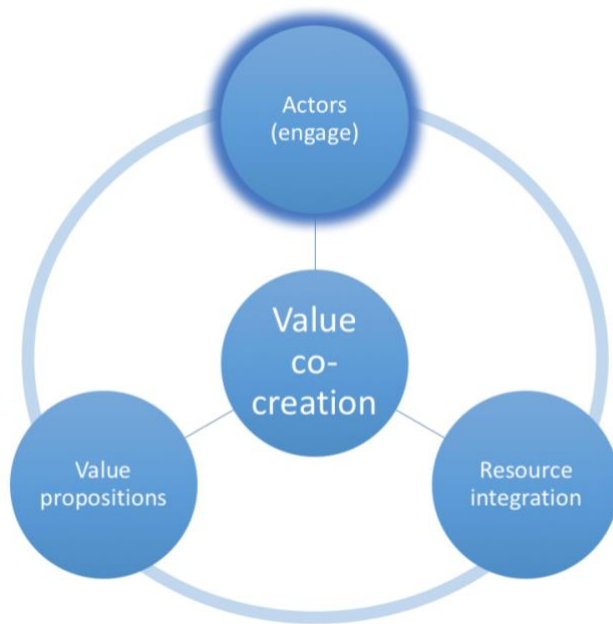


Figure 2: Summary of design-driven innovation process

On the other hand, service innovation evolves around actors engaging in resource integration based on value propositions to co-create value. Value co-creation is not only emergent in this process but also actively influenced by all the elements in the process





**Figure 3: Connectors indicating interrelation**

From the S-D logic perspective it is clear how the process of value co-creation integrates elements of service innovation. The precisely defined dynamic around co-creation includes many actors form a network, including beneficiaries. This dynamic reveals the complexity and interconnectedness of service systems and innovation processes within it. It also offers more nuanced view of elements in co-creation process that can be innovated, such as new value propositions and recombination of resources (Holmlid et al, 2017). However, another aspect of innovation process that is linked to the outcome of radical change needs to be mentioned. Both key interpreters in Figure 2 and actors in Figure 3 emphasize important elements relevant for achieving radical degree of change. Radical outcome of design-driven innovation lies in idea that network of external partners will have the power of sustaining and tacitly implying new possible meanings that could never be brought up in user-related research only. Key interpreters that belong to a wider external network are not just a knowledge source, but also a source for radical meaning creation. In S-D logic , a network-centric perspective of actors is common and all actors are seen as potential resource integrators, value co-creators and innovators. Therefore, both the interactions they choose to engage with and everything that such interactions encompass are relevant in the context of service innovation and radical change.

## Discussion

The comparison of the two concepts investigates whether there is a conceptual relationship between meaning in design-driven innovation and value in service innovation that can serve as a common ground for connecting these two concepts.

This can lay the basis for two important contributions. By understanding interrelations between value and meaning conceptual ground for evolving service design can be clarified and this represents the important step in leveraging service design for service innovation. The integration of the two concept can also serve as a starting point for operationalization of service innovation. On the other hand, the connection of value and meaning can inform design-driven innovation with stronger service logic necessary to deal with complexity of service innovation. The conceptual relationship between meaning and value exists and is portrayed in Table 1. The complementarity is seen in relevance of interaction, context,

phenomenological aspect of meaning/value determination, and impossibility to optimize/embed it into the offering or process. As Figure 1 additionally shows these connectors are summarized as interaction, context, institutional generation, emergence and idiosyncrasy. Based on the connectors it can be contended that meaning and value share important characteristics. Meaning and value both have peculiar nature which in practical terms can significantly challenge the need to control them, from either firms as collectives or designers as individuals. (Vargo & Lusch, 2016; Verganti 2009). Therefore, this conceptual overlap opens possibilities for future theoretical and empirical research of connectors relevant for service innovation through design-driven innovation. However, it cannot be said that either value or meaning can be substituted with one another as identical concepts. Although the nature of the concepts seems similar, there are differences in how each concept is explained that might not be the result of different terminology only.

In the centre of the design-driven innovation process presented in Figure 2 is meaning with its latent relations to all the elements of innovation process. The mere definition of design-driven innovation brings radical new meaning as an outcome of the innovation process. That is why the innovation process of design-driven innovation is sequential, although meaning has emergent qualities similar to conceptualization of value in S-D logic. On the other hand, the process of service innovation presented in Figure 3 is more explicitly emergent and relational. Because value co-creation is central to service innovation in general, and to radical service innovation as well (Edvardsson & Tronvoll, 2013; Perks et al., 2012) it reflects dependency on dynamics of actors, their resources and value propositions in a particular context. Enriching design-driven innovation with this relational and interconnected perspective of value co-creation can help steer its relevance towards the service context and strengthen the role of service design in service innovation.

Finally, the question of radical change in meaning as a form of service innovation needs to be addressed. A shift in meaning making, may render a value proposition obsolete. Radical innovation in design-driven innovation is always facilitated by meaning but primarily comes from firm's engagement with key interpreters, who have the power to push and change the meaning throughout the innovation process (Figure 2). Design-driven understanding of radical innovation is rooted in incremental/radical duality, which is seen as opposing. On the other hand, radical service innovation in S-D logic often stems from incremental innovation in the process of co-creation (Perks et al., 2012). Design-driven innovation is not appreciative of incremental user-centeredness in achieving radical innovation (Norman & Verganti, 2014). Krippendorff's (2008) human-centred design principles advocate giving control to the users by designing for redesigning (Ehn, 2008) or enabling what in S-D logic could be defined as value co-creation, a core concept of service innovation. Designing artifacts so that they serve as platforms or proposals for different users to "co-create" meaning is what is implied in this process of innovation. Seeing value co-creation as such a platform informed by meaning can become a valuable venue for further investigation in service innovation from S-D logic perspective, especially its operationalization. Nevertheless, for both design-driven and service innovation, key interpreters or actors have an important role in radical innovation outcome, which should be investigated further. Future research should also aim at widening the scope of meaning from other design-related literature for its further comparison with value.

## Conclusion

Meaning and value, are the two core concepts in design-driven and service innovation. However, their interrelatedness has not been extensively explored, although understanding interrelations between meaning and value can set the important ground for operationalization of service innovation through service design. Design-driven innovation uses change in meaning as inherently design principle to innovate and operationalizes it

through a process of listening, interpreting and addressing a network of key interpreters. However, translating it directly to service innovation framed in S-D logic might be challenging due to complex nature of service and lack of stronger connection to service logic. By dissecting, analysing and connecting meaning and value from design-driven innovation and service innovation using the S-D logic, authors believe that this bridge is possible. These similarities and detected connectors enable operational penetration of meaning into the service innovation sphere. This can also open new venues for service design contributions to service innovation. Nevertheless, further exploration of design literature on meaning can bring more nuanced approach in understanding how meaning can serve as a building block in service innovation.

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# Service designers, unite! Identifying shared concerns among multidisciplinary perspectives on service design

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## Abstract

Service Design is a multidisciplinary approach that asks for further research to be better integrated. This article contributes to bridging this gap by identifying shared concerns among multidisciplinary perspectives on Service Design. A qualitative study involving six focus groups was conducted on international Service Design research centers. Results show the service system concept as an abstraction that supports integrating multidisciplinary perspectives and their contributions to Service Design, by identifying shared concerns across different levels: (a) at an individual-actor level, the shared concern of an actor-centered approach; (b) at an organizational service delivery system level, the shared focus on processes and interfaces; and (c) at network and ecosystem levels, the shared interest in designing for new constellations of actors and their connected roles. This article integrates different concepts and approaches to Service Design developed in dispersed areas, supporting dialogue, collaboration and theory building to advance Service Design as an interdisciplinary field.

**KEYWORDS:** service design, multidisciplinary, service system, collaboration

## Introduction

Service Design is a multidisciplinary, human-centered, collaborative, holistic approach focused on creating new services or improving existing ones (Blomkvist, Holmlid, Segelström 2011; Ostrom et al. 2015; Sangiorgi and Prendiville 2017; Grenha Teixeira et al., 2017). The multidisciplinary character of Service Design is explained by its evolution. In the 80s, the term ‘service design’ started to be discussed in the context of service blueprinting (Shostack, 1982) and as a specific step within a New Service Development (NSD) process, focused on generating ideas and formulating service concepts (Scheuing and Johnson, 1989). In the 90’s, Service Design was introduced as a Design discipline, contributing to advance

the application of design capabilities in the service sector (Erlhoff, Mager, & Manzini, 1997; Pacenti, 1998). More recently, a renewed interest in service innovation has brought the attention towards ‘leveraging service design’ as one of the key research priorities in Service Research (Ostrom et al., 2015). In this context, Yu and Sangiorgi (2018) present Service Design as contributing to all NSD steps, by involving multidisciplinary teams in human-centered and design-based processes to service innovation.

Researchers have characterized multidisciplinary perspectives on Service Design and their related contributions (Patrício, Gustafsson, & Fisk, 2018), such as from Service Research (Andreassen et al., 2016), Design (Kimbell, 2011), Interaction Design (Holmlid 2007), Service Marketing (Bitner, Ostrom, & Morgan, 2008), Operations Management (Sampson 2012) and Information Systems (Glushko, 2010). Service Research provides the focus and context of Service Design, bringing definitions such as the concept of service (Vargo & Lusch, 2008) and using this approach to enhance process, structure and culture in creating value for customers (Andreassen et al., 2016). Design provides the mindset, the processes and tools that bring the explorative, iterative way to create new service (Kimbell, 2011). Interaction Design contributes to designing and structuring the resources that support service interactions and the user experience (Holmlid 2007), with tools such as storyboarding (Truong, Hayes, & Abowd, 2006). Service Marketing addresses the design of service concepts and multi-interface service systems for the customer experience, with techniques such as service blueprinting (Bitner et al., 2008). Operations Management contributes to designing service processes, making the connection between service front-stage and back-stage through models, such as the process chain network (Sampson 2012). Finally, Information Systems also addresses the technology and the back-office processes that support person-to-person, person-to-machine and machine-to-machine interactions (Glushko, 2010).

However, there is still a lack of a comprehensive understanding of Service Design as an integrated multidisciplinary approach. Different academic communities have been approaching Service Design, resulting in different concepts, approaches and languages. This lack of integration hinders the dialogue and shared ground between Service Designers coming from different backgrounds, risking to researchers and practitioners building knowledge in silos, ‘reinventing the wheel’ and eventually hampering the potential of Service Design to foster service innovation (Ostrom et al., 2015).

This article examines complementarities among different perspectives on Service Design, in order to understand which are shared concerns to Service Design approached by multidisciplinary perspectives. For that, it presents a qualitative research (Charmaz, 2014; Gioia, Corley and Hamilton, 2012) comprising focus groups (Flick, 2009) with six Service Design research centers, from 5 different countries, involving a total of 40 researchers from multidisciplinary backgrounds.

Study results show that the service system concept is an abstraction that supports integrating multidisciplinary perspectives and their contributions to Service Design. From a Service-Dominant Logic perspective, Edvardsson, Skälén and Tronvoll (2012) define service system as a configuration of inter-related structures and resources that support and enable value co-creation among actors. In this sense, “service systems can be modeled and designed at different levels” (Patrício et al. 2011, p. 181), and the application of the service system concept can cover “a wide spectrum of kinds and levels of systems, ranging from individuals or families, to organizations, institutions, or nations.” (Sangiorgi, Patrício, and Fisk 2017, p. 50). This means that, besides focusing on individual-actor and organizational service delivery system levels, Service Designers can work towards transforming bigger entities such as service networks (Akaka, Vargo, & Lusch, 2012) and service ecosystems (Lusch & Vargo, 2014). This service system perspective enabled integrating Service Design multidisciplinary contributions across different levels, identifying shared concerns in terms of an actor-centered approach, processes and interfaces and the design of new constellations of actors and their connected roles. As value, this article integrates different concepts and approaches to Service Design developed in dispersed areas, supporting dialogue and theory building to advance Service Design as an interdisciplinary field (Gustafsson et al., 2016).



## Methodology

The aims of this study were to identify and examine complementarities between different perspectives on Service Design, in order to identify shared concerns that could support multidisciplinary theory building and collaborative work in this field. This study involved a qualitative research comprising focus groups (Flick, 2009) with participants from six Service Design research centers. These centers were chosen, because of their leading role in representing areas previously presented that contribute to Service Design: Service Research, Design, Interaction Design, Marketing, Operations Management and Information Systems. The focus groups were developed in five different countries, where each local facilitator was asked to invite researchers, resulting in a total of 40 participants. The profile of each focus group is presented in the Table 1. Based on this profile, focus groups will be referred herein by their numbers and main research focus.

Focus group	Number of participants	Main research focus	Multidisciplinary background of participants	Country
Service Design Center 1 (SD1)	9 participants	Information Systems	Information Systems; Service Science; Computer Science	Germany
Service Design Center 2 (SD2)	6 participants	Operations Management	Operations Management; Management	Portugal
Service Design Center 3 (SD3)	9 participants	Interaction Design/ Design	Interaction Design; Design; Cognitive Science; Management	Sweden
Service Design Center 4 (SD4)	4 participants	Design	Design; Architecture	Italy
Service Design Center 5 (SD5)	8 participants	Marketing	Marketing; Service Research	Netherlands
Service Design Center 6 (SD6)	4 participants	Service Research	Service Research; Marketing	Sweden

**Table 1: Focus groups' profile.**

Focus groups covered two main topics: (1) the characteristics of Service Design activity from multidisciplinary lenses, and (2) how the researchers saw the connections between Service Design and service innovation through multidisciplinary perspectives. Data was audio-recorded and transcribed.

A qualitative approach to analyze the focus groups' results was developed (Charmaz, 2014; Gioia, Corley and Hamilton, 2012). In this context, the transcriptions of the focus groups were examined with the support of the Nvivo software, involving initial and focused coding (Charmaz, 2014). Within this process, fragments of data (e.g. segments of text) were firstly coded closely to their analytical import (initial coding), to be finally condensed, integrated and synthesized in more meaningful categories (focused coding) (Charmaz, 2014). This iterative process enabled to examine different activities, approaches and concepts, leading to the identification of different levels of service systems and shared concerns that Service

Designers have been working on. Based on this comprehension, a new round of literature review was developed in order to theoretically support the themes that emerged from the data analysis. Results from the focus groups are presented in the next section, complemented by a discussion supported by the identified literature.

## Results

Results of data analysis show three sets of shared concerns, coordinated by a service system perspective: (a) at an individual-actor level, the shared concern of an actor-centered approach, comprising human-centered and provider-centered perspectives; (b) at an organizational service delivery system level, the shared focus on processes and interfaces; (c) at a network and ecosystem level, a shared interest on designing for new constellations of actors and their connected roles. These results were organized in terms of the themes discussed in the focus groups, presented in the following Tables.

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	<b>INDIVIDUAL-ACTOR LEVEL</b>					
	<b>SD Center 1</b>	<b>SD Center 2</b>	<b>SD Center 3</b>	<b>SD Center 4</b>	<b>SD Center 5</b>	<b>SD Center 6</b>
<b>HUMAN-CENTERED APPROACH</b>	X	X	X	X	X	X
• <i>Learning from people and using people's experiences and capacities as resources</i>	X	X	X	X	X	X
• <i>User and usage focus</i>	X	X	X	X	X	X
○ <i>Interpreting and translating user needs into ideas</i>			X	X	X	
○ <i>Using technology to support users to develop new roles and competences</i>	X	X				
○ <i>*Focusing on the usage context</i>	X					
• <i>Customer focus</i>	X	X	X	X	X	X
○ <i>Understanding customer needs and cultures</i>			X	X	X	X
○ <i>Stimulating new customer roles</i>	X	X	X			X
• <i>Employee focus</i>	X		X			X
○ <i>Stimulating new behaviors leading to changes in employees' roles</i>	X		X			X
<b>PROVIDER-CENTERED APPROACH</b>	X	X				
• <i>Guaranteeing the requirements of service providers</i>	X	X				

Table 2: Individual-actor level.

\* Literature describes differences between user-centered approach and usage-centered approaches (Norman, 2005). While the first focuses on the users' needs, the second focuses on the activities performed by these users. We consider the latter as overlapping and complementing a user-centered approach.

	<b>ORGANIZATIONAL SERVICE DELIVERY SYSTEM LEVEL</b>					
	<b>SD Center 1</b>	<b>SD Center 2</b>	<b>SD Center 3</b>	<b>SD Center 4</b>	<b>SD Center 5</b>	<b>SD Center 6</b>
<b>PROCESS</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
• <b>Designing and improving the Service Design process</b>			<b>X</b>	<b>X</b>		<b>X</b>
○ <i>Facilitating design conversations</i>			<b>X</b>	<b>X</b>		
○ <i>Embedding design capabilities</i>				<b>X</b>		
○ <i>Transforming organizational practices</i>				<b>X</b>		<b>X</b>
○ <i>Using Participatory Design processes</i>			<b>X</b>	<b>X</b>		
• <b>Designing and improving service delivery processes</b>	<b>X</b>	<b>X</b>			<b>X</b>	<b>X</b>
○ <i>Studying what happens during service usage and after service usage</i>					<b>X</b>	<b>X</b>
○ <i>Focusing on implementation, realization, diffusion, scaling and measurement</i>					<b>X</b>	<b>X</b>
○ <i>Improving service quality</i>	<b>X</b>	<b>X</b>				<b>X</b>
<b>INTERFACE</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
• <b>Designing new service interfaces</b>	<b>X</b>		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
• <b>Designing and guiding new service interactions</b>		<b>X</b>	<b>X</b>	<b>X</b>		
• <b>Using technology to support service</b>	<b>X</b>	<b>X</b>	<b>X</b>			
○ <i>Change the way people work</i>			<b>X</b>			
○ <i>Improving service delivery process</i>		<b>X</b>				

Table 3: Organizational service delivery system level.

	<b>NETWORK AND ECOSYSTEM LEVELS</b>					
	<b>SD Center 1</b>	<b>SD Center 2</b>	<b>SD Center 3</b>	<b>SD Center 4</b>	<b>SD Center 5</b>	<b>SD Center 6</b>
<b>NEW CONSTELLATIONS OF ACTORS AND CONNECTED ROLES</b>	X	X	X	X	X	X
• <b>Creating new businesses and value propositions</b>	X			X	X	X
• <b>Generating new networks of actors</b>			X	X		
• <b>Supporting B2B services</b>	X	X				
• <b>Enabling more sustainable solutions for society</b>				X		
• <b>Improving public services</b>			X	X		
• <b>Creating conditions for institutional change</b>			X			X

Table 4: Network and ecosystem levels.

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### At an individual-actor level – an actor-centered approach:

All focus groups referred to Service Design as bringing new knowledge to the service innovation process, by learning from individuals or ensuring that the requirements of service providers are also met, which compose an **actor-centered approach**.

In the first case, a human-centered approach has been referred to as user-centered, customer-centered and employee-centered perspectives. A human-centered approach was mentioned by SD3-Interaction Design, which described Design as providing a mindset, practices, tools and reframing approaches that support learning from people.

*Design as a practice provides maybe mindset, process and tools, but it also provides ways of thinking, it provides reframing of problems (...) Design often claims that through its human-centeredness it addresses topics and concerns on an individual level (SD3)*

Likewise, SD4-Design highlighted the capability that Designers have to interpret and translate user needs into ideas, contributing to early phases of the service innovation process.

*So, in the early stage, designers can have the capability to interpret and translate the users' needs into ideas, and support engagement of users into idea generation. (SD4)*

A user-centered perspective is also present when creating new technology, where researchers from SD1-Information Systems claimed they can support users to develop new roles and competences. This was complemented by a usage focus of technology.

*Technical services, they become more and more accessible for consumers (...) Slack has services that are behind, that you can just click on now and integrate this whole product. (...) consumers themselves they become more technically capable. (...) When you design a service, from an Information Systems perspective, you always design for a usage context. (SD1)*

A customer-centered perspective was described as focusing on *learning from customers* (SD5-Marketing) and *understanding customers' needs and cultures* (SD6-Service Research). SD5-Marketing highlighted an interest in researching about customer loyalty, while SD6-Service Research reinforced Service Design's stimulus to new behaviors leading to changes in employees' and customers' roles.

*There are a lot of Marketing studies that do focus on customer experience. (...) customer loyalty, is part of customer experience, so this has been also extensively studied in the past. (SD5)*

*When you look at academic journals in Marketing, they are all talking about how it is affecting the customer role, or it's being changed, and how the customers are getting new roles. (SD6)*

In parallel, an employee-centered perspective was described as a focus on learning from employees as sources of knowledge and creating new roles for employees, by SD2-Operations and SD6-Service Research.

*I think that in the service we must consider both [employee and customer], because they are connected. (SD2).*

*(...) to use customer base knowledge to create, for example, new delivery processes, they also have to use an employee perspective and their knowledge, and then creating a new delivery process would be creating also new roles for customer and employees in that interface or interaction in order to create value. (SD6).*

On the other hand, a **provider-centered perspective** was defended by SD1-Information Systems and SD2-Operations, in order to guarantee that requirements of service providers can be fulfilled.

*We also have the provider-centered view (...) So, you want to set up your processes and activities so you can design later on or maintain the service efficiently. (SD1)*

*The perspective of quality depends if it is from the customer or the provider point of view. This reminds me the case of a multinational of the retail sector that (...) wanted to increase the operational flow. (...) they also wanted to increase the time customers spent in their stores, to increase sales. So, these aspects must be counterbalanced. (SD2)*

### At an organizational delivery system level – processes and interfaces:

Focus groups' participants described Service Design contributions to create different solutions inside the organizational service delivery system, where *process* and *interface* were identified as shared concerns.

#### *Process:*

Process was described as the service design process that supports designing for new service and facilitates embedding changes within organizations. Likewise, process was referred to as the service delivery process that supports service to happen.

As seen in Table 3, designing the **service design process** is a shared concern between SD3-Interaction, SD4-Design and SD6-Service Research participants. In this context, SD3-Interaction Design researchers highlighted the *material and aesthetic process that Service Designers use to deal with complex issues, consisting in a methodological approach more than just a set of tools (SD3)*. Likewise, results indicate Service Design creating the conditions to change organizations, by *facilitating design conversations, embedding design capabilities through training (SD4) and transforming organizational practices (SD4; SD6)*.

Design contributions to the implementation of new service solutions were described by SD4-Design focus group as depending on whether Designers stop in informing changes or whether they assume leading roles inside organizations.

*Many design studios maybe stop to understanding the customer, providing the insights, providing ideas of possible developments, then it depends on the company on how much this can be taken in, interpreted, informed and be implemented. Some other ones might be very engaging in the organization (...) so the transformations are maybe helping to implement some of the interfaces, some of the training, or some of the changes of processes, or discussing the business models with all the partners, facilitating conversations, so getting deeper into this transformation. (SD4)*

Data analysis shows SD3-Interaction Design and SD4-Design participants argued for the use of Participatory processes during Service Design. In this context, SD3 researchers claimed *Participatory Design is also part of the outcome*, since it also brings Service Design to the implementation stage, *where we need to actively involve individuals, to enable outcome, such as democratization (SD3)*.

Besides, results show that SD1-Information Systems, SD2-Operations, SD5-Marketing and SD6-Service Research participants indicated an interest on designing and improving **service**

**delivery processes.** In this context, SD2-Operations researchers pointed out that service delivery process is the main object of service design from an Operations' point of view. According to results, the focus on designing for efficient processes is also shared by SD1-Information Systems researchers.

SD5-Marketing and SD6-Service Research participants brought attention to phases during and after implementation, especially in terms of service usage, customer experience and its measurement.

*Innovation is something that has been head of and is being used, so what's happening during usage and after usage (...) Diffusion and implementation, these are two terms that nobody uses. (...) there is only Service Research that has mainly dealing with it. (SD6)*

Moreover, SD6-Service Research focus group defended the involvement of people that will actually provide the service is fundamental to guarantee the actual service implementation.

*In health care for example, it's not enough to have a new process, and say that now we are going to work with LEAN. We actually have to work with LEAN to make it happen, so it's not just adopting a new service idea, it has to be used in some way. (SD6)*

#### *Interface:*

Interface was characterized as the set of resources and spaces that support service interactions and customer experience to happen (SD3). Data analysis shows **service interface** as a shared object among SD1-Information Systems, SD3-Interaction, SD4-Design, SD5-Marketing, and SD6-Service Research participants. This was described by an interest in *creating technological interfaces* (SD1), *structuring the resources that support interactions* (SD3), *designing the customer experience* (SD4) and *focusing on the servicescape and service clues* (SD5; SD6). Results show that SD5-Marketing and SD6-Service research participants described contributions to understand and design service clues and servicescape.

*Marketing is more focused on customer experience (...) service interface in terms of service clues, and servicescape. (SD5)*

Data analysis indicates, on the other hand, SD1-Information Systems researchers positioning interface as part of technology, arguing for a technological-perspective to Service Design.

*I think it is always technology (...) if we take (...) service interface and service delivery process, you can sub classify in technology (...) a technologist perspective, which talks about how new technology influences innovating new services. (SD1).*

As seen in the Table 3, the *use of technology can support service* (SD1; SD2; SD3), *change the way people work* (SD3) and *improve service delivery processes* (SD2).

#### **At network and ecosystem levels – new constellation and roles of actors:**

As seen in the Table 4, focus groups shared a common interest in designing for new constellations and roles of actors, bringing complementary perspectives on these topics. In this sense, the design of **new business models and value propositions** was discussed by SD1-Information Systems, SD4-Design, SD5-Marketing and SD6-Service Research focus groups, where SD1 and SD4 highlighted, respectively, an interest in business model innovation.

*This goes back to the basic idea that technology innovation is not an innovation if don't have a business model to enter it to market (...) So, Information Systems research started a lot to look at service concept, on how to design services, and how to design business models around the technology. (SD1).*

*There is a lot about understanding how designers help to transform service..., so how to inform business model innovation. (SD4)*



Likewise, results show SD3-Interaction Design and SD4-Design participants indicating that Service Design englobes creating the conditions for the generation of **new networks of actors**. In this context, SD3 mentioned the connections between Service Design and public services.

*I think that (...) especially in some applications related to public services, in services that there is a recognized aim of enhancing users or generating work by networks, not in the dyadic relationships between producer and consumer (...) what we are talking about is not just someone producing things for someone else, but it is activating people, generating network, identifying relevant actors. (SD3)*

Besides, SD1-Information Systems and SD2-Operations participants described the design of **B2B service networks** to support service.

*In a time when we talk a lot about one-to-one and process-process (...) we have a lot of inter-organizational link at the process level (B2B) and not necessarily at the organization level. (SD2).*

At a service ecosystem level, results show that Service Design can work towards enabling more **sustainable solutions for society**, which was a topic discussed by the SD4-Design focus group. Likewise, Service Design is reported as connected to **public service innovation**.

*...we could talk about the impact of design on...society. There is a lot about understanding how designers help to transform service...or help to create more sustainable solutions (...) So, those conversations, can take mainly about how designers are contributing to changing services models to be more sustainable, for more [better] public services. (SD4).*

Finally, Service Design is argued by SD3-Interaction Design and SD6-Service Research participants as contributing to **create conditions for institutional change**, stimulating new behaviors, new practices, new norms and new beliefs.

*If you see innovation as reconfiguration of resources and institutions and the breaking and the making of new institutions, I think that SD can be really part of questioning and breaking these institutions, creating pre-requisites for new ones, new behaviors, new practices, new norms. (SD3)*

*Service Design, it assists us (...) it reconfigures the system (...) it doesn't necessarily need to be new behaviors, I think institutionalized practices means that it could be new beliefs: I can feel more secure when I'm receiving a check-in into my cell phone. (SD6)*

## Discussion

Data analysis indicates that Service Design researchers from multidisciplinary perspectives bring complementary contributions to design solutions for actors, organizational systems, networks and entire service ecosystems. A service system perspective supports the identification of shared concerns in this context, by integrating Service Design multidisciplinary contributions along different levels of service systems.

### Individual-actor level

At an individual-actor level, an actor-centered perspective was mentioned by all centers, which integrates human and provider-centered perspectives. Wetter-Edman et al. (2014) advocate that a human-centered approach considers the importance of a larger network of actors, who are directly or indirectly involved in the service provision. This is reflected by study results, which present complementary foci to a human-centered approach.

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From a user-centered point of view, Service Designers can integrate users' needs and design for user experiences (Blomkvist and Segelström 2014). In this context, literature from Interaction and Information Systems backgrounds describe that a usage perspective can complement a user-centered one. While the latter puts the users in the center of every design, the former focuses on the activities these users will perform (Constantine, 2004; Norman, 2005). This can facilitate service scaling, for instance, focusing on the use cases of service (Constantine & Lockwood, 2001).

Through a customer-centered perspective, Service Designers turn the attention to understanding customers' needs and cultures, as well as stimulating new customer roles. A customer orientation definition is found in the Marketing research literature as "the set of beliefs that puts the customer's interest first" (Deshpande, Farley and Webster, 1993, p. 27). Finally, bringing attention to an employee perspective, Service Designers can also work towards creating and changing employees' roles. In this realm, literature contributes to understand employees' needs in the service delivery system, as well as use employees' knowledge as sources of customer experience innovation (Bitner et al., 2008; Shostack, 1984).

Nonetheless, results show that a human-centered approach is complemented by a provider-centered perspective. This is a topic that has been extensively explored in Operations research literature, which brings knowledge on the contributions of managing service capacity and creating flexible processes to deal with customer variability, in order to maintain or improve operations' efficiency and efficacy (Frei, 2006; Sampson, 2012).

Results show that understanding how multidisciplinary knowledge can contribute to a human and provider-centered perspectives, enables Service Designers to integrate multidisciplinary competences to address and design for the different roles that actors can assume inside service systems.

## Organizational service delivery system level

At an organizational service delivery system level, all centers indicated shared concerns related to processes and interfaces.

### *Process:*

Processes are a common concern among all focus groups, in terms of designing the service design process as the meta-level of Service Design, as well as creating new service delivery processes.

Results indicated a concern on designing and improving the service design process, shared by SD3-Interaction Design, SD4-Design and SD6-Service Research focus groups. In this context, Stickdorn and Schneider (2011) describe the service design process as an iterative process, from exploration until service implementation. Literature supports the shared interest in improving the service design process, by presenting studies that explore approaches and tools to analyze the user experience (Miettinen & Koivisto, 2009), as well as by investigating the creation of service surrogates and the cognitive aspects related to their use (Blomkvist and Segelström, 2014; Blomkvist, 2015). Likewise, literature describes the use of participatory processes to involve users along the design process (Sanders & Stappers, 2008) and to facilitate design conversations and the embedding of design capabilities to transform organizational practices (Junginger & Sangiorgi, 2009). Service Design literature describes that the implementation of new service can be fostered by participatory processes that enable new actors' and resources' integrations within service systems (Holmlid, Wetter-Edman, & Edvardsson, 2017).

Data analysis also shows designing and improving service delivery processes as a shared interest among SD1-Information Systems, SD2-Operations, SD5-Marketing and SD6-Service Research participants. Literature brings studies on service delivery processes in the organizational service system level, in order to support new forms of value co-creation to happen (Ding, Hu, Verma, & Wardell, 2009; Kaltcheva, Velitchka D. Weitz, 2006). Likewise, blueprinting is described as a technique used during service innovation process to identify the potential for new touchpoints and to envision new forms of resource integration along

service delivery processes (Bitner *et al.*, 2008). In this context, literature from Operations, Marketing, IT and Service backgrounds bring specialized knowledge to implement service delivery processes and scale service, as well as to measure the customer experience (Shostack 1982; Fornell, 1992; Glushko 2010).

Results indicate that understanding the contributions brought by Service Design multidisciplinary perspectives along the service design and service delivery processes supports the integration and coordination of resources to enable and evaluate new service. For instance, if we want to design new service delivery processes, it may be interesting to integrate knowledge in terms of understanding capacity and customer variability (Frei, 2006), with an understanding of how to articulate resources along the customer journey to enhance customer experience (Truong *et al.*, 2006). This conceptualization can be supported by designing the technology, that will support the service delivery system (Glushko, 2010), as well as by later measuring the customer experience during service usage (Fornell, 1992).

#### *Interface:*

According to Secomandi and Snelders (2011), service interface is the object of Service Design, which is corroborated by the study results. According to the authors, service interface “focuses on the sociotechnical resources immediately associated with exchanges between providers and clients” (Secomandi and Snelder, 2011, p. 29). Results show SD3-Interaction Design and SD4-Design participants describing contributions to understand and structure the resources that support interactions to enable the customer experience. Data analysis shows, on the other hand, that SD6-Service and SD5-Marketing participants described a focus on understanding and creating service clues and servicescape that also compose the service interface. In this context, literature from these areas brings knowledge to orchestrate all the “clues” that people detect as service interface during the buying process (Berry, Carbone, & Haeckel, 2002), as well as to plan the physical spaces that support the enhancement of customer experience (Bitner, 1992). Literature also reports a focus on service evidences along the service delivery system (Shostack, 1982).

The SD1-Information Systems focus group described service interface as being part of the technology to support service. In this context, literature refers to “user interfaces”, which use can facilitate high performance and service quality (Glushko, 2010). In parallel, literature shows that Interaction Design research supports the understanding of interactions between technological solutions and users, which contributes to improve the interfaces that intermediate them (Lee *et al.*, 2010; Zimmerman *et al.*, 2011).

Results show, therefore, the different perspectives and concepts associated with service interface (i.e. resources and spaces, service evidence, service clues, servicescape, user interface), what can facilitate and enhance communication within Service Design multidisciplinary teams. Likewise, this understanding can support coordinating how each professional can contribute to study and create different types of resources that compose service interfaces within service systems - e.g. materials, technology, physical spaces, etc.

#### **Network and ecosystem levels**

Results indicated a shared interest among focus groups in creating the conditions for new constellations of actors and their connected roles at network and ecosystem levels. Literature describes service networks involving configurations of resources (e.g. actors, technology) to develop more compelling value propositions (Akaka *et al.*, 2012). Service ecosystem, on the other hand, is defined as a “relatively self-contained, self-adjusting system of resource-integrating actors, connected by shared institutional logics and mutual value creation through their service exchanges.” (Lusch and Vargo 2014, p. 161).

Data analysis pointed out shared themes among focus groups’ participants, which indicated that Service Design can create new businesses and value propositions (SD1; SD4; SD5; SD6), generate new network of actors (SD3; SD4), support B2B services (SD1; SD2), and foster the conditions for institutional change (SD3; SD6). This is supported by literature that reports the design of networks of service offerings provided by different organizations

(Patrício et al., 2011), the development of service platforms (Morelli, 2015) and the creation of conditions to empower new service networks within a city (Baek, Meroni and Manzini 2015). Likewise, literature from an Operations' background presents the use of a visual framework to depict processes within service supply chains (Sampson 2012), while literature from an Information Systems background describes the use of technology to enhance service delivery processes between business network partners (Davis, Spohrer and Maglio 2011).

Finally, focus groups also indicated Service Design's connection to public service innovation and institutional change. The topic of institutional change has been increasingly studied by Service Researchers, who define it as the change of rules, norms, ways of thinking and practices which constitute a central process for enabling service innovation (Vargo et al., 2015). Service Design projects in this context are exemplified by the development of a collaborative platform among public, private and third sector organizations to support elderly (Hyvarinen, Lee and Mattelmaki 2015) and the design of a multi-actor platform (involving civil, public and private sectors) to co-design innovative solutions related to education, health, environment and economy (Yang & Sung, 2016). Therefore, results indicate that Service Design multidisciplinary contributions can integrate complementing perspectives to achieve changes at network and ecosystem levels, in order to create solutions for communities, public sector and society in general.

## Conclusion

This article identifies shared concerns among multidisciplinary perspectives on Service Design, using the service system as an integrative abstraction. A service system perspective is used as a concept to integrate Service Design multidisciplinary contributions across different levels, highlighting shared concerns in terms of actor-centered approach, processes and interfaces and the design of new constellations of actors and their connected roles.

This study contributes to support the design for different roles that actors can assume inside service systems, by involving multidisciplinary contributions that address their different perspectives (i.e. user, customer, employee and provider foci). Likewise, this study contributes to understand how Service Design multidisciplinary perspectives bring complementary contributions that can be integrated to support creating and improving service design and service delivery processes. Besides, the article presents different perspectives and concepts associated with service interface (i.e. resources and spaces, service evidence, service clues, servicescape, user interface), which can facilitate and enhance communication within Service Design multidisciplinary teams. Finally, results show that Service Design can integrate complementary perspectives to achieve changes at network and ecosystem levels (e.g. enabling sustainable solutions, improving public services, facilitating institutional change), thus enabling innovative solutions for communities, public sector and society in general. All in all, the article contributes to enhance communication and collaboration between Service Designers coming from different backgrounds, by elucidating the use of common concepts and indicating complementary contributions from multidisciplinary knowledge along different levels of service systems.

Further research is needed to explore other multidisciplinary contributions to Service Design, as in the case of Anthropology and Psychology, which were briefly cited by focus groups (SD3; SD4; SD6) as contributing to understand and design for the individual-actor level. Likewise, focus groups with Information Systems and Operations backgrounds identified, respectively, technology and service processes, as crossing all service system levels, thus asking for further research to better explore the potential contributions of these areas to Service Design. As future research, literature from Service Design multidisciplinary perspectives must be examined and integrated, in order to further explore each perspective contribution to Service Design. Finally, a practitioner point-of-view should be also explored to understand how Service Design integrates multidisciplinary contributions in practice and how this integration can support service innovation at different levels of service systems.

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## Perceived Action Potential: A strong concept in development

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### Abstract

Service encompasses multiple interaction processes among many different actors. Comprehending the subtleties of what drives actors resource integration activities could therefore be valuable when designing for service. However, these nuances are not necessarily always captured in early representations such as prototypes of service due to variation in individual interpretation of situations. This paper draws on strong concepts from interaction design as a generative intermediate-level form of knowledge, to conceptualise perceived action potential (PAP) as a strong concept through the use of illustrative examples. PAP refers to the subjective interpretation of an individual's (own) scope of action in new or unforeseen situations. This paper elucidates the implications of PAP for service design and suggests future research opportunities. In introducing strong concepts to service design, it also translates how strong concepts might be identified and subsequently constructed in service design research in order to aid practice.

**KEYWORDS:** service design, strong concepts, perceived action potential, value co-creation, resource integration

### Introduction

Over the past few decades, the understanding of service has undergone a transformation from a predominantly goods dominant logic to a service dominant logic (Vargo & Lusch, 2004). Service has been defined as the application of knowledge and skills for the benefit of another party (ibid). Other conceptualisations refer to services as direct moments of interactions between the user and supplier system (Sangiorgi & Clark, 2004). As active participants of a service, users bring their resources, competences and capacities into these interactions (Sangiorgi & Clark, 2004; Holmlid, 2012; Holmlid, 2017). How actors engage in a service is largely influenced by relationships and their willingness and ability for resource integration (Chandler & Lusch, 2015). Moreover, service encompasses multiple interaction processes among many different actors (Sampson, 2012; Tuunanen & Cassab, 2011; Holmlid

& Björndal, 2016). Actors may be involved in service experiences at varying levels, including, for example, the individual, group, organizational, or societal levels (Chandler & Lusch, 2015; Chandler & Vargo, 2011).

However, interactions may also be indirect implying different forms of value creation, where co-creation is a function of interaction (Grönroos & Voima, 2013). From a service dominant logic perspective, actors integrate resources and engage in service exchange, resulting in value co-creation processes (Vargo & Lusch, 2011, 2016). Systemic conceptualisations position service as dynamic value co-creation configurations of four categories of resources i.e. people, technology, organisations, and shared information (Maglio & Spohrer, 2008, p. 18). In all of these conceptualisations actors (users, suppliers, people) and how they combine resources figure prominently (Holmlid, Wetter-Edman, & Edvardsson, 2017). Thus, trying to comprehend the subtleties of what drives actors' resource integration activities could be valuable when designing for service. Although designing services encompasses the use of static or interactive representations such as customer journey maps, blueprints, enactments or other types of service prototypes to articulate insights (Blomkvist & Segelström, 2014), such nuances are not necessarily always captured as actors are subject to variation in service situations (Rodrigues & Holmlid, 2017). One way of doing this could be abstracting knowledge from particular instances to formulate intermediate level knowledge.

The Marketing Science Institute Research Priorities (2010, p. 10) point to the need for development of 'mid-range' theories and models that draw on constructs from various behavioural domains. The use of integrative research methods that provide a holistic overview of customer experience and behaviour are encouraged (ibid). As such, design-oriented research practices are conducive to more abstract knowledge construction, without aspiring to the level of general theories (Höök & Löwgren, 2012). Thus, specific design situations or collections thereof may be useful in constructing and shaping intermediate-level knowledge to support design research practice. Höök and Löwgren (2012) elaborate on a specific, generative intermediate-level knowledge known as strong concepts. First, this paper briefly introduces the notion of strong concepts using the example of touchpoints in service research. Second, through the use of illustrative examples this paper aims to conceptualise 'perceived action potential' (PAP) as a strong concept in service design research. PAP refers to the subjective interpretation of an individual's (own) scope of action in new or unforeseen situations. Next, based on the examples, the authors analyse what characterizes PAP as a strong concept, and how service design might benefit from such a conceptual tool. Finally, the authors conclude with the implications of constructing strong concepts in service design.

## Strong concepts in interaction design

Rooted in the field of interaction design, strong concepts are "design elements abstracted beyond particular instances which have the potential to be appropriated by designers and researchers to extend their repertoires and enable new particulars instantiations" (Höök & Löwgren, 2012, p. 23:5). Abstraction in this conceptualization refers to the applicability in other situations. However, strong concepts claim no universality and are more specific than theories.

Strong concepts have the following properties:

- They are generative
- they convey a core design idea, spanning particular use situations and even application domains;
- they are concerned with interactive behaviour, not static appearance;
- they are design elements and a part of an artifact and,
- they speak of a use practice and behaviour over time;
- and finally, they reside on an abstraction level, above particular instances.

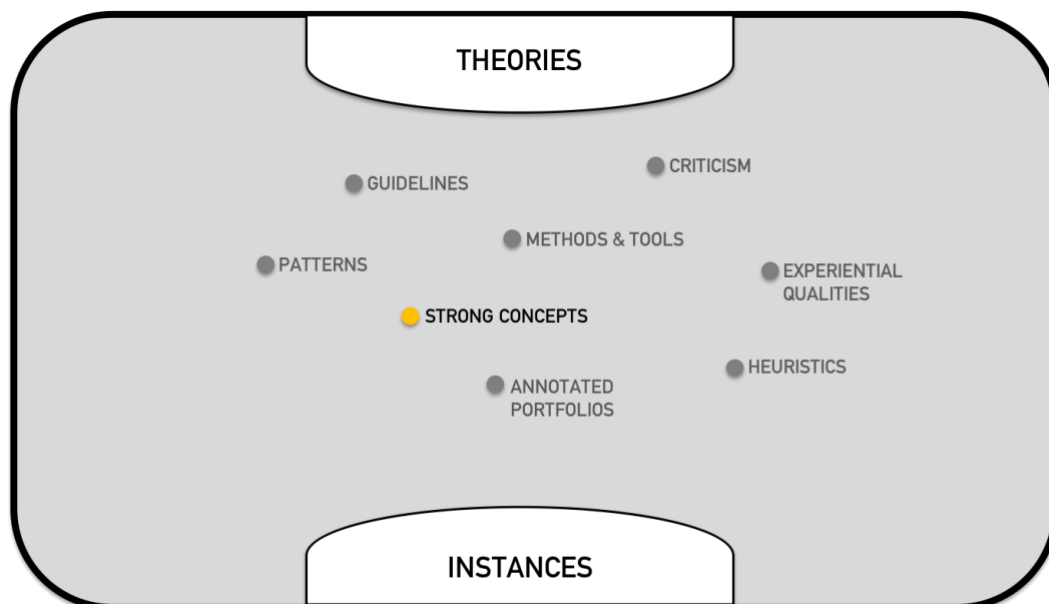


Figure 1: Intermediate level knowledge. Adapted from Höök & Löwgren (2012)

### Constructing strong concepts

According to Höök and Löwgren (2012, p. 23:11 – 23:13), construction of a strong concept entails the following steps:

1. A strong concept could originate in instances designed to respond to existing, specific use situations. Instances designed for exploration of a possible use situation, which do not necessarily aim at tackling any existing problem represent another possibility. It could also be instances designed to concretize or instantiate a specific theory of human behaviour. Irrespective of the origins, discovering candidates for strong concepts in a particular instance constitutes pinpointing the elements or principles in the instance that could be valuable in other design situations within the same category or domain as the original instance, or spanning genre/domain boundaries, depending on the abstraction level of the strong concept identified.
2. In order to advance the case for a strong concept into an academic knowledge contribution, the next step is horizontal grounding. Here, it is important to relate the strong concept candidate to other similar, existing concepts, focusing on similarities and differences that can help to understand the range of applicability. This step also serves an additional purpose of assessing the novelty of the potential knowledge contribution.
3. The following step is vertical grounding of the potential strong concept. This requires responding to the following questions:
  - a. Is the strong concept present in other known instances?
  - b. Can we use those other instances as a broadened empirical base upon which to learn more indirectly about the strong concept in use and thus be able to predict more reliably how it can or will affect use?
  - c. What theories is the strong concept an illustration or concretization of? What could the relevant theories say about the strong concept that would help us provide an even more substantial knowledge contribution to other designer-researchers?
  - d. And can the intermediate-level contribution represented by the strong concept inform theoretical development on a more general level?
4. Finally, the preceding steps illustrate that the work of reflection, articulation, and abstraction entails a triangulation of empirical, analytical, and theoretical domains. What is more, validation in the domain of design research is contingent not only on empirical experiments and theoretical grounding but also on the nature of the research process.

## Connecting a service concept to a strong concept in design.

Here we introduce what we consider an already established strong concept in service design: the service touchpoint. This illustration is meant to clarify how the notion of strong concepts can be applied from interaction- to service design. From a design perspective, touchpoints are considered an integral component in the conceptualization, and arguably the design, of services (Blomkvist, 2015). The origin of the word touchpoints as it is used in service design remains unclear (Blomkvist, 2015; Clatworthy, 2011). Generally, touchpoints have been described as points of interaction between a customer and service provider, primarily from the perspective of the customer (Clatworthy, 2011; Polaine, Løvlie, & Reason, 2013; Secomandi & Snelders, 2011; Stickdorn, Schneider, Andrews, & Lawrence, 2011). Thus, they are concerned with interactive behaviour, not static appearance. Nonetheless, they differ in the scope of their definition. Touchpoints are a fundamental feature of service design (Clatworthy, 2011), which include material artifacts, environments, interpersonal encounters and more (Secomandi & Snelders, 2011). As strong concepts, they are design elements and encompass artifacts. Parker and Heapy (2006) refer to touchpoints as the places and spaces where people experience services, hinting at their ability to traverse particular use situations and even application domains.

The idea of designing points of contact between a customer and a service provider has also been previously explored in service marketing research. Service blueprinting allows one to visualize and describe service elements and uses the 'line of visibility' to distinguish the interactions between the customer and the provider (Shostack, 1982). In addition, tangible evidence i.e. the setting, graphic materials and other things that define the service style are used by customers to verify the effectiveness of the service (Shostack, 1984). The blueprint lends itself to the creation of a service on paper and can be extended to mock-up a service prototype that provides actionable feedback (Shostack, 1982). In this sense, touchpoint as a concept conveys a core design idea, and acts generatively for design elements. The concept and its instantiations also speak of a use practice and behaviour over time. Finally, the concept resides on an abstraction level above particular instances.

## Perceived Action Potential

This section utilizes the steps outlined in the previous section and four instances encompassing real-life and design situations as vertical grounding in the form of illustrative examples to support the construction of Perceived Action Potential (PAP) as a strong concept.

### Example 1: waiting room

In a project oriented towards patient-centred care, the project team used insights resulting from interviews with patients and healthcare personnel to develop training videos. The purpose of the videos was to draw attention to uncommon situations in everyday practice and create sensitivity and empathy to the plight of the patients as well as colleagues. One of the videos focuses on the interactions at the reception of the primary healthcare centre<sup>1</sup>. In one situation, an elderly lady is at the reception to cancel her appointment. She is informed that she will be charged nonetheless. At the same time, another man arrives at the counter and asks if there is a slot available for the same day. The elderly lady offers to trade in her appointment time with the man, who readily agrees. However, the receptionist intervenes stating that it is not possible to barter appointments and she cannot do anything at this point.

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<sup>1</sup> Link to video: <https://bit.ly/2HJ9QnL>  
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Figure 2: Screenshot from training video (6:42)

### Example 2: grocery store

During the development of a meal planning and delivery service, the project team conducted a pilot test or service walkthrough (Blomkvist, Åberg, & Holmlid, 2012, 2013) to understand the flow of the service as a whole. The new service included an online tool for planning and ordering food from restaurants or grocery stores. This was the first time the whole service was being prototyped with actual customers buying food and having it delivered to their homes. An early version of the online tool was used, and the set up involved a grocery store, a local restaurant and a delivery firm. One of the authors conducted participatory observations at the grocery store, the restaurant and with the delivery firm. Despite rigorous planning with customer journey maps, service blueprints and flow charts, several aspects of the service had not been considered during the previous design efforts. For instance, when it was time for the groceries to be put in bags, there were no instructions about how to keep track of what bag belonged to what order, no instructions about what to do if a specific brand of a product was missing, and no extra hours set aside for staff to bag the orders. In these instances, the staff was unsure how to proceed and what would be the best course of action.

### Example 3: hotel

This example is drawn from real-life. At Hotel X, where one of the authors was working at the time, the regular event booking process involved the event sales executive being contacted by the customer via email, telephone or in person. Once the customer has decided on the venue, the details of the event are recorded in the online booking system and a confirmatory email and contract is sent to the customer. In one instance, the sales executive forgot to record the booking, resulting in the service operations team being unprepared for an event that was confirmed to the conference organizer. This proved to be a harrowing experience for the organizer, who arrived to find an unprepared venue and was inadvertently put at risk of losing his job. Furthermore, it was also stressful for the employees who had to come up with a solution there and then, this included re-allocation of staff, setting up the venue and catering to nearly 60 people within 45 minutes. Consequently, the booking process was reviewed and new measures were put into place to prevent similar occurrences.

#### Example 4: showroom

During the later stages of a two-month innovation process for a new service at a large telecom company a service walkthrough was conducted. Customers from different segments were invited to participate in the walkthrough. Depending on their own predefined journey, they would visit four mock stations in varying order. The stations consisted of a smartphone application prototype, a customer service area, a phone store, and a debrief area. All participants, including the customers, had been given a script. In one instance, one of the customer participants asked about the price of mending a broken smartphone (as part of a scenario). When the person working behind the counter at the store told the customer the price, there was a strong reaction – the customer obviously found the price to be too high. However, as the script did not allow for any debate about this, the customer simply had to agree to the price for the service walkthrough to proceed.



Figure 3: Snapshots from the service walkthrough in the showroom

#### Forming the strong concept

Unlike strong concepts in interaction design, it is often difficult to identify a specific artefact with material properties to tie strong concepts to in the service context. Instead, reoccurring situations or constellations of people and resources can be identified as a ground for concepts. Each example of PAP in the previous section, has generalisable features when examined as a group. We summarise the common denominators here to illustrate on a more general level how to recognize an instance where PAP can be useful to consider from a design perspective. This is in line with the first step of constructing strong concepts wherein elements that can be meaningful in different situations or genres are identified.

The examples illustrate situations where one or more employees find themselves in a situation outside of the normal everyday routine. In these situations, each person has their own perception of the potential actions and associated resources available to them and possibly others involved in the situation. Identifying several independent occurrences is part of horizontally grounding the concept (Höök & Löwgren, 2012). Each example illustrates a point of interest for service design, considering the far-reaching implications of potential design decisions. However, to be able to treat PAP as an actionable design situation, there needs to be some way to identify where it is relevant. Since one of the main goals of having strong concepts is to be able to pinpoint the elements of instances that are valuable in other



design situations we must look a bit closer at the illustrative examples and consider the options they present for design. The design elements include:

- Improvised employee actions
- Resources that enable those actions
- Mandate for improvisation and adaptations

Since PAP is experienced by employees and others in a service situation as a set of options, it is up to them to act based on what they perceive that they can do, and sometimes improvise solutions. This is an interesting element of design since the ability to improvise is probably considered to be outside the scope of most design disciplines. Instead, we suggest focusing on preparing and training staff to make decisions on the fly during actual service encounters. Example 1 is a good illustration of this. The waiting room experience exemplifies a novel situation for the employee who is faced with a decision. The employee in the example decides to deny the exchange proposed by the elderly lady. Figure 4 visualizes the involvement of actors in the situation and highlights the lack of an overlap in the PAP of the receptionist with that of the elderly lady and man who were willing to trade appointment times. Another option would have been to ask the man if he would be willing to pay the fee instead of the elderly lady. Yet another option would have been to simply permit the change, contingent on the booking software allowing for such a modification. However, often in situations like these, support systems or other resources available to the employee might not allow improvisation, nor simple adaptations. In addition, regulations, laws and policies are other factors that influence the situation. Thus, actions and resources can both be subjected to design decisions in PAP situations. Another important aspect is the mandate, or division of labour, and its allocation in the service. The possibility to improvise solutions for the benefit of customers is governed partly by a sense of what is right and wrong – is it really ethical and acceptable that someone who can pay to cut in line for healthcare should be allowed to do so?

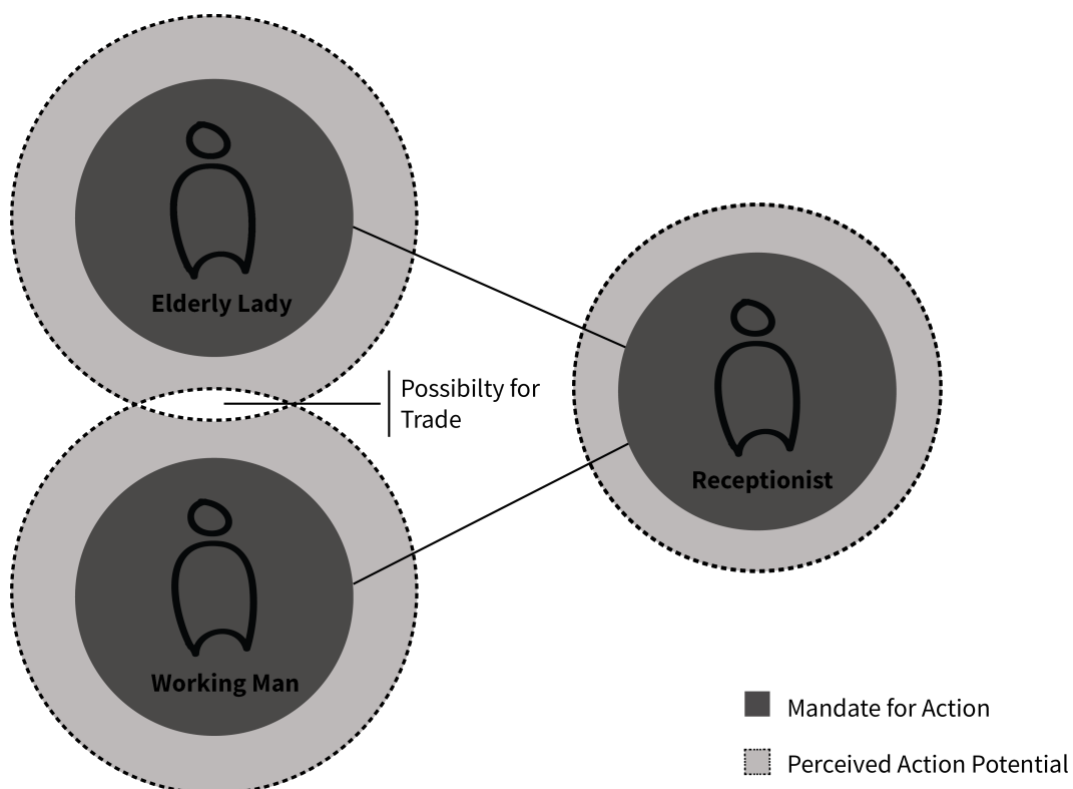


Figure 4: Visualisation of the Perceived Action Potential of actors in Example 1

Example 2 illustrates the PAP of an employee during development time of a food delivery service. In this example, the improvisation is not targeted towards a customer directly but rather the resources that the service should provide for the customer. Consider for instance if the right grocery, e.g. ketchup, is available in the store, but it is not the right brand. As an employee in this situation there are many alternatives to tackling this situation. The option of not packing any ketchup was perfectly viable, as was making the decision to include another brand of ketchup. However, although the service was still in the development stage, the walkthrough involved actual customers who needed to have their groceries delivered to them. Thus, if the decision was to not include any ketchup, this had ramifications beyond the specific situation: should the customer get refunded? And how, if at all, should the customer be informed about the missing grocery? The employee could write a note and include it in the shopping bag, try to inform someone about the issue or simply ignore it. The reason this situation occurred is that the development so far did not take into account this "exception". However, there will always be exceptions and the more general question for design is how to prepare for them.

The hotel example (example 3) shows an active service situation where a previous mistake introduces a novel situation. Once again, denying the customer's expressed wish (as in example 1) was a viable option. However, the employees in this situation chose to quickly readjust and respond to the new situation. The resources required (room, chairs, tables, manpower, etcetera) to accommodate the customer were part of the normal, everyday routine. Thus, the employees felt that they had the possibility to carry out a service recovery. Example 4 shows how the opportunity to improvise can be completely shut down during design time by providing a predefined path for the participants of a service walkthrough. If the walkthrough had allowed the employees to take initiative, for instance by defining the boundaries and then encouraging free enactment, the outcome could have been very valuable. For one, the expectation of price for the service could have been identified, explored and negotiated. Also, the more general question of what happens when a customer feels that a service is overpriced could have been investigated. For instance, is the employee allowed to bargain with the customer? Can the service be manipulated to satisfy both the service provider and the customer? Can individual exceptions be made and who decides the boundaries of such exceptions? This illustrates how choices made during the design process about the elements that influence PAP can have far reaching consequences.

## Distinguishing PAP from related concepts

In this section, we focus on the horizontal grounding of PAP by examining similar concepts to shed light on the novelty and applicability of PAP. One commonality through the examples is that it is novel instances or variations in service situations that allow the theoretical concept of PAP to surface. The hotel, waiting room and showroom examples highlight a 'zone of friction' while the grocery example highlights a 'zone of novelty' where PAP reveals itself. Through the examples, elements in particular instances spread across different service situations and contexts are identified. Further, one can distinguish elements of PAP, for instance, where an individual may perceive improvisation as beyond their scope of action and stick to textbook processes. Improvisation has been defined as the temporal convergence of composition and execution (Moorman & Miner, 1998) or as the conception of action as events unfold while drawing on available resources, (Pina e Cunha, Rego, & Kamoche, 2009), implying a bricolage dimension (Cunha, Cunha, & Kamoche, 1999). As such improvisation situates decision making (Pina e Cunha et al., 2009). In the same vein, the conceptualisation of PAP is also linked to the decision-making capacity of an individual in a particular situation. However, since PAP points to the latitude or freedom of action available to an actor, improvisation represents only one facet of PAP. For instance, an actor may exercise her PAP and choose not to improvise despite access to resources. Another concept closely related to PAP is empowerment. Empowerment relates to the ability of employees to use their discretion and actively participate in unusual or unexpected situations (Boshoff & Leong, 1998). While it is not necessary in all situations, as a strategy it can prove to be useful



to successfully deal with unanticipated situations that require imagination or creativity on the part of the employee (ibid). Empowerment is a matter of degree and can be distinguished on four levels (Bowen & Lawler, 1992). The lowest level termed the production-line approach, refers to effectively no empowerment. The next two levels, termed suggestion involvement and job involvement, refer to partial empowerment of employees. The highest level of empowerment promotes a sense of responsibility among the lowest level employees for the entire firm's performance. Thus, from this perspective empowerment can be viewed as a top-down approach. In contrast, the locus of control in the conceptualization of PAP lies with the respective actors and may or may not be influenced by the degree of empowerment. PAP is also differentiated from the agency of individual, wherein one has the capacity and need to act thereby shaping social structures (Giddens, 1984). However, while these distinctions serve as a starting point, developing this as a strong concept calls for more vertical and horizontal grounding. We suggest that Perceived Action Potential could be viewed as a strong concept, precisely because it is an aspect of a suggested future situation of service, is generative in the sense that it provides design possibilities and expresses intermediate knowledge.

## Implications for service design

The concept of PAP would be valuable in other design situations to frame the nature and scope of the resources that actors can draw on during service in order to carry out the service to its fulfilment in a meaningful way. It underscores the contextual factors i.e. norms, resources, processes and relationships that an actor orients to thereby affecting PAP. At the hotel, availability of necessary resources and strength of relationships played to the advantage of the hotel staff, enabling them to act and provide the service despite the mix-up. In the waiting room, the patients felt it was not beyond their capacity to simply switch their appointment times but the receptionist saw this as a breach of the system rules and regulations. At the grocery store, employees were ill equipped to carry out certain tasks as they had no precedent and were not in a position to guess what the customer might prefer. In the showroom, the interruption in the service walkthrough went unattended, as it was not part of the script. Thus, it points to the interdependencies between the configuration of resources in a service system and schemas that shape actors during resource integration and value co-creation (Edvardsson & Tronvoll, 2013).

In order to explore these interdependencies and how they might affect the service experience, designers can look toward applying a sandbox approach when prototyping services. This would entail giving participating actors the freedom of action without a stringent linear storyline in order to meet a certain service goal. Loosely defining boundaries and not having to follow a pre-defined script might allow for emergence where actors draw on available resources as the events unfold without feeling stifled. Thus, abstracting the concept of PAP has implications for studying possible improvisation during design time. Designers can then use this knowledge to modify elements and aspects of the service to support better resource integration and better experiences. In addition, designers can swap actor roles and vary the environment and resources being used while conducting walkthroughs to allow actors' working mechanisms, mental models and knowledge on actors' resource integration activities to surface. From a network perspective, attention to PAP can also shed light on the shared understanding and mutual intelligibility of the situation as viewed by the those involved and how it subsequently affects their course of actions. Resourcefulness, as earlier proposed in Holmlid (2012), is related to PAP but is more general, and provides less generative direction. Figure 5 represents some of the ways PAP of actors may intersect. This work responds to the call listed in the Marketing Science research priorities (2010) and lays the foundation for methodological developments related to PAP in service design. Future research could examine how undertaking a collaborative, sandbox approach to prototyping services could benefit designers in enhancing the service experience and subsequent value creation.

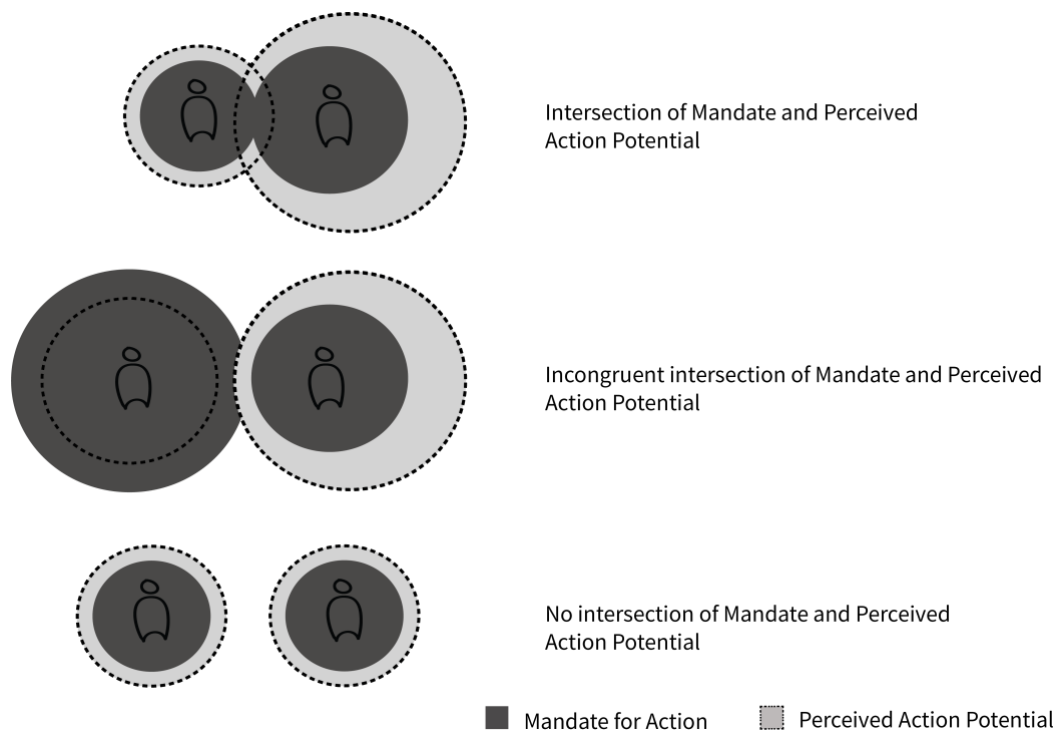


Figure 5: Visualisation of the possible intersections of Perceived Action Potential amongst actors

### Working with strong concepts

The intermediate level of knowledge that is embodied by the idea of strong concepts, has been applied in developing PAP. However, in design for service, the articulation of strong concepts based in interaction design, is not enough. Given this, we suggest that strong concepts in design for service could be described as follows:

Table 1. Comparing features of strong concepts in Design for Service & Interaction Design

Strong concept	
In Design for Service	In Interaction Design (Höök & Löwgren, 2012)
the intermediate-level knowledge includes generative strong concepts	the intermediate-level knowledge includes generative strong concepts
Strong concepts are partial ideas, that are <i>aspects</i> of potential design solutions, that can be appropriated by designers and researchers, and used in the creation of new instances	Strong concepts are partial ideas, that is <i>elements</i> of potential design solutions, that can be appropriated by designers and researchers and used in the creation of new instances.
Strong concepts concern the dynamic gestalts of design solutions, that is, <i>situated actions</i> rather than static appearance	Strong concepts concern the dynamic gestalts of design solutions, that is, <i>interactive behaviour</i> rather than static appearance.
Strong concepts reside in <i>co-creation of value</i> : they are potential <i>aspects of service situations and systems</i> , and at the same time, they speak of <i>resource integration practices</i> over time	Strong concepts reside at the <i>interface between technology and people</i> : they are potential <i>parts of artifacts</i> , and at the same time, they speak of <i>use practices</i> over time.
Strong concepts convey a core design idea,	Strong concepts convey a core design idea,

Strong concept	
In Design for Service	In Interaction Design (Höök & Löwgren, 2012)
spanning particular <i>service</i> situations and <i>systems</i> , and even application domains	spanning particular <i>use</i> situations and even application domains
<i>Touchpoints</i> , <i>service phrases</i> and <i>customer journeys</i> are some examples of strong concepts	<i>Social navigation</i> , <i>seamfulness</i> , and <i>trajectories</i> are some examples of strong concepts

It is also reasonable to believe that design for service research can be one route to construct such intermediate knowledge, and that strong concepts are part of discursive knowledge construction across disciplines and practices.

## Conclusion

This paper introduces strong concepts from the field of interaction design, as a form of generative, intermediate-level knowledge. The example of touchpoints was presented as a strong concept in service design. The strong concept in formation, perceived action potential was explored as meaningful tool for understanding actors' resource integration and ensuing value co-creation in unusual situations. Roughly described 'perceived action potential' (PAP) refers to the subjective interpretation of an individual's (own) scope of action. In each of the examples mentioned previously, service personnel had to make decisions and propose a course of action or lack thereof in an unusual situation. The more general theoretical notion of PAP manifests itself in concrete everyday as well as enacted design situations. The word 'potential' reflects the latency and future-orientation associated with the actions that one may carry out at any given time in any situation. In bringing strong concepts to service design, this paper translates how strong concepts might be identified and subsequently constructed in service design research to aid practice.

## Acknowledgements

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## Design the impact

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### Abstract

These days, operating in a globalised society means creating the certainty that everything, or almost everything, will work. It means comfort, and this often translates into uniformity and across-the-board expectations, producing reliable experiences and services. Within this context, companies and institutions have discovered “**service design**”, **embracing it on a massive scale** because **they see it as the way to design and produce the services society wants**. Services, or service designs, **have therefore become an inclusive system for all, a guarantee of fulfilled expectations, each and every time**. Service design is now the cornerstone of all companies. It has become an essential, almost industrial process based on people’s expectations. **However, this has produced a one-dimensional vision of service design. A functional vision.**

**KEYWORDS:** impact, need design, from strategy to life, relationship, positive experiences, beauty, challenges

### Introduction

The adoption of the tools (customer journeys, touchpoints, personas, blueprints, etc.) and typical language of service design **have become procedures** that are standardising expectations. The risk is that, if everyone is using the same tools and techniques, we will all produce the same results and the same services with no sense of originality or difference. Our service has become one of many. We run the risk of our tools becoming matrices and goals instead of actually being there to help us continually re-design and rethink the true transformative objectives of the design, like a craftsman does by continuously polishing and forging his tools.

**We are therefore faced with the risk of homogenisation, standardisation, cultural, creative and emotional impoverishment, loss of originality**, the creation of soulless ideas, services and designs. Designs that leave no mark; designs and services that fail to excite or move.

**Suddenly, we are all worse-off.** We realise that we are no longer able to create anything unique or have a real impact on the lives of people and society.

Adopting service design techniques provides us with tools and gives us a common platform, but **how can we train people’s mindsets – their talent, how their minds are**

**“configured” – in order to create a truly unique project? Which moments of service design will create an impact in the future?**

A project creates an impact if its development involves:

1. **understanding *needs* and managing the *design* as an original perspective that accepts disruption**, by:

- a. **implementing “*need design*”**. The designer’s top priority is to meet their customer’s needs. However, how many times, when talking to customers, sharing some snippets of work and life with them (dialoguing, collaborating, interpreting), have we discovered just how much more complex their need was, how much richer, how much deeper and how different? How much more interesting and challenging? The true top priority - the real need - was right there. **Performing “*need design*” means training the mindset** of all stakeholders involved to stimulate synergies between creative and analytical thought in order to develop practical solutions for real needs. Identifying needs and building a landscape of design opportunities is the primary challenge guiding the design.
- b. **opting for multidisciplinary teams** that go beyond being designers. This enables us to develop critical thinking from a number of viewpoints and to break free from standardised thought.
- c. ***not virtualising the end customer***. Designing services for people, not users. Thinking we are serving mere users means being under the impression that we are dealing with someone who just needs a tool, be that a product or a service: a convenient customer for those offering a ready-made process or package. A person, on the other hand, is a network of relationships.

*Case study: How can we avoid virtualising the customer and meet their needs to create a useful yet unprecedented service for the automotive industry? In a context in which transport is changing, the company’s challenge was to include services based on a product with a strong, distinctive personality, focusing on the needs of its end customers, but not only. It had to listen to and interpret the needs of the entire ecosystem of service stakeholders. The project involved developing the Customer Experience: from the concept to designing the Customer experience, from planning the digital “presence” of the service - App and Landing interface and videos supporting the launch and physical presence – to communicating with and supporting the network of dealers and car parks. In order to avoid virtualising the customer, many tests were carried out with customers and potential customers, who were involved from the start of the planning process. These included exploratory workshops, surveys and field usability tests conducted directly with the service’s end users to understand their viewpoints and, in particular, the obstacles to service implementation.*

2. ***beauty as an essential and creative need***.

Beauty is one of man’s basic needs. It is not the coincidental or clever result of some action or other. It is not a goal, but is always a starting point. Like a vital necessity or a meeting that changes the course of things. Dostoevsky wrote that humanity could not survive without beauty because “there would be nothing left to do in this life”.

**Beauty is a human need that drives man’s actions, that produces design, the design of a meeting that transforms, that transforms us.** Service designs must generate perceptual changes and changes of state, they should disrupt and surprise. **When beauty takes people by surprise, it frees the imagination and fosters new types of behaviour.** This is what we call ***design détournement***. Because if beauty is in the eye of the beholder, it certainly also has to be in the mind of the person designing it.

*Case study: how can we design a service platform for children that will successfully engage several generations in order to provide real value? The quest for an aesthetic language was one of the keys that enabled people to relate to the service on an emotional level. Thanks to its content, communication, interface and engagement of the various stakeholders involved, the service surprised and appealed. The language enabled us to give it its unique edge, but also created opportunities for feedback and continuous engagement.*

3. **Service as a relationship. By following the project right through to its completion (*Execution*), we can shape ongoing relationships between Brand and People (*Lifecycle*).** People live in a network of relationships. And this network gives meaning to their experience. The most pressing demands people have – their most active, deepest needs – are those of understanding, acting and growing (transforming), using those relationships as a starting point. Therefore, for the service to be successful, it has to immerse itself fully in people's relationships, guiding customers through to completion and planning alongside them. If designing a service means designing a relationship, then it means going beyond the concept and idea. In fact, the real challenge begins when we work on the *Lifecycle*, i.e. the day-to-day maintenance of the service so we can continue developing this unique relationship with the people involved.

*Case study: How can we support and motivate people in a Sales Network every day by using an ongoing digital service?*

*Through a community service that aims to maintain and develop **constant, high-value contact** with the network and **with individual agents**. The agents are provided with useful, exclusive **services, content and tools** through a **fast, reliable channel** for support, exchange, training on marketing and digital matters, communication, problem-solving, monitoring and sales activity. Engagement by Design is the essential ingredient to keep people's motivation up by bringing the service to life every day and maintaining engagement through gaming activities.*

The mass adoption of Service Design has definitely made it possible to create more solid relationships between customer, company/brand and market. Future risks to avoid include:

- “virtualising people's real needs”. Whether we like it or not, people are the only tangible element of a service. They are not simply users.

- “standardising the level of service”. We can no longer concentrate solely on function.

Instead, we must attend to the customer's needs and understand them. We have to accept the disruptive element which guarantees engagement and uniqueness in the method, in the planning process and in the design of the service and in its Lifecycle.

How will service design develop in the future? In the future, the difference will be between services that are effective and those that are not. “Nothing ineffective is of any value,” wrote Simone Weil. Effectiveness is a measure of what is happening, as we act and think in relation to the world, the company, work and the people involved.

Services are “relationships between people”, to be designed, nurtured and fostered within and outside of organisations. When a process is effective it tangibly and manifestly transforms the people, and therefore the company. The rest is just all talk.

## About Logotel

Logotel is a Service Design Company that works collaboratively with companies to plan and foster business change. Its team of over 180 professionals (in Milan, Paris, Madrid and Brussels) designs and develops services on an international scale, from strategy and delivery to the “lifecycle” of projects. Logotel's approach combines a variety of disciplines and skills, always “People & Design Focused”, making innovation practical, engaging the networks of organisations distributed throughout the local area and redesigning relationships between brands, internal and external customers to produce real impact. Logotel worked for more than 60 different customers in 2017; it involved 5,000 people in training projects and connected more than 80,000 with the 31 Content and Business Community Networks that



provide services and content, motivate, enable sharing and encourage participation. It launched the **Weconomy** project in 2010 with a network of over 200 people, 25,000 printed copies and 30,000 downloads. The project explores the evolution of the new collaborative economy. For 7 years, the **Logotel Horizon** project has been trialling multidisciplinary teamwork to shape the Future.

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# Enhancing industrial processes in the industry sector by the means of service design

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## Abstract

Improving customer experience and business performance by improving employee experience summarizes **Weasy**, Saint-Gobain Business Glass Europe's Pan-European project. Saint-Gobain BGE commissioned a project spanning countries, cultures and markets in order to design a digital transformation process requiring technical alignment, field adoption and management endorsement. Handling sales and industrial processes as a service was Attoma's winning approach in order to deliver actionable UX design recommendations while facilitating change and adoption.

**KEYWORDS:** supply chain design, business and industrial processes, digital transformation, industry 4.0.

## Handling sales and industrial processes as a service

The Saint-Gobain Business Glass Europe (BGE) is a Pan-European B2B glass transformation business. BGE transforms large sheets of flat glass into double glazing, facades, sheets for urban property, showers, shelves, ... Having concluded – following an internal management immersion – that better client experience would not be possible without improving employee experience, Saint-Gobain undertook a European wide project to improve customer service employee experience in the supply chain.

The complexity of the project was amplified by differences in local markets, local practices and organizations – the business has been built up through several acquisitions – and by differences in underlying IT systems and data management. To compound this, no less than 5 technical teams were engaged in building the unified replacement IT platform, hence the project as a whole faced an overwhelming level of complexity. Finally, business transformation doesn't happen in a pit stop, BGE's product portfolio is larger and larger, tailors to more and more specific needs.



Figure 1. From buyer's order to delivery through a seamless integrated experience.

In its bid Attoma, a leading European Service Design and UX firm headquartered in France, introduced the idea to use Service Design methods and tools to put “real life” at the very core of the project. Attoma's assumption was that designing B2B sales and industrial processes and services, are today the very same matter. Just look at the first “Service design principle” as stated in “General Principles of Service Design” by The Interaction Design Foundation (<https://www.interaction-design.org/>):

- **Services** should be designed based on a genuine comprehension of the purpose of the service, the demand for the service and the ability of the service provider to deliver that service.

And compare it with the following:

- **Processes** should be designed based on a genuine comprehension of the purpose of the process, the demand for the process efficiency by the agents performing the tasks which structure the process itself, and the ability of the company to deliver and ensure the quality of that process.

Moreover, just like a service, such a process is delivered and performed on a series of diverse touch-points, which require a clear understanding of the alignment model between technical components and the company organizational architecture – which is, in fact, a typical “Service blueprint” model.

Therefore, Attoma proposed Saint-Gobain BGE with a *ad hoc* approach deeply inspired by the typical methodological framework used while designing a real service.

## Methodology

For instance, user research was extensive and included all concerned by the project: users, stakeholders as well as the technical team. The research covered 4 countries (France, Germany, The Netherlands, Denmark), 10 sites, 137 interviews – from the CEO and country managers to Regional and site managers as well as supply chain staff. Insights into

the technical situation was also developed through workshops with each of the 5 technical teams

Equipped with this research and its typical outcomes (personas, user journeys, use cases) several co-design workshops were held in order to establish priorities and roadmaps as well as develop a dynamic functional mock-up supported by a Design Guide. Main activities were:

- On-site immersion and interviews with various stakeholders (10 branches in 4 different countries)
- Interviews with more than 10 stakeholders in Europe (managers, producers, and distributors)
- Team interviews and workshops with employees in inside and outside sales, IT, and planning
- Two workshops to define functionality priorities
- 6 co-design workshops with the project teams (IT and sales)
- 3 on-site user tests on low fidelity prototypes
- Deliverables: a click-through high fidelity prototype (InVision) with their graphic UI resources; a Design Principles Book; a set of communication materials for internal awareness purposes.

## Results

The assessment made by the BGE team with Attoma allowed to forecast several factual wins.

Beside fully satisfying tender's requirements – calling for the design of a tailor-made, global IT solution for order management, allowing a simplified order entry through a standardized process –, the design methodology ran by Attoma introduced a dramatic improvement in the CRM-CPQ-OMS chain, thanks to faster processing times and optimized coordination of customer support between inside and outside sales teams. For example, cutting down the need for external resources (paper, analogue archive, informal knowledge, etc.) is an actual time gain and reduces operator's stress.

Moreover, the service design deliverables and rituals managed by Attoma facilitated internal communication, stakeholders' alignment and decision making, while creating awareness and building knowledge on the process itself. Eventually, the clarity of the user interface and its alignment with the user mental model led to faster training.

## Reflections

In large scale projects such as this, user acceptance or even advocacy is not a given, and the fact of having a design agency visiting, establishing a dialogue with users and demonstrating to them that their experience was clearly understood was a strong message. Likewise, after some initial pushback given on the technical side, not only was the service design approach subsequently understood as a clear way forward, it was also understood as a method for ensuring coherence and consistence of the project. Finally, management was convinced that the “voice of the user” and impact would actually be taken into account on the one hand while feasibility would be taken into account on the other.

At the end, the UX of the project was as much about the outcome of the project as well as the adoption of methods and the ensuing convergence of the experience of the project itself. Hence the user experience of this project is about the project as a process as well as the project as an outcome.

The success of the project was based on dealing with fears and beliefs, issues of control and confidence and – of course – communication. This led to the production of quite a number of artifacts ranging from feedback to sites visited to board room posters and tight inclusion

of the design process as an integral and fully-fledged member of the project (at executive and operations levels). BGE sees design as a real leverageable investment that insures that the project is reality based, as an area for “zero compromise”.

In the end, if BGE wants key members of their supply chain to be able to spend more time with their clients, then the matter is simple enough: their day-in day-out employee experience has to be as smooth and as efficient as possible.

## Conclusions

This case study introduces a wider reflection about the practice and the identity of service design. In fact, in a general trend towards a the so called “Service Dominant Logic”, spreading in the manufacturing sector, service design is asked to open itself to some key domains, as organization design, industrial processes design and Human Resources.

Moreover, at Attoma we believe that the fast-forward development of Industrial Artificial Intelligence, Machine Learning and Automation, calls for a radical review of all design processes, methods and tools in the manufacturing sector. Indeed, service design is the perfect practice candidate to embrace such a change. But it must evolve. Evidence based research, embedded in future actual projects as an explicit part of the protocol, is expected to deliver actionable insights allowing designers and managers to bear with the urgent needs of what is called the fourth industrial revolution.



Figure 2. Real life experience observation and analysis.

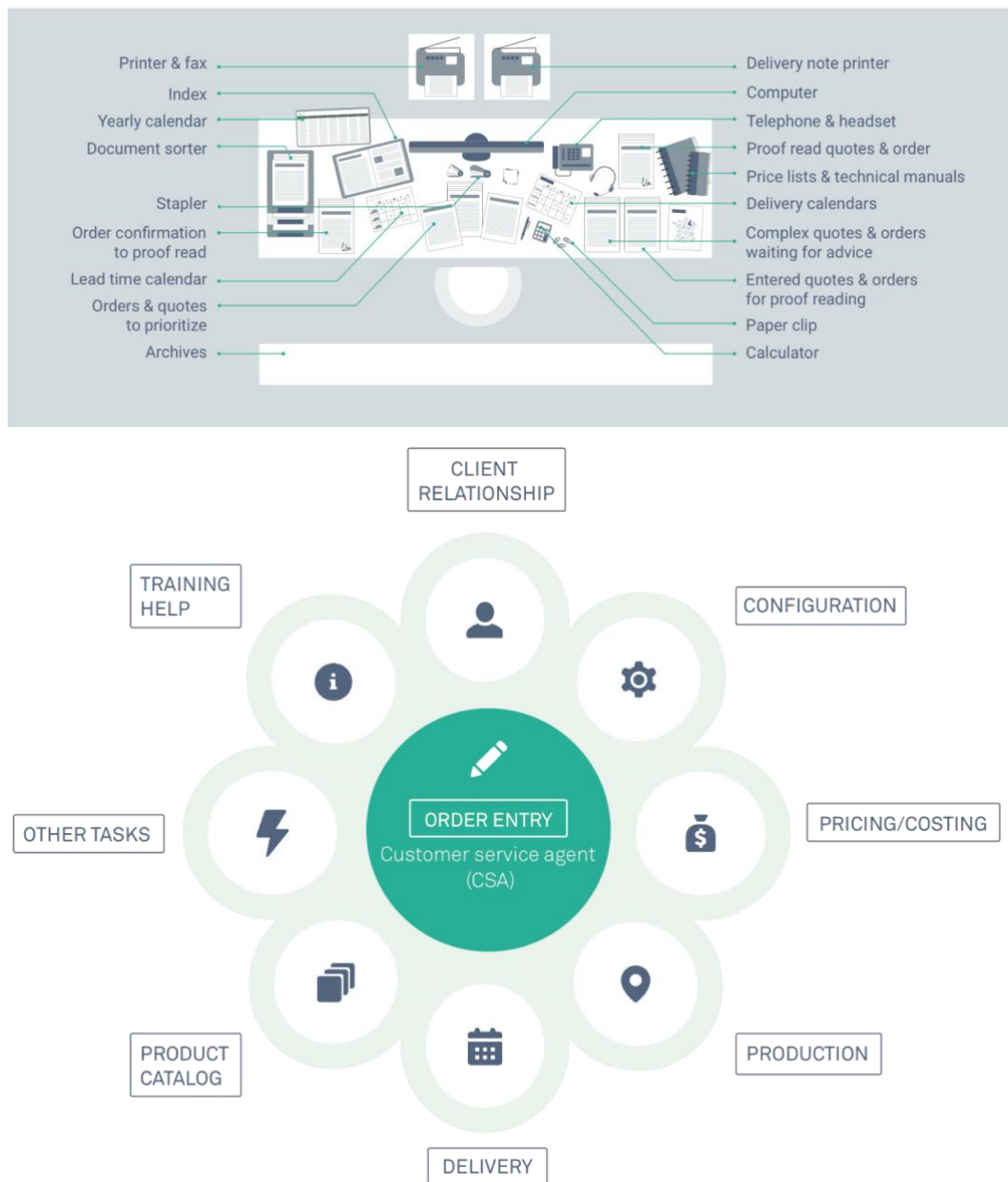


Figure 3. Field work allowed to model high level functional and information architecture, with a clear understanding of agents' roles, process workflows and critical points.



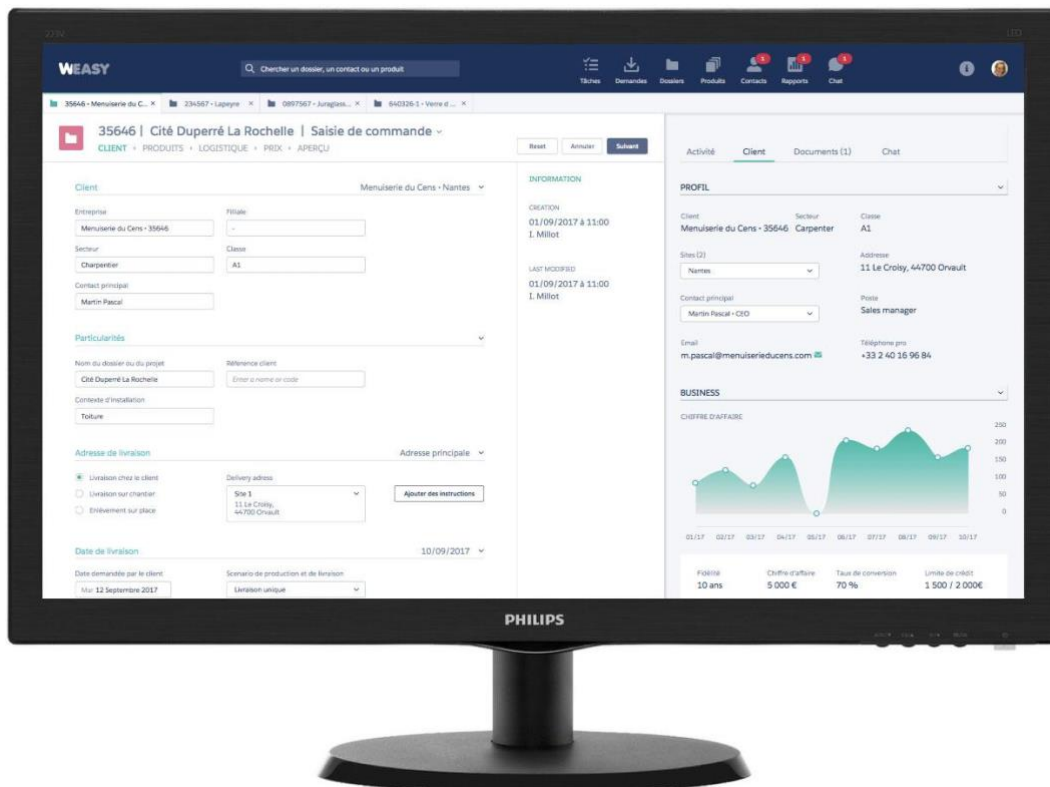


Figure 4. Intuitive layout and operation, plain language, user centred information architecture: a final user testing phase endorsed the design principles defined by Attoma for the Weasy user interface.



*PhD Special Seminar*

**ServDes2018** - Service Design Proof of Concept  
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## The PhD Special Seminar on service design: unfolding a proof of concept

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### Abstract

The PhD Special Seminar of “ServDes.2018 Proof of Concept” Conference (June 18-20, 2018, Politecnico di Milano) was a unique space dedicated to PhD candidates and Early Career Researchers within the Conference. It aimed to be an occasion of reflection on the different nuances that guide service design research to further discussion on the topics launched by the conference, conceived with the ambition to build a connection with the contents and the structure of the conference itself and, especially, with the ambition to strengthen the growing international community around the Service Design discipline. It was curated and managed by a team of PhD candidates and young doctors from the PhD programme in Design in the Politecnico di Milano - Design Department, with the support of the ServDes.2018 management and organization team.

**KEYWORDS:** service design scenario, community building, PhD community, PhD seminar

### Unfolding a proof of concept

#### Scope of the seminar

As the ServDes 2018 Conference Call states, Service Design (SD) is no longer considered an emerging discipline. The conference presents itself as a proof of concept:

*“it is time to validate and review the models, processes and practices developed and used in the service design ecosystem, from its academic community to practitioners, companies and organizations at large”. (“ServDes.2018 Proof of Concept” theme, call for papers).*

Therefore, discussions around contributions and reflections that advance the knowledge of a field in constant evolution became the primary resources of the doctoral and young

researcher. PhD candidates and Early Career Researchers from across the Service Design discipline who are interested in open discussion around this evolution in the field were invited to participate in a three-hour debate and warm-up the conference.

As stated above, the main purpose of the seminar was:

- to strengthen the growing international community around the SD discipline,
- to build a link with the conference topics and structure, and
- to create a space to reflect on the different nuances that guide SD research,

with research questions (defined in this paper as “incoming”) from the participants as a starting point.

In fact, the seminar acted as a bridge: it took place on June 18th, just before the grand opening of the conference, and it “unfolded the proof of concept” by warming-up participant reflection and transforming it into shared questions (defined in this paper as “outgoing”) to be launched in the conference sessions.

## Building dialogues with the conference

The core aim and primary interest of the event was to create a network and community of researchers interested in SD, giving them the chance to discuss and exchange ideas, research questions and interests, and expose them to the visibility offered by a conference like ServDes. After a fruitful discussion inside each cluster, each team generated other more robust “outgoing” questions enabling further discussions around the conference tracks through the Ambassadors.

The Ambassadors were representatives of each cluster selected to bring into the ServDes Conference sessions a series of open questions developed during the three hours of the PhD Special Seminar activities. These representatives worked as a bridge between the results of the event and the core of the conference.

Each of the participants brought their reflections around service and SD research to share with others and enable discussions. The discussions provided all participants with new, valuable reflections for their research, as well as for their knowledge and view of the SD discipline.

Having an active voice inside the conference not only creates a younger research community but also gives it an active role in the service design proof of concept. The event was not developed for participants to present their research and explain it, but rather to highlight their research in an international peer environment, enabling a coordinated questioning from the PhD and young researcher community to the conference debates around the field of SD. These open questions (outgoing) stimulated the track chairs to spark discussions inside the conference sessions with fresh topics. (Fig.1)

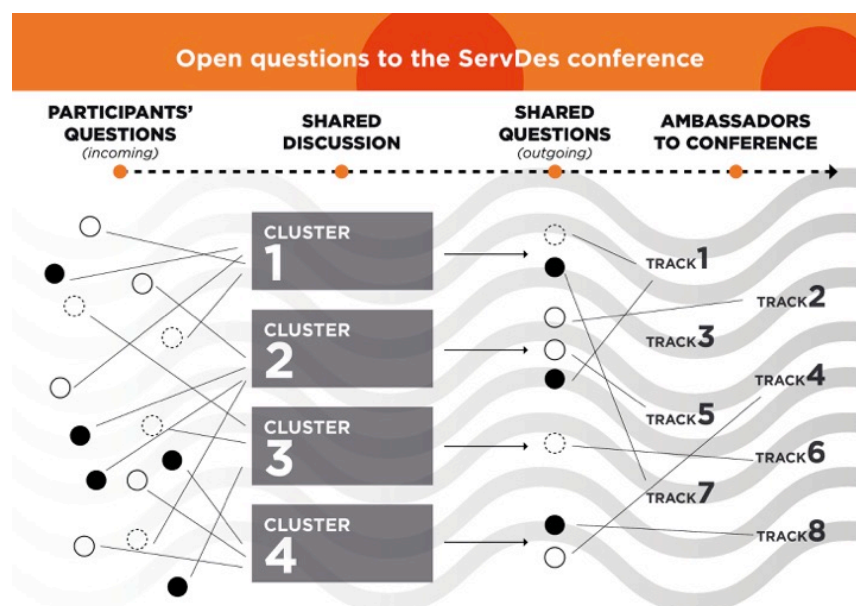


Fig.1: Diagram showing how the incoming questions built the clusters' definition, went through their shared discussion, generating outgoing questions to be launched into the sessions of the conference via the Ambassadors.

## A growing international community

The PhD Special Seminar was curated and managed by a team of six PhD candidates and 2 young doctors from the PhD programme in Design in the Politecnico di Milano - Design Department. During the seminar, we defined ourselves as “navigators”, in line with the metaphor of the event as illustrated below.

The Seminar call summoned 22 participants out of 25 applications. Among them, 19 were PhD candidates and 3 held senior positions: one Adjunct Professor, one Assistant Professor and one Associate Professor, all interested in SD as a contributor to their career and thus in the seminar to get useful insights.

Participants were from 17 universities in 11 countries (Fig.2):

- Europe (18): Italy (Politecnico di Milano, Università La Sapienza - Rome, Università di Bologna), Portugal (Universidade do Porto, Universidade de Aveiro), Germany (KISD - Köln, University of Wuppertal), Switzerland (Università della Svizzera Italiana - Lugano), Finland (University of Lapland - Rovaniemi), UK (Loughborough University, University of Hertfordshire, Royal College of Art - London), Denmark (Aalborg University), and Turkey (Istanbul Technical University);
- North America (2): Texas (Texas A&M University - College Station);
- South America (1): Brazil (Universidade Federal de Juiz de Fora);
- Australia (1): Western Australia (Edith Cowan University, Joondalup).

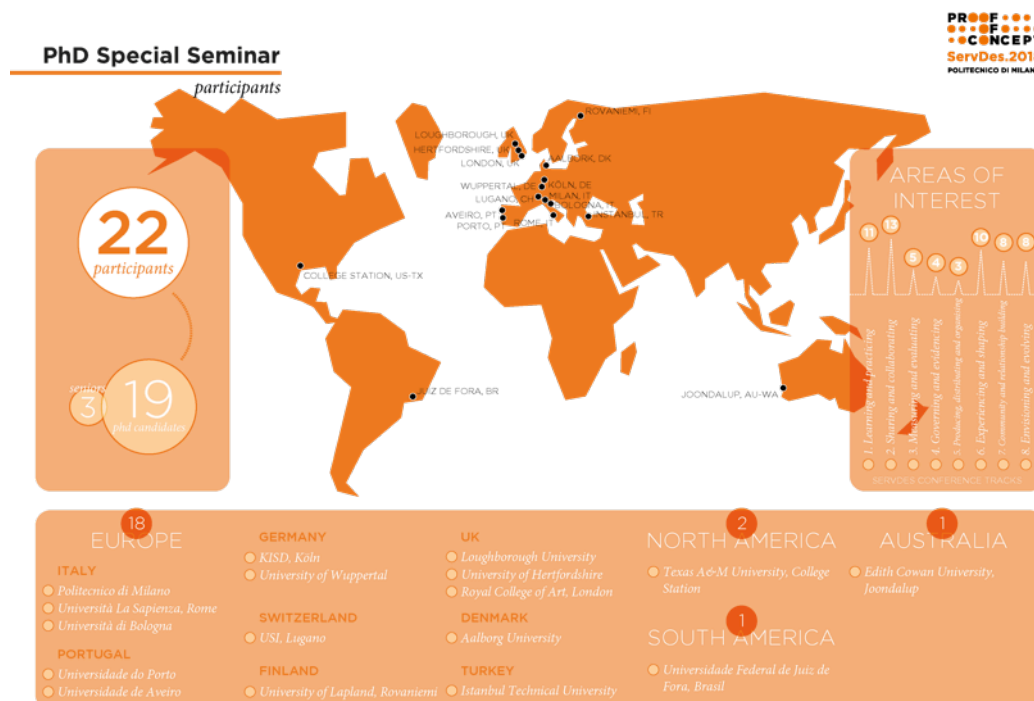


Fig.2: Diagram mapping the participants.

Additional participants to the conference who were interested in the seminar and joined, were from: the Art Academy of Latvia, the RMIT - Royal Melbourne Institute of Technology, the Tokyo University of Technology and a consultancy agency in Taiwan.

## The clusters: a possible scenario

Together with a short description of their research, applicants were required to send research questions they wish to explore by attending the ServDes conference (*What research question would you like the ServDes conference to contribute to answering?*), to guide the PhD Special Seminar organization and activities. Since these incoming questions summarised an aspect of their research, in order to make them more relevant to the discussion during the seminar, it was a necessary step to turn their focus to the theoretical reflection underlying them and around the cluster.

Initially, the incoming questions were analysed and matched with one or more of the 8 conference tracks, and then mapped (Fig.3) to highlight the relevance of the theme and topics investigated by ServDes.2018 within them.

The conference tracks were:

- 1. Learning and practicing
- 2. Sharing and collaborating
- 3. Measuring and evaluating
- 4. Governing and evidencing
- 5. Producing, distributing, and organising
- 6. Experiencing and shaping
- 7. Community and relationship building
- 8. Envisioning and evolving

This action was the first step in the process of building the seminar from the participants' contribution. Right from the beginning, the primary intention of the curators had been not to generate a top-down event but, instead, to design it according to the panorama identified from the applications. Of course, the mapping process built a “possible” scenario (as illustrated below), since the short descriptions were subject to interpretation by the curators. However, it tried to sketch a quantitative interpretation of qualitative data, as a starting point for clusterisation. The outgoing questions developed through the seminar operated as a preliminary act, prior to the “proof of concept” - meaning the conference - that the seminar aimed to trigger among its participants.

The 8 tracks of the conference were meant to be extensive areas of discussion to frame the multifaceted action field of the SD discipline and, within them, to reflect on its evolution and impact in academia, in consultancies, in labs and innovation units, and in organizations at large.<sup>1</sup> Tracks explore SD as a back and forth knowledge transfer: both in building the service designer profile, investigating the cross-disciplinary nature of the discipline (and of design as a whole) and its renewed relationship with universities, business and corporations and design practices (Muratovski, 2016), and in a co-design and human-centred perspective within diffuse design (Manzini, 2015). They explore the transformational role of service designer on collective levels when engaging multiple stakeholders and when involved in public sector innovation, going beyond user-centred design and towards a renewed attention to design and democracy (Bonsiepe, 2006) - (Margolin, 2012), to agonism in co-design (DiSalvo, 2010) - (Munthe-Kaas, 2015) - (Hillgren, Seravalli, & Eriksen, 2016) and to design for policymaking (Boyer, Cook, & Steinberg, 2011) - (Manzini & Staszowski, 2013) - (Mulgan, 2014) - (Avelino et al., 2015) - (Selloni & Manzini, 2016). The conference also investigates theoretical frameworks for service evaluation (Drew, 2017) - (Foglieni, Villari, & Maffei, 2018), and data use for policy making. It pointed out the key qualities of SD and how complements from other disciplines may strengthen its analytical components: in its evolutionary path within the so-called Fourth Industrial Revolution (Costa, Patrício, Morelli, & Magee, 2017) - (Morrar, Arman, & Mousa, 2017), in its relationship with the physical realm, going across the spatial design discipline (Pine & Gilmore, 1998) - (Felix, 2011) - (Fuad-Luke, 2012) - (Blomkvist, Clatworthy, & Holmlid, 2016), and the human-to-human and human-to-digital interactions. The conference was a moment for establishing a step

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<sup>1</sup> Here follows an overview of the topics explored in the conferences' tracks, with brief reference lists to frame the concepts.

further in these reflections – since the constant evolution of the object of SD is affecting SD practice and identity, methods and approaches – to foster a participatory mind-set and a behavioural change in organisations and complex service systems.

By organizing the applicants' profiles around the 8 tracks, the curators attempt to identify a wide range to address the unfolding of the proof of concept around the discipline. Which are the main geographies in which the doctoral and the post-doctoral research is moving in? What diversity of interpretation do the current reflections have around the positioning of the discipline in design education, in practices, in institutional and organizational levels, in global and local social/economic/political environments and design research as a whole?

The academic community around SD assumes the multi-faceted subject matter of the design discipline since it deals with continuously evolving, expanding contexts and with possible worlds, and is shifting away from fixed and defined entities – technology-centred – to processes and complex living entities – human-centred (Buchanan, 1992), (Krippendorff, 2005), (Brown, 2009), (Manzini, 2015). However, how is this conscious complexity and its effects on such a variety of settings nowadays understood, embedded and explored? How can we take advantage of the plurality of voices within a seminar addressed worldwide and turn these resonant backgrounds into valuable areas of interest for discussion?

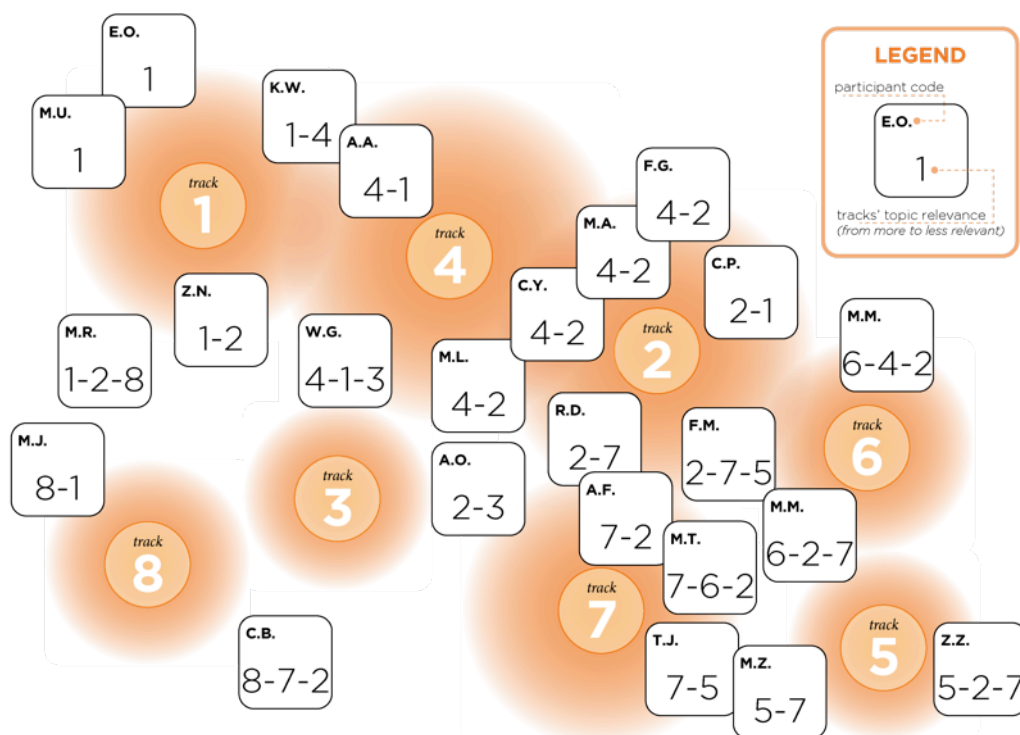


Fig.3: Incoming questions and research topics mapped by relevance around the theme and topics of the conference tracks.

By mapping the applications with the track topics, the following indicators emerged:

- Attention towards the transformational role of service design and service designers within a diffuse design perspective;
- A predominance of this attention within public sector innovation and supporting the democratic challenges that co-design entails;
- Interest in the tangibility/intangibility labels of the discipline and its relationship with enabling technologies and, more widely, to interaction design with and without digital material (Holmlid, 2009);
- A feeble focus on cutting-edge topics such as service evaluation, and the discipline entailment within the Fourth Industrial Revolution and within physical and virtual environments;

- A non-specifically framed debate on the future evolution of the discipline within more theoretical research.

These indicators turned the curators' attention to the discipline itself, away from specific research areas and towards an evaluation of its positioning in levels of complexity settings, crossing academic research, practice, and education:

- How does it enter small-medium-large scale systems?
- How is it enabled?
- How is it recognised and integrated?
- How is it critically explored?
- How does it intersect with other disciplines?

By crossing these layers in various settings and the complexity of human, social and technological systems, four clusters emerged identifying common approaches and reflections:

- Enabling situated services
- Enhancing service systems
- Organizational integration & recognition
- Investigating service design theories

The clusters have been visualized with a metaphor evoking a type of iceberg (Fig.4) representing a possible service design action field. Three clusters compose the iceberg surface: one is above the “line of visibility” – above the water – and two are below. These two clusters are under the surface of the iceberg: they tend to have less visible impact and recognition, but the situation could reverse in the near future. The fourth cluster is the core of the iceberg.

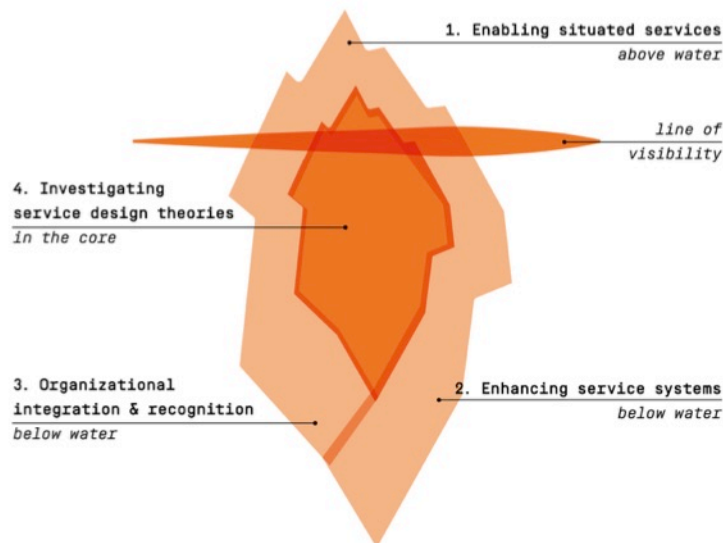


Fig.4: The Iceberg metaphor mapping the participants' applications: a possible scenario for the discipline action field.

The four clusters identify the wide areas of exploration in which participants are researching, and incoming questions are positioned and attempt to frame themselves within a possible scenario for the discipline action field.

By grouping the different submissions into these four clusters (Fig.5), it was possible to divide the participants into a homogeneous team to enable discussions around the discipline's wider scenario and not around particular research practices.



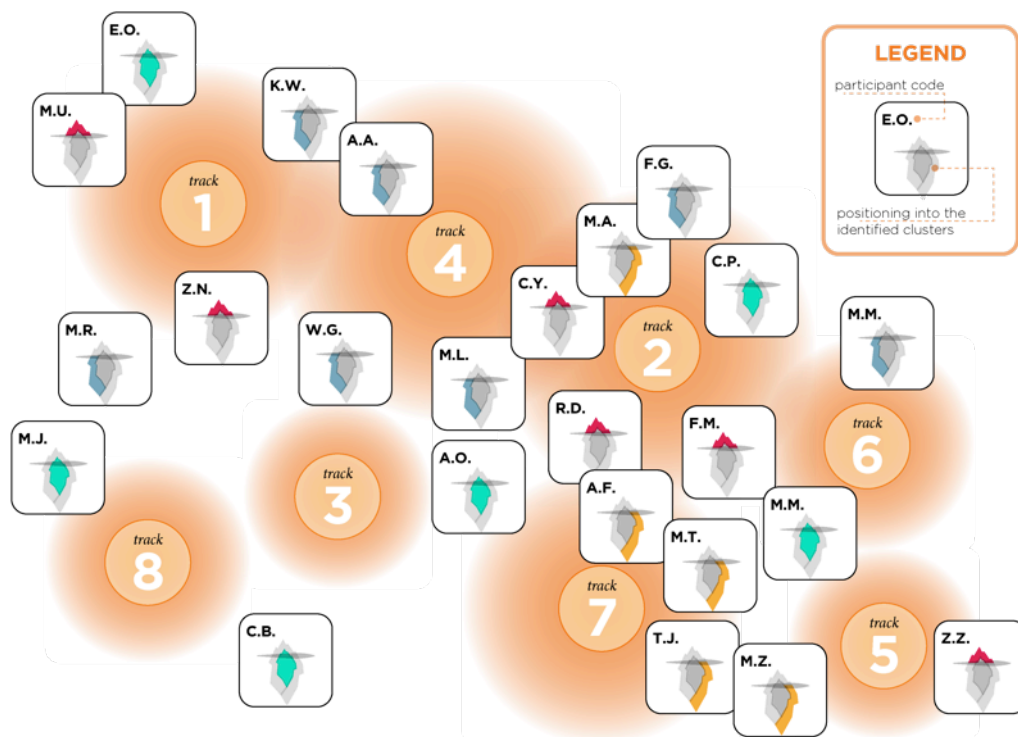


Fig.5: Participants' mapping has been reframed around the identified clusters (this diagram refers to one of the steps in the reframing process).

The first cluster, "Enabling situated services" - *when service design enables situated services* -, is the one which appears above the line of visibility in the SD action field. All the issues included in this cluster are exploring the discipline when embedded in specific fields of application or investigating particular approaches. Indeed, situated learning theories connect processes of knowledge with contextual approaches (Lave, Wenger, & Wenger, 1991) and contextual design, thus including relational and environmental components. This steers our attention towards social anthropology, community psychology and education science, which - in the context of this seminar - leads to reflections on product-user interactions as a precursor to developing a design solution and to its context as a container of ideas, lives, culture, nature, society, and technology (Aranda Jan, Jagtap, & Moultrie, 2016), approached within a holistic and diffuse design perspective.

The second and the third clusters are below the line of visibility and they are not so easy to read as they explore *when service design merges into systems* and, with the system as a focal point, how it can incorporate an SD approach, methods, and tools. It explores opportunities, challenges, and the meaning of approaching complex sociotechnical arenas when necessarily addressed with the added value of design thinking and human-centred design perspective (Norman & Stappers, 2015). In this sense, diffused design and expert design (Manzini, 2015) discourse came into play, questioning the effectiveness and limits of community engagement, thus including participatory action research and participatory design methodologies and tools, grounded theory as qualitative strategies and co-creation/co-design/co-production perspectives.

The "Enhancing service systems" cluster explores when service design enters into complex dynamics; through this integration, regulatory systems, public services and the societal dynamics of the socio-technical systems are questioned. In this cluster, emerging technologies, Artificial Intelligence and Data appear to play a considerable role in redefining how service systems could be designed and enhanced.

The "Organizational integration & recognition" cluster raises the bar of complexity by *questioning big infrastructures and organizational complexity*. The research in this area investigates organisational changes and, nowadays, acts in a context already favourable to a systemic approach, since infrastructural changes are taking place. These two clusters focus on the perception of complex systems as permeable platforms favourable to (and in need of) organizational and infrastructural changes. They both pay attention to settings characterized



by physical proximity – linked by a geographical, political and/or administrative system – or without it – where typological similarities link transnational communities and identities (Sassen, 2011).

The fourth cluster, "Investigating service design theories", is related to the *disciplinary implications of service design*, and all submissions inside this cluster express interest in contributing to the theory building of the field, also starting from delimited areas of exploration. Its purpose is to explore the current landscape of design which SD is moving in and dealing with: the alignment and interdependency of local and global processes, the shifts towards multidisciplinary and cross-disciplinary in design research, practice and education, and the impact of collaborative models on the regulatory system. This cluster aims to add a diverse perspective or, better, to frame possible reflections on the future evolution of the discipline around more theoretical discussions.

## Development

### The structure of the seminar

In this section, the structure of the seminar is described highlighting the subdivision into steps, their specific aims, the activities planned and the tools designed.

The seminar took place in three significant steps. The first one - "Cluster shared interpretation" (duration: 45 min) - established as an icebreaker, focused on the initial discussion around the interpretation of the cluster. The second step - "Outgoing questions" (duration: 1 hour) - went on to develop the outgoing questions, while the third - "Matching questions/sessions/ambassadors (duration: 30 min) - aimed to combine these questions with the corresponding tracks' session and the tuning of the ambassador's role. (Figure 6). After the kick-off, each cluster worked separately from the others in different rooms. Then, at the end of the seminar, they met together again for the wrap-up and final discussion.

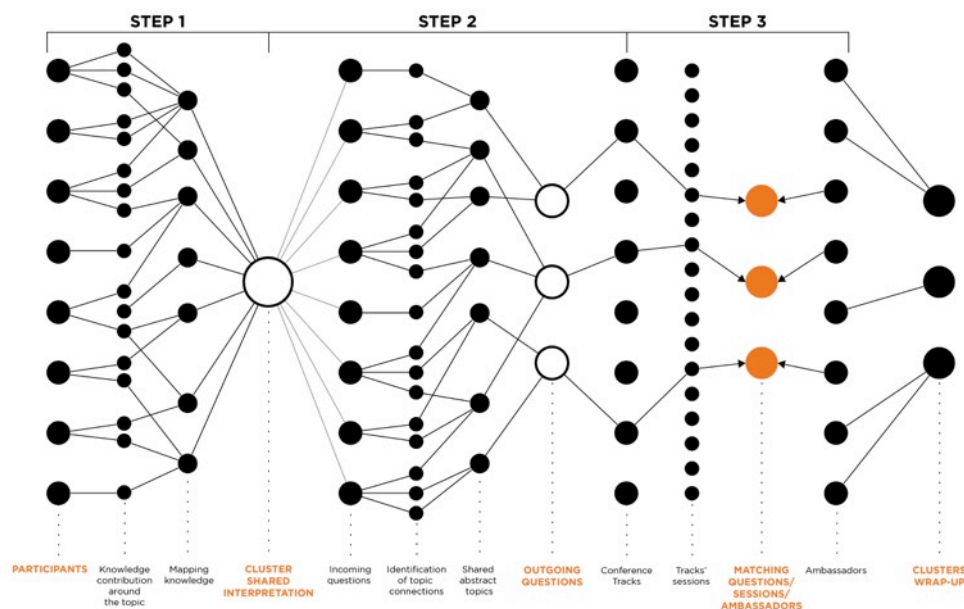


Fig.6: Diagram representing the seminar process conducted by the tutors (navigators).

Specific tools, e.g., question cards, posters, and canvas, were designed to facilitate the activities and are described in the following sections. A poster was designed with the aim of summarizing and communicating the outcomes of each step, to be read from the bottom (first step) to the top (final step).



Fig.7: PhD Special Seminar: kick-off of the event at Appartamento Lago, June 18<sup>th</sup>, 2018.

### Step One: Mapping Knowledge and Shared Cluster Interpretation

The first step aimed to map participants' knowledge about the cluster topic and produce an interpretation of it shared by all its participants. As explained above, grouping participant's submissions into similar areas and not dedicating time to each research topic was vital for the step to produce immediate results. Right from the beginning discussion developed around the cluster's name and the possible relationship between participants.

First, using keywords and short sentences, each participant in the clusters identified and presented their relationship with, and knowledge of, the cluster topic according to their experience and research topic. This activity helped to build a shared background among the participants in the cluster. A board with the cluster's name, description, and position in the "iceberg" model was provided. The participants were also provided with sticky notes (post-its) to write down keywords and sentences and a board to arrange them on. Then, in the second activity, the name proposed for the cluster was discussed collectively, aiming either to confirm its name or rename it. In this first part, a collective agreement on the name of the cluster was of great importance. Therefore, the output of the activity was the shared interpretation of the cluster declared with an adaptation of the original title or a new title in the form of a short sentence.

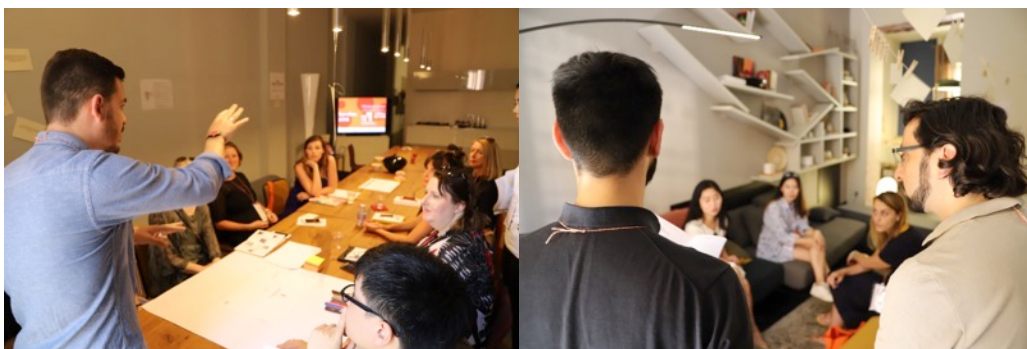


Fig.8: PhD Special Seminar: cluster discussion at Appartamento Lago, June 18<sup>th</sup>, 2018.

### Step Two: Identification of Connections and Shared Questions

Step two aimed, firstly, to identify connections between the shared interpretation of the cluster and the individual incoming research questions and, secondly, to produce outgoing questions from each cluster that would enrich and target the discussions inside the different tracks of the ServDes conference. This step began with a screening of the incoming questions proposed by the participants in their seminar application forms. This was followed by the identification of connections between these incoming questions and the cluster to which the team belongs, and finally the production of outgoing questions. Cards presenting

the individual incoming questions were provided, together with sticky notes (post-its) on which to write them down and arrange on the poster. There was also a blank space on the poster to fill in with the resulting outgoing questions.

The second was probably the most crucial step, as it was necessary to understand the relevance of the PhD event to the possible discussions that could spark within the different tracks. The role of the navigators in this part was also of extreme importance, as they were asked not only to facilitate the team activities but also to avoid dispersion, which is a common risk when researchers of such complex topics try to find an agreement. The focus was to produce a minimum of two outgoing questions for each team, but all of them exceeded this requirement.



Fig.9: PhD Special Seminar: clusters discussion at Appartamento Lago, June 18<sup>th</sup>, 2018.

### Step Three: Outgoing Questions positioning

The aim of the third step was to assign the outgoing questions to the ambassadors and to place them in suitable sessions of the conference. With all questions set and with heated discussion in the rooms, the third step started by analysing the 8 conference tracks. We deliberately decided to reveal the track information only at this stage, as it was essential to create a discussion free from pressure regarding the conference topics. Leaving the tracks visible during the first two steps might have led the teams to force the questions to match their desired tracks of attendance, or would probably have made any ambassador push for a particular topic to gain control over the following task inside the conference. Instead, by leaving the description of the tracks for the last part, when the questions had already been developed, made for a very smooth closure of the event. In general, the teams were focused on matching the questions to the possible tracks, as it was agreed that one question could be formulated in two or more tracks. As we will see in the conclusions, the different answers to the same question in different tracks were able to assure proofs of concepts. Papers with track descriptions and the session schedule and details, including the chairs' names, the authors and titles of the paper presented, were provided. The resulting assignment of the outgoing questions and related ambassadors to the conference sessions was written down in a blank space on the poster.

After this phase, the intermediate results from the seminar were presented to the rest of the clusters in a wrap up moment.

The Ambassadors were given an Ambassador's diary to fill in and to take notes during the selected session, to record the session's discussion. Ambassadors were responsible for bringing the outgoing questions into the ServDes Conference sessions. They worked as a bridge between the results of the event and the core of the conference. Some advice was provided, e.g., for each presentation, they were asked to focus on finding relationships to the question. The question/s were proposed in the session in different ways according to the structure intended for the session, in collaboration with the session chairs. The questions were expected to stimulate the track chairs to spark discussions inside the conference sessions with fresh topics. In every moment of debate or Q&A, they were asked to focus on how the speakers are indirectly answering the question/s. Both in the presentations and discussions, they were asked to try to link the different answers and perspectives given by the



speakers. The ambassadors were advised that at this level of complexity and uncertainty, one can confirm, reinforce, complete or refute the others. After the conference, diaries were sent to the moderators and were used to draw up the final results of the seminar. In the next sections, the intermediate results from the seminar and the final results retrieved from the diaries are illustrated.



Fig.10: PhD Special Seminar: clusters discussion at Appartamento Lago, June 18<sup>th</sup>, 2018.

### Intermediate results: insights from the shared discussions

The process set up enabled participants to progressively move away from their personal research areas towards a discussion in a broader scenario, where their more theoretical reflections, assumptions, and hypotheses around the discipline could nurture, and be nurtured by, the conversation.

Due to few last-minute delays and nonattendance, the curators had to suppress cluster n.4 “Investigating service design theories”, the more theoretical one. Insights relevant to the topic were pinpointed within the discussions in the other three clusters.

In Cluster 1 “Enabling situated services”, the discussion first focused around the word “situated”, as all participants agreed the word does not represent services since they are more dynamic than static and stuck in a situation. Even when referring to situated learning and contextual approaches, the word in itself was not felt to be representative of services seen as living organisms, since they change continuously in shape and in their relations with actors and design elements in what was defined as a “flux”. As a result, the name of the group was changed to “Nurturing existing services”. This nurturing occurs at all steps and touch points. Cluster 1 went on to produce three outgoing questions grounded in the discussion on how SD nurtures existing systems. The first question emerged when a discussion about considering elements of the system as spaces or places was on the table. The different research topics and the incoming questions of the participants stressed the importance of places inside systems; it was crucial to consider how interventions within them could lead to nourishment and improvement of the whole service experience. The question emerging from this discussion was: *How can the value of physical spaces as a service design element be communicated to people?* This question was positioned in *track 6. Experiencing and shaping*, the one focusing more on the relationship between spaces and services.

The second and third questions focused on the idea of sharing knowledge in SD, as a way to collaborate and engage with people. Assuming that when working in a situated and specific domain designers actually need to “scale down” (Myerson, 2017), sharing knowledge may create value in service and for designers, creating opportunities to discover, learn, build and discuss. This should be done in a critical way, addressing people's real needs and adopting a grassroots approach even for small entities (Sanders & Stappers, 2008). Needs appear to be a complex concept to be considered critically.

The questions developed are: *How can we critically share knowledge with different actors to shape services and generate value? How can we support the development of grassroots approaches to service design for small entities?* These questions were positioned in the *track 2. Sharing and collaborating* and *track 7. Community and relationship building*.



Fig.11: PhD Special Seminar: wrap-up step at Appartamento Lago, June 18<sup>th</sup>, 2018.

Cluster 2, on the other hand, warmed up the discussion by putting a fruitful debate on the table around the role of SD as a strategic tool for service systems. It not only supports the design process inside the system but also enables elements within the service ecosystem. Different tools and a holistic approach make the design contribution a plus. The team added a word to the cluster name leaving it at the end as "Enabling and enhancing service systems", highlighting the connection to Cluster 3 and blurring boundaries. The discussion highlighted the complexity of mapping knowledge around SD conversation and practice into systems, and the main reflections focused on the interrelated connections between actors and resources within it and the need for open, human-centred and holistic approaches to ensure inclusion.

Assuming that, participants were guided into highlighting meaningful connections among the incoming questions. Two main reflections emerged: multidisciplinary as a turning point for the discipline within the system logic, and the ethical implications of emotional and digital aspects. The first investigated into whether multidisciplinary is meant as an "in" or "out" aspect of the discipline: does it concern the discipline components from other disciplines, as an "in" of its understanding, or does the discussion focus on what the embedding of SD into complex technological systems generates on multi-levels? As a matter of fact, one strengthens the other and the discipline appears to be a passing point for the transformation and generation of critical understanding of settings through the quality criteria it adopts. A systemic approach made the infrastructure visible by understanding it, by developing it and by building it; through that, it encompasses resilience as well as the shifts towards strategic skills for problem-solving (Muratovski, 2010), towards open collaborative innovation (Baldwin & Von Hippel, 2011) and within an economy of scale (Whitney, 2015). The questions reflected from this discussion entitled: *How can SD integrate multidisciplinary contributions - e.g., tools, approaches - address the reachable (e.g., touchpoints) and unreachable (e.g., institutions) in service systems? How do we establish the boundaries of what a reachable or unreachable service design is?* They were addressed to track 1. *Learning and practicing* and to track 8. *Envisioning and evolving*.

As Fiksel (2003) stated, a system approach is required for sustainable development and that opens the way to the second reflection on ethical implications: the discussion oscillated

between the concepts of artificial intelligence, technologies and digital, and the concepts of emotional, humanity and environmental awareness. By provoking the conversation on the appearance of what is traditionally seen as positive or negative from a moral point of view (tangibility as human and emotional / intangibility as non-human and un-affecting), it was clear that the emotional connection among key actors in a service ecosystem, and the communication of abstract values in the development of public services are not separated and detached from digital and technological aspects. On the contrary, there is no sense in separating them and it is fundamental to understand how to merge them together in business as well as in social practices through value co-creation within a participatory mind-set. The questions emerging in this discussion were: *How can designers set up their design goals in our data-driven world? How can we “instrumentalise” emotions to drive value co-creation between human and non-human through SD? How can technology and human values be brought together through SD in developing AI enabled services?* They were addressed to track 8. *Envisioning and evolving*. A more specific reflection on that and physical spaces produces the question *How can we communicate to people the value of physical space as a service design element?* addressed to track 6. *Experiencing and shaping*.

In Cluster 3, the discussion started by considering word integration and recognition as separate entities: the first to understand human organizational change, and the second to embrace complexity. From this observation, the first vital element of the discussion was the relationship between human resources in organizations (Buchanan, 2015): integrating SD into organizations is a way of building capabilities through collaboration between human resources.

Thus, the discussion focused on the implications of relationships between employees with different roles in the company: in particular, the need to explore the relationship between designers and employees other than designers (Deserti & Rizzo, 2014) in order to widen critical understanding of diffused design (Manzini, 2016) within organizations, and the impact of SD in other departments in the companies (Boland Jr, Collopy, Lyytinen, & Yoo, 2008). The question emerging from this discussion was: *How do we define and communicate the value of integrating design into organisations (public, private, spectrum)?* addressed to track.1 *Learning and practicing*.

The widest reflection concerned the need for a shift from a Human-centred approach to a Human-centred mind-set, since the infrastructural change that is already growing into place can only be fostered by a participatory mind-set in society, in order to raise awareness about issues of public interest within the democratic nature of processes as well as issues of power relationships and empowerment (Selloni, Corubolo, & Seravalli, 2018). On the other hand, within the complexity of the management of organizations, SD can be considered as a method to provoke changes in the organizations themselves (Junginger & Sangiorgi, 2009). The outgoing questions are: *How might we (as service design researchers) establish service design as a main mind-set (approach) to be applied in organizational change management?* addressed to track.1 *Learning and practicing* and *What would it mean for an organisation and its workers to integrate service design?* to track 4. *Governing and evidencing*.

SD becomes a tool not only to reshape organizations and understand the complexity of such large systems, but also allows different stakeholders to be involved in the ecosystem of the public sector and its relationship with private and non-profit organizations, communicating between them and enhancing initiatives (i.e. making results visible and communicating values in the organizations as a measurement of results on "What is good business") between people from different levels.

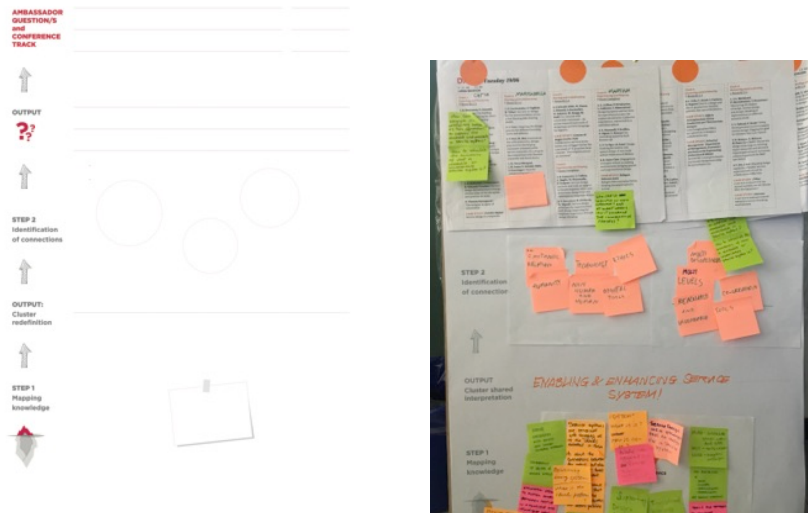


Fig.12: Canvas designed to facilitate the activities and with the aim of summarising and communicating the outcomes of each step, to be read from the bottom (first step) to the top (final step).

OUTGOING QUESTIONS of the PhD Special Seminar		
CLUSTER N.1	CLUSTER N.2	CLUSTER N.3
<p><b>How can System design guarantee an open approach? And what levels can enhance the collaborative process?</b></p> <p>to Track 2. Sharing and collaborating session: day 2 (11:00 - 13:00)</p> <p><b>Ambassador: Marisabella De Castro Abello</b> (University of Hertfordshire)</p>	<p><b>How can SD integrate multidisciplinary contributions address the reachable (e.g. touchpoints) and unreachable (e.g. institutions) in service systems? How to establish the boundaries of what a reachable or unreachable SD is?</b></p> <p>to Track 1. Learning and practicing session: day 2 (11:00 - 13:00)</p> <p><b>Ambassador: Cátia Pereira</b> (Universidade de Aveiro)</p>	<p><b>How do we define and communicate the value of design integration to the organisations (public, private, spectrum)?</b></p> <p>to Track 1. Learning and practicing session: day 3 (15:45 - 17:30)</p> <p><b>Ambassador: Martina Rossi</b> (Politecnico di Milano)</p>
<p><b>How can we critically share knowledge with different actors to shape services and generate value?</b></p> <p>to Track 2. Sharing and collaborating session: day 3 (15:45 - 17:30)</p> <p><b>Ambassador: Can Uçkan Yüksel</b> (Istanbul Technical University)</p>	<p><b>How to communicate to people the value of physical spaces as a service design element?</b></p> <p>to Track 6. Experiencing and shaping session: day 3 (10:30 - 13:00)</p> <p><b>Ambassador: Martina Mazzarelli</b> (Politecnico di Milano)</p>	<p><b>How might we (as service design researchers) establish service design as a main mindset (approach) to be applied in organisational change management?</b></p> <p>to Track 1. Learning and practicing session: day 2 (11:00 - 13:00)</p> <p><b>Ambassador: Lisa Overton</b> (RMIT)</p>
<p><b>How can System design guarantee an open approach? And what levels can enhance the collaborative process?</b></p> <p>to Track 6. Experiencing and shaping session: day 2 (11:00 - 13:00)</p> <p><b>Ambassador: Mariane Garcia Unanue</b> (Universidade Federal de Juiz de Fora)</p>	<p><b>How designer can setup their design goals in the data-driven world? How can we instrumentalise emotions to drive the value co-creation between human and non-human through SD?</b></p> <p>to Track 8. Envisioning and evolving session: day 2 (16:00 - 18:00)</p> <p><b>Ambassador: Tiitta Jylkäs</b> (University of Lapland)</p>	<p><b>What would it mean for an organisation and its workers to integrate service design?</b></p> <p>to Track 4. Governing and evidencing session: day 2 (16:00 - 18:00)</p> <p><b>Ambassador: Fanny Giordano</b> (Aalborg University)</p>
<p><b>How can we support the development of grassroots approaches to service design for small entities?</b></p> <p>to Track 7. Community and relationship building session: day 3 (12:00 - 13:00)</p> <p><b>Ambassador: Zichao Nie</b> (Politecnico di Milano)</p>	<p><b>How technology and human values be brought together through SD in developing AI enabled services? How can SD integrate multidisciplinary contributions address the reachable and unreachable in service systems? How to establish the boundaries of what a reachable or unreachable SD is?</b></p> <p>to Track 8. Envisioning and evolving session: day 3 (10:30 - 11:45)</p> <p><b>Ambassador: Maira Prestes Joly</b> (Politecnico di Milano - Universidade do Porto)</p>	

Fig.13: The outgoing questions elaborated during the seminar, the tracks and sessions they were addressed to and the related Ambassadors.

## Results

The result of the seminar is reflected in the different outgoing questions that emerged during the sessions. However, the result was not only their formulation, but also the way a preliminary event with very little time was able to generate a meaningful contribution to the discussions in some sessions of the conference. The whole team was engaged in producing

questions that were not only able to nurture the conference, but in one way or another the possible answers were also able to nurture participants' research.

Going through the Ambassadors' diaries, it is interesting to point out how the indicators that emerged in the map of the applications (see paragraph above "The clusters: a possible scenario") remained the trend topics of the seminar discussion and then of the insights that emerged from the sessions.

The attention towards the transformational role of service design and service designers within a diffuse design perspective triggered many questions around the issue of sharing knowledge when SD empowers and trains a company and human resources (non-designers). Mainly, the current answer is that a complete knowledge transfer is neither achievable nor needed. In fact, it is important to implement SD strategies to stimulate personal motivation (design as a living agent in communities) towards change and to make room for co-design through their (non-designers) own action. However, the role of service designers within organizations should be more focused on "changing" managers and business people through "practices of learning" (cfr. Nicola Morelli), in order for them to be more eager to understand the value of service design as a practice, and not only as a discipline, and to promote its application in the organization. This application, however, will never replace the presence of professional service designers since any support to other professional roles is ineffective without design capabilities. This is about understanding the limits of SD, as well as its real value, when integrated into any kind of system. In addition, the definition of an "SD mind-set" was called into question, in favour of a "social construction" definition of service design that also includes psychology, social sciences, and philosophy in the design process. The emerging interest in the human and non-human in SD calls for greater attention to the responsibilities and roles of service designers, and an empathic view, a concern with diversity and the consequential design implications came out as fundamental.

The interest in tangibility/intangibility labels in the discipline was explored in relation to the capacity of SD to integrate multidisciplinary contributions, especially in terms of service design objects (strategy, interfaces, technology, and interactions). If SD is the application of resources for the benefit of another party and service designers design to enable new services to happen, then SD objects could range from tangible to intangible things. In this sense, multidisciplinary professionals tend to focus on the objects according to their backgrounds, which in the case of service is helpful when creating and increasing the possibilities for value co-creation. Thus, the focus on cutting-edge topics such as the discipline's entailment within the Fourth Industrial Revolution were explored in this way during the seminar in response to the outgoing questions and embracing the relationship within physical, virtual environments and human spheres.

## Conclusions

The Special Seminar developed for the community of researchers interested in SD became a place to discuss and exchange ideas, research, and interests. It was an exciting element connecting young researchers and their work with the actors in the conference. By putting different questions related to SD, this group of researchers was able to highlight proofs of concepts related to the discipline. A continuous questioning of the role of the discipline in the different complex systems where it intervenes is crucial for the subject, and the event proved how vital it is to bridge consolidated research with preliminary research. After all the fruitful discussions in each cluster, and the different questions that emerged in the seminar, the selected ambassadors became representatives of each cluster in the conference. During the ServDes Conference sessions, all the various open questions developed during the seminar sparked fruitful discussions in the conference tracks. As a result, the whole conference was viewed as an active scenario where presenters, track chairs, and ambassadors, enriched the debate about what SD is and will be, by trying to answer questions. The special seminar worked as an additional tool to prove what SD is, and it will be recognized as a



relevant discipline that can intervene in small, medium and complex systems to propose innovation by nurturing the system with creative and analytical approaches.

## Acknowledgement

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*Figures 1-5, 13: diagrams by Annalinda De Rosa*

*Figure 6: diagram by Daniele Bucci*

*Figure 12: diagram by Carmen Bruno*

*Figures 7-11: ph. Federico De Luca and Georgia Gkini*

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### Location

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## ***Workshops***

ServDes2018 - Service Design Proof of Concept  
Politecnico di Milano  
18th-19th-20th, June 2018

# From A to BE. Designing the mobility of the future

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## Abstract

Today, inclusivity means more than just overcoming physical barriers, it is about removing the barriers that create undue effort and separation, so to enable everyone to participate equally, confidently and independently in everyday activities.

Co-designing an inclusive e-Mobility scenario means to emphasize the contribution that understanding user diversity makes, to inform these decisions, and thus to include as many people as possible. User diversity covers physical, conceptual, economic, cultural and social aspects.

By utilizing collaborative tools, the attendees will experience the benefits of an inclusive design approach to design services that should be adopted by the majority of people.

**KEYWORDS:** mobility, speculative design, service design, user-centered design

ServDes2018 - Service Design Proof of Concept  
Politecnico di Milano  
18th-19th-20th, June 2018

## Data challenges and opportunities in designing for service

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### Abstract

The rising relevance of data in the design of new services exposes service designers to new challenges and opportunities. The ever-growing number of services that use and/or produce data requires service designers to be equipped with the tools needed to understand, analyze and transform data as well as design and inform the process with them. It is then crucial to define how to achieve this data literacy to move beyond statistical analysis and consolidate a set of (design) practices for data usage. Achieving this higher level of data literacy can help integrate data better into the design of services.

**KEYWORDS:** open data, big data, digital social innovation, OpenDataLabs

ServDes2018 - Service Design Proof of Concept  
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## Between servitude and collaboration: A service design choice?

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### Abstract

20 years ago the debate on the upcoming service society started. Now it is here and it seems quite different from the one imagined: it is a fluid mesh of interactions colonized by neoliberal ideas and practices in which services are evolving towards a new form of servitude. That is: services based on encounters where the service deliver is subject to the power of a platforms and, behind it, of the platform owners. Until now, criticism has been mainly directed towards the economic environments in which it happens: the platform economy and the related gig economy. The workshop aims to discuss the implications of this in terms of service design and of design for social innovation.

**KEYWORDS:** services, interactions, collaboration, servitude, politics of the everyday



ServDes2018 - Service Design Proof of Concept  
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## The latest words on service design: Talking about books

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### Abstract

An interactive roundtable with the authors of some of the most recent words on service design:

*Designing Better Services: A Strategic Approach from Design to Evaluation* (Foglieni, Villari, & Maffei - 2017), *An Introduction to Service Design: Designing the Invisible* (Penin - 2018), *Designing for Service: Key Issues and New Directions* (Sangiorgi & Prendiville - 2017), *CoDesign for Public-Interest Services* (Selloni - 2017), and *This Is Service Design Doing: Using Research and Customer Journey Maps to Create Successful Services* (Stickdorn, Hormess, Lawrence & Schneider - 2018).

**KEYWORDS:** education, evaluation, codesign, practice, mapping

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# How service design can drive the digital transformation of the retail revolution

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## Abstract

The retail arena is undergoing great transformations, also due to constantly connected consumers with 24hrs access to a global shopping experience, at their smartphone length. What does this mean for traditional retailers? How are new players eroding incumbents' share of the market? How do you re-invent your business and your experience when you don't know who your competitors are anymore? The workshop will investigate these questions and discuss about how a service design approach can help retailers to face these challenges and drive digital transformation in the post-commerce era.

**KEYWORDS:** retail, digital transformation, shopping experience, customer experience

ServDes2018 - Service Design Proof of Concept  
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## Digital transformation through community and relationship building

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### Abstract

ABB S.p.A. is an example of how collaborative communities can help shape a cyclic process of identity definition and development. This case will be presented in the workshop to explain how the Twig agency has guided digital transformation through communities, also thanks to the scientific contribution of the university and the development of a broader methodological vision, that has lead them to combine service, marketing, communication and technology in a synergic way.

**KEYWORDS:** digital transformation, user driven process, participated business development, talent strategy

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## Service design for autonomous driving

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### Abstract

The workshop focuses on the human aspects of organizations such as needs, values, motivations, beliefs or fears and introduces a framework for evaluating key factors that “humanize” the organization.

Through the collaborative and interactive teamwork, audience will together with organizers to explore, discover and identify emerging key challenges to become a human-centered organization, and ideate design solutions to solve them.

**KEYWORDS:** autonomous driving, revolution, opportunities, mankind

ServDes2018 - Service Design Proof of Concept  
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# Gamification for service design and Innovation: ideaChef® method and tool

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## Abstract

This paper aims to analyze the deployment of ideaChef® gamified method and tool from the perspective of service design experts. It does so by conducting a case study of ideaChef® deployment in a simulation of a new service design concept, where two groups of practitioners and academics were involved in the transformation of a preliminary idea (user on-boarding in an innovation process) into a more structured concept. The paper contributes to service design theory by delivering a new approach to ideation that challenges some of the current approaches to innovation such as collective ideation and criticism avoidance. It also brings significant implications for the service design practice by illustrating a more structured and engaging approach to involve all team members in the collective development of an idea/concept. Furthermore, it provides new insights into what combination of methods and tools should be applied to service design ideation. The integration of ideaChef® approach into the methods and tools typically used by service designers has the potential to provide opportunities for increasing user engagement and the overall quality of the ideation process, particularly at the idea/concept development stage.

**KEYWORDS:** gamification, concept design, innovation, service development

## 1- Introduction

### 1.1 Background

The innovation process is progressively driven by methods and tools associated with “design thinking” because of the applicability of this approach to the development of new solutions for concrete business problems as well as to foster innovation in teams (Chasanidou, Gasparini, & Lee, 2015; Seidel & Fixson, 2013). Design thinking approach to innovation consists of a system of overlapping stages, rather than an orderly sequence of steps, which usually includes: 1- Discovery/Inspiration, which relates to the opportunity or problem that

motivates the need and search for solutions along with data collecting from multiple sources about user needs normally gained through observation, empathy and immersion in their context; 2- Ideation, which relates to idea generation and prototyping and encompasses the process of brainstorming and generating, developing, testing and rapid prototyping ideas created from research insights that may lead to possible solutions and actions plans; 3- Implementation, which relates to the phase where actions plans are finalized in a path that leads to the market (Benson & Dresdow, 2015; Brown, 2008; Chasanidou et al., 2015; Lee & Benza, 2015; Liedtka, 2015; Scherer, Kloeckner, Ribeiro, Pezzotta, & Pirola, 2016). Design thinking is one of the methods and tools used to design services, either to improve an existing service or create a new service.

Gamification can be defined a process of making activities more game-like in non-gaming contexts or non-leisure situations to encourage users' motivation, enjoyment and engagement, particularly in difficult and complex tasks (Deterding, Dixon, Khaled, & Nacke, 2011; Werbach, 2014). No matter the resistance to change among many innovation actors, including managers, practitioners and academics, the fact that innovation productivity appears to be declining, and workplace disengagement rising, might suggest a need to a more gameful approach to innovation. Actually, play holds the potential to increase efficiency and productivity at the workspace, unlocking human capacities, like the ability to take risks, improvise, imagine and inspire others (Reeves, Fuller, & Gutierrez-Lopez, 2018).

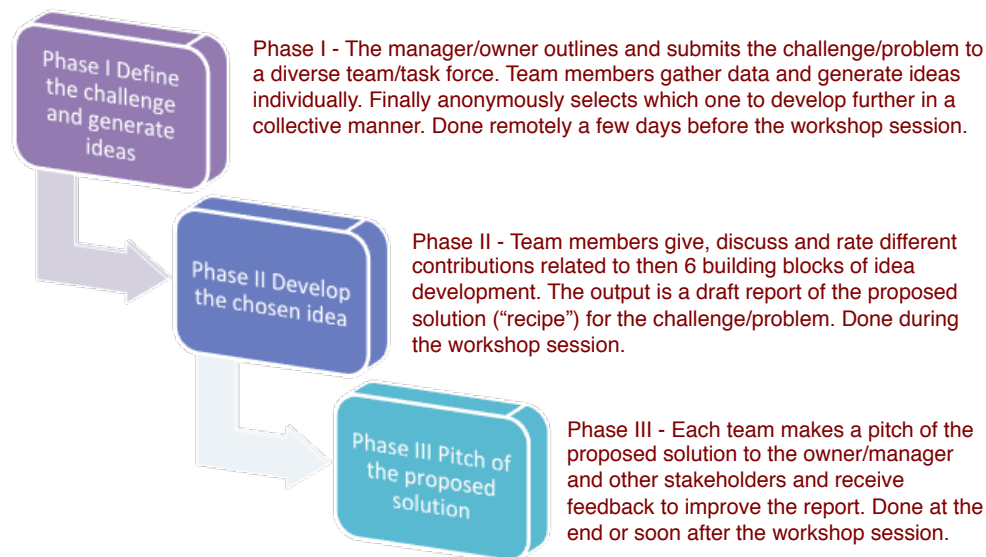
Gamification for service design and innovation is, therefore, an emerging approach that supports service design, by improving user engagement and enhancing the co-creation of new services with a diverse group of stakeholders. Games can be employed in service design to expand the space of possibilities in their current services and made use of these soon after the game sessions (van Amstel & Garde, 2016). This type of approach provides a safe-to-fail environment, a structure and timely process and the creation of solutions with inputs from the users, ensuring a clear outcome at the end for further discussion and improvement. Stakeholders are therefore able to interact, share their experiences and develop an understanding of other key players' problems and priorities (Ramaswamy & Gouillart, 2010). Gamification supports service innovation, particularly in user engagement and co-design of tailored product-service systems (Patricio, Moreira, & Zurlo, 2017).

## 1.2 ideaChef® gamified method and tool

The main goal of ideaChef® is to enable a diverse team to develop and convert a high potential idea into an actionable recipe i.e. a minimum viable concept or light prototype. Its foundation was based on the “one size doesn’t fit all” principle and so designed not to cover the entire but a particular stage of the innovation process. ideaChef® gamified method and tool is thus focused on the idea development phase of ideation, i.e. when there is already an idea that holds the potential to be implemented.

ideaChef® serves to create “recipes” that address a particular challenge, need or problem of a real case scenario, related to either internal processes or to the marketplace, e.g. create a new service; tackle a service weakness; co-create services with customers or prioritize features in upcoming service releases, among others. It supports convergent thinking by helping to narrow a number of potential solutions down to a “best fit” solution, which provides an engaging and more efficient way of selecting and developing ideas to be prototyped or implemented (Patricio, 2017).

ideaChef® follows a method (figure 1) designed for a team of 4 up to 6 players that can be integrated with other tools from the creativity and innovation space, i.e. user research and idea generation. Depending on the nature of the challenge/problem, ideaChef® can be played multiple times by the same team playing different ideas, or by multiple teams playing the same idea.



**Figure 1 - ideaChef® ® method**

ideaChef® method can be adapted to different settings. It was primarily designed for a corporate environment in real case scenarios where time restrictions are one of the key issues for the managers. In this type of environment, having employees face to face is expensive and difficult to manage, i.e. travelling and agendas, so this approach intended to reduce physical meetings and maximize the results of ideation workshop sessions. At the university environment is quite different since is possible to address either case studies and simulations or real case scenarios from companies, breaking down the three phases into several sessions and scheduling another type of remote and class assignments, e.g. idea generation techniques. Besides that, professors and instructors provide adequate time between assignments to give students feedback and allow user research/data gathering.

## 2- Case study

### 2.1 Goal

This study aims to validate the deployment of ideaChef® gamified method and tool from the perspective of service design experts. In order to achieve this particular goal, a case study was conducted within the ServDes.2018 conference in Milano using different research instruments like interviews, surveys and a workshop session with participants from two expert groups: practitioners and academics. Besides addressing the research goal, the workshop session provided ServDes.2018 participants a rich experience in testing a new approach for idea/concept development.

Until so far ideaChef® method and tool have been used extensively by non-designers in corporate settings and at university with students. ServDes.2018 was the opportunity to conceptualize and validate ideaChef® for service design through the lens of high-profile practitioners and academics that are already using several other approaches to ideation. No matter potential risks of too biased evaluation and feedback, this perspective from a qualified service design audience was needed to push the boundaries of ideaChef® testing participants from a different background rather than the traditional targeted user, in order to identify opportunities for improvement.

## 2.2 Sample

Study sample comes from ServDes.2018 conference attendees who signed up for the “gamification for design and innovation” workshop (figure 2). It was a group of 26 practitioners and academics from 13 countries, all having a service design background and expertise in ideation methods and tools. Initially the workshop space was limited to 18 participants and registrations were accepted on a first-come first-serve basis.

Due to a growing demand for registrations, it was decided to accept a maximum of 24 participants. Yet on the day of the workshop, 1 participant did not show up and 3 non-registered participants show up and asked to attend.

Country	Affiliation	Position
India	Company	Practitioner
India	Company	Practitioner
Canada	Company	Practitioner
Colombia	Company	Practitioner
Canada	Public Agency	Practitioner
Poland	Public Agency	Practitioner
Italy	Studio/Consultancy	Practitioner
Canada	Studio/Consultancy	Practitioner
Taiwan	Studio/Consultancy	Practitioner
US	Studio/Consultancy	Practitioner
Italy	Studio/Consultancy	Practitioner
Spain	Studio/Consultancy	Practitioner
Germany	Studio/Consultancy	Practitioner
Germany	Studio/Consultancy	Practitioner
Finland	Studio/Consultancy	Practitioner
Brazil	University	PhD student
Brazil	University	PhD student
Turkey	University	PhD student
Taiwan	University	Master student
Taiwan	University	Master student
Taiwan	University	Master student
Brazil	University	Professor
Guatemala	University	Professor
US	University	Professor
US	University	Professor
Colombia	University	Professor

Figure 2 – Workshop participants

The facilitators, assuming an additional risk of extending the number of participants and team members beyond a reasonable limit and consequently having less time to share and discuss ideas among them, accepted the request. It was considered that having more people would serve better the goal of gathering more feedback and enrich the study even if getting some disadvantages.

Although not being possible to choose the sample, workshop attendees provided a representative subset of the ServDes.2018 audience with an interesting set of people i.e. service design professors and students as well as practitioners from big companies and design studios consultancies, having a high level of expertise and familiarity with state of the art methods and tools. On the other hand, such diversity introduced more complexity in terms of managing expectations of so many experts from different nationalities.

Despite several limitations (e.g. lack of information about the attendees and exceeding team members limit), case study design followed ideaChef® method (Figure 1), covering three phases, the setup (phase I), the execution (phases II and III) and the evaluation.

## 2.3 Setup phase

Regarding setup, a challenge was submitted one week before the session and workshop participants were asked to generate ideas that could address it. However, due to lack of background information and context about the challenge, participants generated interesting ideas but not so much in line to the challenge. Therefore, it was needed to define an idea/concept more related with the know-how and background of participants. The task was not easy since very little information was available. Thus it was difficult to define and share in advance an idea/concept to develop, which could engage such a diverse group of people in this process. Yet, based on their profile, two ideas/concepts were outlined to develop during the workshop session: #1: coaching approach to support new employee onboarding in a customer experience cross-border project; #2: coaching approach to support new student onboarding in an international service design master course. The concepts were very much the same, i.e. coaching to support onboarding in a service innovation initiative, but



focused on different users, i.e. corporate employees and university students. Regrettably, due to organizational constraints workshop participants did not have the time to gather data and become familiar with the proposed concept before the session.

In contrast to usual ideaChef® projects, it was not possible to go through the process of selecting the team members and rely on their views and data collection to come up with high potential ideas/concepts to address the challenge. Actually, the chosen concept was only shared at the workshop day, which did not let participants collect information and bold insights in advance about the topic to be shared and discussed with the others throughout the session. And since ideaChef® basically serves to develop further an idea/concept that holds the potential to be implemented, this process was limited by the lack of time in terms of team alignment as well as basic understanding of concept and project scope. This has had complicated the kickoff of the game, that is the most delicate part, especially in a context in which people don't know each other, making it more difficult to break the ice and dive into the game. Nevertheless, all team members owned the necessary knowledge to develop the ideas/concepts that were outlined.

## 2.4 Execution phase



During the execution (phases II and II of ideaChef® method), 4 teams composed of members from various countries and different, experiences and cultures addressed the outlined ideas/concepts by following the workshop agenda: 10h00/10h30 – introduction (idea and team alignment); 10h30/11h30 – idea development; 11h30/12h30 – fgidraft report of concept; 12h30/13h00 – concept pitch. Teams #1 and #2 develop the idea/concept #1 (coaching to employee onboarding) and #3 and #4 develop the idea/concept #2

(coaching to student onboarding).

The workshop started nearly half hour later than planned, giving less time for the discussion of the ideas/concepts among the teams. Soon after a very short description of ideaChef® rules, all teams started to develop their own idea/concept on a self-facilitated mode. For each round, a different team member was controlling the time and task, e.g. the evaluation of individual contributions. The two workshop leaders supported the teams in regard to overall time and task management, i.e. discussing the initial idea/concept and reporting the proposed minimal viable concept:





and pitching the improved and further developed idea/concept:



In the end, two alternative reports were made for each of the developed ideas/concepts. Teams that develop further the idea/concept of coaching to employee onboarding ended up with two distinctive but complementary proposals. One was creating a “hitchhiker’s guide to the corporate galaxy” that wanted to overcome cultural and language barriers and reduced anxiety. The other called “coach on the go” aimed at aligning employee goals with project management using a personalized mobile coach approach. Teams that develop further the idea/concept of coaching to student onboarding also proposed different proposals, which matched some of its features. The “Navigating the city: We Mate” concept paired new students with second-year students to face housing, language, cultural and study challenges while having fun and making new friends. The other concept aimed at supporting student’s connections in different stages of the master program, particularly connecting the student with the coach (peer) before classes start. A more detailed explanation of the concepts was provided during the pitch.

## 2.5 Evaluation

Please rate from 1 (very poor) to 5 (excellent) the following items:  
How satisfied were you with the \_\_\_\_?

game design & materials  
use a new approach  
play mode  
balanced contributions of all  
giving and receiving contributions  
reporting concept/solution  
relationships between team members  
game environment/atmosphere  
dialogue between team members  
common understanding and alignment  
knowledge exchange  
contributions from different people  
individual overall learning  
time management  
level of facilitation  
expression of latent thoughts  
expanding of opportunities  
focus on relevant activities  
discussing and developing the idea  
time to convert concept into a report

For the purpose of evaluating the results that have been achieved with this case study, data collection and analysis procedures were conducted. Data collection instruments included workshop observations, survey (figure 3) along with 3 debriefing group interviews at the end of the workshop as well as 16 testimonials and 3 individual short essays delivered immediately after the workshop.

Figure 3 – Survey items

Interview and essays were conducted by asking participants the following questions:

- 1- How was your experience during ideaChef® workshop?
- 2- How ideaChef® can support and enhance service design approach to innovation?
- 3- Besides idea development /concept design, for what other areas ideaChef® can be applied?

Data analysis was performed using a protocol that reflects ideaChef® core themes in terms of relevance and implications of the ideation process. Core themes encompassed game approach; team building; creative thinking; concept outcome; knowledge building and process. Moreover, key issues related to ideaChef® method and tool best fit and potential applications were also considered in the data analysis.

## 3- Discussion of findings

Findings provide several insights about benefits and advantages of ideaChef® as well as areas that can benefit from improvement. It was also possible to confirm key application areas and identify further uses not only in the innovation landscape but also in other organizational settings.

Based on the 20 items of the survey (figure 4), which have been assessed on a scale ranging from “very poor (1)” to “excellent (5)”, the overall level of satisfaction with ideaChef® was 4,2 (out of 5).

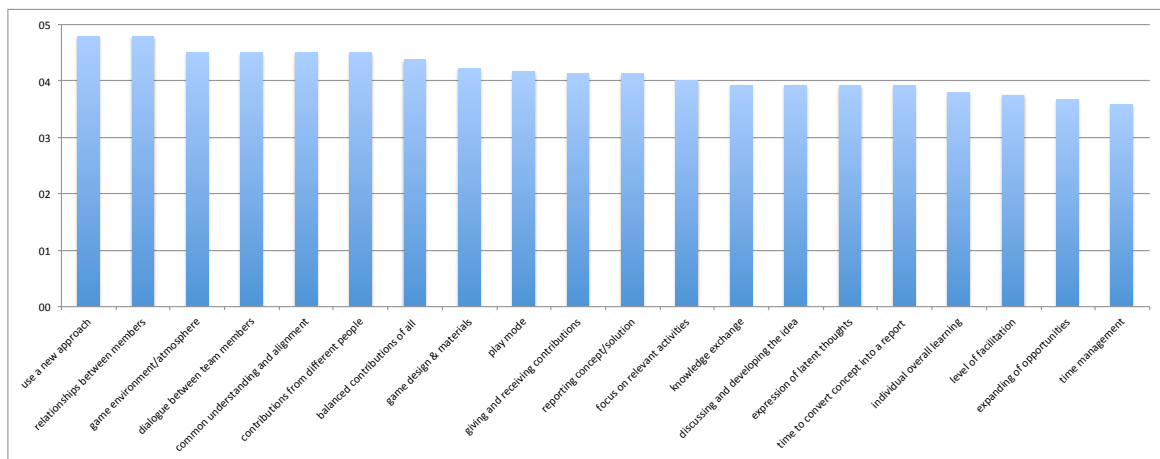


Figure 4 – Survey results

Analyze of findings per core themes combined data from survey results, debriefing group interviews, testimonials and individual short essays.

### 3.1 Game approach

The level of satisfaction with “game elements” (table 1) achieved an overall rate of 4,4 and has been composed by the following survey items: game design & materials (4,2); the fact that we are using a new approach (4,8) and play mode (4,2).

Table 1 - “game approach” representative quotes from interviews, testimonials and essays

Fun
<ul style="list-style-type: none"> <li>• <i>I think it was an interesting idea to have a gamified way of coming out with a service concept.</i></li> <li>• <i>The game method was fun and novel. A creative way to innovate.</i></li> <li>• <i>Great game! Fun and thought provoking way to engage partners (people) in service design process.</i></li> <li>• <i>I enjoyed the gamified approach.</i></li> </ul>
Novelty
<ul style="list-style-type: none"> <li>• <i>Thanks for providing such a rich and innovative experience.</i></li> <li>• <i>IdeaChef® reminds me of the business model canvas but is more fun and interactive to create.</i></li> <li>• <i>It remembers me a lot the business model canvas, same concept and structured but gamified.</i></li> </ul>
Rules
<ul style="list-style-type: none"> <li>• <i>It would be great to have the instructions at the beginning like a quick overview about the steps by steps about what the whole think look like.</i></li> <li>• <i>We were a little confused about the instructions, and how many rounds to do, if we could discuss and if that was for additional time. If there was a guide for 1, 2 or 3 points, that would have been helpful.</i></li> <li>• <i>I like the game but I think we need additional instructions on how to play.</i></li> <li>• <i>We may need more instructions and information before starting the game.</i></li> <li>• <i>There was some uncertainty in terms of moving ahead without a thorough understanding of the rules of the game.</i></li> </ul>

It has been recognized that ideaChef® provides a fun, innovative and more engaging experience. While not having the same goal and positioning, ideaChef® was sometimes compared with Business Model Canvas, a well know visual method for developing new or documenting existing business models.

As mentioned by some participants, game elements can be improved by providing participants with more comprehensive game instructions. Usually participants find it easy and quick to catch up with basic rules but due to the limitations already mentioned, some mentioned that would have been beneficial to have early on a quick overview about the whole picture. It was observed that such a minimal explanation provided to participants should not in any other situation be repeated. As in the traditional process, at the beginning of the session participants should be provided with a 5 min. briefing of the rules and the possibility to use the existing personal menu card (short explanation of the rules that this time was not provided to participants). In conclusion, much better results can be achieved by providing a quick overview of the concept and rules before starting the game, even with an expert audience.

#### *Team building*

The level of satisfaction with “team building” (table 2) achieved an overall rate of 4,6 and has been composed by the following survey items: relationships between team members (4,8); game environment/atmosphere (4,5); dialogue between team members (4,5) and common understanding and team alignment (4,5).

**Table 2 - “team building” representative quotes from interviews, testimonials and essays**

Spirit
<ul style="list-style-type: none"> <li>• <i>Great for team building activities, it would be more than a good icebreaker practice.</i></li> <li>• <i>I think is nice for team building, for sure breaking down barriers and having people comfortable with taking risks each other in an innovation workshop.</i></li> <li>• <i>I think is appropriate for team building.</i></li> </ul>
Collaboration
<ul style="list-style-type: none"> <li>• <i>For collaboration and having everyone’s opinion of is a great approach.</i></li> <li>• <i>I would use it because I really liked the multiple perceptiveness of it.</i></li> <li>• <i>It could be a good practice for groups consisted of participants from different backgrounds.</i></li> </ul>

ideaChef® fosters a spirit of teamwork and collaboration, team up and ability to join forces. It is a good method to create a successful work environment with people from different backgrounds. There is a wide value perception in regard to this type of outcome, which also contributes to high levels of user engagement.

### **3.2 Creative thinking**

The level of satisfaction with “creative thinking” (table 3) achieved an overall rate of 3,8 and has been composed by the following survey items: expression of your latent thoughts (3,9) and expanding of opportunities (3,7).



Table 3 - “creative thinking” representative quotes from interviews, testimonials and essays

Questions
<ul style="list-style-type: none"> <li><i>In some questions we needed to come up with general consensus to unlock the metaphoric approach. But overall I had a charging, pushing, triggering experience.</i></li> <li><i>Sometimes I could not understand the questions because we were having different perspectives of looking at it. So it was good having different perspectives but there was also difficult.</i></li> <li><i>I really liked it, I loved this game for brainstorming interpretations and it was really working out.</i></li> <li><i>I think the questions you have there are triggering very well the different points that you have to think and this great for inspiration at the beginning.</i></li> <li><i>I also missed the part we were creating original and specific value, we were talking about general attributes.</i></li> <li><i>Questions were not designed in order to create some innovative ideas. They are not acting as idea booster, they are not asking me to stretch imagination and come up with something new.</i></li> <li><i>In the begging is hard to think on the questions, depending on the question cards, and then provide an answer. I did not know how rich and specific this answer should be in regarding to the system/solution that we are creating.</i></li> <li><i>I did not know if I could say whatever I wanted or I needed to agree with the others beforehand.</i></li> </ul>

Participants’ evaluation was not at all consensual regarding this theme. Although the very good feedback regarding a challenging and triggering experience provided by the question cards, particularly the ones using metaphors, some participants considered that questions were not really acting as boosters to create innovative ideas. In this situation, participants did not totally perceive that contributions were going to be improved by building upon each other ideas.

Even in situations where the goal is not generating a completely new idea but developing or testing an existing idea, creative thinking dimension remains critical. Yet not having a concrete case to address turns more difficult for participants to feel inspired and triggered by the questions and game dynamics. On top of that, due to the background of participants, i.e. people that are already used to stretch their imagination, their expectation in this respect was probably higher. All these circumstances made both creative and concept outcome dimensions underestimated.

### 3.3 Concept outcome

The level of satisfaction with the “concept outcome” (table 4) achieved an overall rate of 4,0 and has been composed by the following survey items: focus on relevant activities to address the challenge (4,0); time to convert potential concept into a report of a solution (3,9) and process of reporting the concept/solution (4,1).

Table 4 - “concept outcome” representative quotes from interviews, testimonials and essays

Idea/Concept
<ul style="list-style-type: none"> <li><i>Since I come out as an outsider I did know anything about the initial concept and so when we start paying the game I felt that we were talking about general concepts and describing things</i></li> </ul>

*in a very general fashion and then passing all the stages and close to end getting a more concrete concept, which actually fits into all these things we were talking about.*

- *It was nice, at the beginning we were in blank since we did not any idea of anything so it was hard but with the time it was useful and good.*
- *At the first it was confusing, which I like. I like not knowing what and trying to figure out as it goes along what it means.*
- *I think we misinterpreted the idea and the concept we were supposed to do with that but as soon as we understood it we went back to the game, so it was the major barrier for us.*
- *We lost time at the beginning trying to figure out if we were developing the idea or creating a new one.*
- *When looking at the question cards we were always thinking about what was the idea.*
- *I missed introduction when we could align our understanding of a general concept that would make a following work.*
- *I think we were focused on answering the questions without have a clear concept of our problem up front, so closing the gap to create an innovative & differentiated report felt like a stretch.*
- *Perhaps it needs a more concrete case study of an industry.*
- *I think if could actually take into practical things it would be really nice.*

It is harder to evaluate the outcome without having a real case where participants are engaged before the gamification workshop and motivated to proceed with idea/concept development. In this case study, some of the participants never had any contact or information about ideacheef® or the challenge subject and most of them had different expectations of the workshop.

In fact, going for an idea generation workshop, using an ideas-first approach does not require too much background information about the subject. However, using ideacheef® to achieve a minimum viable concept of an existing idea/concept, using a needs-first approach requires that participants researched the subject and can add value to the discussion. Some of the quotes reflected the difficulties of clarifying the concrete goal of the workshop (creating a new idea or developing an existing one) and connecting some general ideas with a minimum viable concept. Nevertheless, it was possible in all the 4 cases to bridge this gap by connecting all the contributions and structuring a draft report of the concept proposal.

### 3.4 Knowledge building

The level of satisfaction with “knowledge building” (table 5) achieved an overall rate of 4,2 and has been composed by the following survey items: balanced contributions of all team members (4,4); giving and receiving contributions (4,1); knowledge exchange between participants (3,9) and contributions from different people (4,5).

**Table 5 - “knowledge building” representative quotes from interviews, testimonials and essays**

#### Contributions

- *Forcing everybody to say something to produce an idea and then have this short session of feedback it worked very well and that is something that I am missing in my practice. In a lot of workshops there are a lot of people who don't talk and they have good insights but are shy.*
- *This forces everyone listen to everyone, this is a good tool for that.*
- *Everyone felt appreciated by giving out his or her opinions.*

Ideachef® facilitates knowledge building by encouraging the interaction and balanced contributions of all participants. This unique characteristic reinforces the team building and supports the process of idea development.

### 3.5 Process

The level of satisfaction with “process” (table 6) achieved an overall rate of 3,8 and has been composed by the following survey items: process of discussing and developing the idea (3,9); time management (3,6); level of facilitation (3,8) and individual overall learning (3,8).

Table 6 - “process” representative quotes from interviews, testimonials and essays

Configuration
<ul style="list-style-type: none"> <li>• <i>I really like ideaChef®. The process of giving and receiving contributions from the team members was really good!</i></li> <li>• <i>Nice game / process.</i></li> <li>• <i>I like this scoring in terms of prioritizing things.</i></li> <li>• <i>The game is hard but that is good. Forces you to make decisions, take risks to make mistakes and not worry about ideas being fully fluttered out. Thereby reducing risk/fear of failure, etc. Is good for encouraging continuous improvement in an interactive way, building upon each other's ideas.</i></li> <li>• <i>Participants in our group as they were not comfortable presenting an idea/concept that was not fully fleshed out - perhaps they were risk averse or uncomfortable presenting. I think more risk averse.</i></li> <li>• <i>Good process, maybe questions need to be more specific.</i></li> <li>• <i>Sometimes questions were too long and complex (metaphors).</i></li> <li>• <i>Not all cards seemed very useful.</i></li> <li>• <i>Process of contributing was confusing.</i></li> <li>• <i>Language barriers in the team also slowed down the process.</i></li> <li>• <i>We also had a few language barriers - which I found quite interested since I was able to learn different perspectives from the way people understood or interpreted words, phrases and concepts.</i></li> </ul>
Time limitations
<ul style="list-style-type: none"> <li>• <i>I think it will be nice to have more minutes of discussing and reflection because we have people coming from different countries so people would have that time to understand each other so it would be helpful and interesting to reflect and discuss. On the other hand I think is real great that is forcing to make decisions very quickly without thinking too much, so no analysis per analysis. Sometimes I was extremely stressed because of the time but on other times I was thinking this is fun so the tension of balance is quite exciting.</i></li> <li>• <i>I felt the time pressure on the team very much and I suggest going for 2 min presentation and exchange. I felt the team was starting to ideate and you some how don't want to break it but timing it, so this is something very difficult to deal with.</i></li> <li>• <i>It was really cool for me. I love when we do some quick brainstorming and we come up with some ideas of a concept but there was no time for us to collect ideas for the entire concept.</i></li> <li>• <i>It would be nice to add one more minute to for discussion/reflection.</i></li> <li>• <i>Taught to idea and keep time in simultaneous. Not enough time for team alignment on at the end. Not enough time to present and feedback 1 min (suggest 2 min).</i></li> <li>• <i>Time limitation – difficult to contribute sometimes or created lack of understanding.</i></li> <li>• <i>At the beginning I had some difficulties in putting "our user" in the position named in the cards in very limited time frames.</i></li> </ul>



<ul style="list-style-type: none"> <li>• <i>We may need to have more time discuss the idea.</i></li> <li>• <i>We probably needed to go through most of the questions to get a clearer picture.</i></li> <li>• <i>I spent more time to understand the questions that I thought.</i></li> </ul>
<p>Facilitation</p> <ul style="list-style-type: none"> <li>• <i>Having a facilitator at the table is very helpful and should probably be a requirement.</i></li> <li>• <i>There was not enough facilitation.</i></li> <li>• <i>A more professional facilitator is needed (that knows the game and the process) to give out a more rich result.</i></li> <li>• <i>Once the game is played/completed - there should be space for reflection with the facilitator wherein the facilitator can outline "why" the game is laid out a certain way so people can truly take away the benefits which encourage transformation...i.e. - quick decisions - making people try instead of worrying to much about the outcome, which can always be improved.</i></li> </ul>

Similarly to creative thinking, participants' evaluation regarding the process configuration and time management was not at all consensual. As mentioned by one of the participants, keeping the balance between reflection and quick decisions is exciting but also very hard.

Actually, ideachef® was not designed to provide a full, clear and complete report of a minimum viable concept, which is almost impossible to achieve in just 3 or 4 hours. The goal was essentially to provide a snapshot of the proposed concept, making it visible to everyone. Moreover, it was designed to encourage everyone to participate in the discussion and overcome some group dynamics biases that typically come out from the traditional approach. It was also expected to generate a broader participation, not just from the ones that played the game and proposed the concept but also from all the others that in a subsequent stage would make further contributions to improve or allocate resources to prototype the proposed concept.

In fact, some participants commented that *the concept was a flushed out*, which means bring to light a concept that already existed and develop it further with inputs from all team members. ideachef® approach challenges several assumptions and practices that are adopted as a mainstream form of ideation. So is quite natural that shifting away from the traditional style is much harder for some people. On top of that, the use of metaphors and time restrictions makes the process more difficult but at the same time more rewarding. Particularly at the end when is possible to figure out how different contributions were connected and allowed to end up with a concrete outcome. Besides all the considerations about the essence of the approach and the need to make quick decisions, the lack of time can be minimized by a more comprehensive introduction about the original concept and goal of the game upfront.

Participants also discussed facilitation as an issue that should be improved. Two different perspectives can be examined, one regarding the game facilitation, e.g. time management and scoring and the other more related to reporting phase where teams can be ignited with new inputs. Having a group of service design experts, who are intrinsically professional facilitators, undertaking this evaluating makes their views more biased in relation to the need and importance of this support. Still is very interesting the possibility to redesign the game to take more time to facilitation at the reporting phase.

### 3.6 ideaChef® best fit

Feedback from participants supported ideaChef® concept design and application process. It was recognized that this innovative approach is appropriate to further develop or improve an existing idea/concept, and not so much to create a new one (table 7). Actually, ideaChef®

was designed to enable the conceptualization of an idea based on the 6 building blocks, i.e. user, value, resources, attributes, change and configuration of product/service/process.

Table 7 - “best fit” representative quotes from interviews, testimonials and essays

<p>Idea/Concept development</p> <ul style="list-style-type: none"> <li>• <i>It seems it could be for me a more useful approach to evaluate an idea that I already have and using the questions to check it.</i></li> <li>• <i>If you have already the core of something that is a bit innovative, if you have the begging of something this game is probably a good process to refine it and to look at it from different angles and structures but I don't think it is something to create something completely new.</i></li> <li>• <i>Final evaluation of an idea, restructuring and refining it and making sure that all elements are there for generating the report.</i></li> <li>• <i>From my perspective it depends where in the process you use this, so if it is for quick ideation and selection is great, but still think that a lot of research is required, talking with the users and understanding the behaviors because we are making a lot of assumptions in the game. But if we had already know all this stuff that we need to cover for research and have done this sort of iterative process it would be much better.</i></li> <li>• <i>Title of the game: meeting an existing idea rather than creating a new one</i></li> <li>• <i>I assumed this ideaChef® was meant for ideation but I agree that only after user research is done this may come.</i></li> <li>• <i>So it needs to have research and other tools to check and balance and other explanations. So this is a great tool in a specific moment of time.</i></li> <li>• <i>I think it's good for quick idea generation/concept - but there must be validation of that concept generated.</i></li> <li>• <i>An interesting approach for constructive idea development &amp; discussion</i></li> </ul> <p>Communication</p> <ul style="list-style-type: none"> <li>• <i>It is like a template for representing your idea, going thought the users, resources, attributes, so all the concept will bring about the thing, so the report are representing the idea.</i></li> <li>• <i>As a communication tool it was really cool.</i></li> <li>• <i>It depends on what intents of the game for. Lets say that someone has an idea and wants to have an initial validation session with people who were not familiar with the idea I think this a good communication tool for that. If people from the team have different concepts of the idea it could be used for communication tool as well, to make sure they are all in the same page.</i></li> <li>• <i>Unfortunately it is very easy to miscommunicate. People think are talking about the same thing but are not. And this tool makes you reevaluate those things from different perspectives.</i></li> </ul> <p>Ideation kickoff</p> <ul style="list-style-type: none"> <li>• <i>What I really like also is that is like a kicking off and understanding phase. So I would use it as a kick off tool. I think the questions you have there are triggering very well the different points that you have to think and this great for inspiration at the beginning. And then latter on will definitively go for proper research.</i></li> <li>• <i>ideaChef® is well suited for quick ideation and selection as it forces you to make decisions quickly rather than suffer analysis paralysis. That being said, depending on where in the process this game is played, it might not benefit from the use of deep user research and identification of stakeholder/actors etc, and the outcome may be based on too many assumptions.</i></li> </ul>
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Therefore, ideaChef® should be applied during the developing and testing phase of ideation stage, subsequently to the user research and brainstorming/idea generation stages. But it can

also be useful, using a less linear approach, for supporting ideation kick-off, idea/concept selection or even for communicating an existing idea.

### 3.7 ideaChef® service design other application areas

Besides the innovation process, ideaChef® has the potential to support service design (table 8) as well as other business and organizational processes, like team building, marketing & project management (table 9).

Table 8 - “service design” representative quotes from interviews, testimonials and essays

<ul style="list-style-type: none"> <li>• <i>This is definitively going to be one of the approaches that we want to follow but we are not really sure if this is the only one that will follow, maybe some ideation of project at as well.</i></li> <li>• <i>For the same questions different answers from each group can come up so it changes the result of the service concept, the outcome.</i></li> <li>• <i>I think this would be helpful for assessing an existing service to spark conversations about what needs to change.</i></li> <li>• <i>Like the idea of gamification to create the service concept! Interesting experience</i></li> <li>• <i>Fun and thought provoking way to engage partners (people) in service design process</i></li> </ul>
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Table 9 - “other application areas” representative quotes from interviews, testimonials and essays

<p>Team Building</p> <ul style="list-style-type: none"> <li>• <i>I think is nice for team building, for sure breaking down barriers and having people comfortable with taking risks each other in a workshop.</i></li> <li>• <i>It could be a good practice for groups consisted of participants from different backgrounds. In social public sector or even in private companies, for team building activities, it would be more than a good icebreaker practice.</i></li> <li>• <i>I think it's good for team building.</i></li> </ul> <p>Marketing &amp; Project Management</p> <ul style="list-style-type: none"> <li>• <i>Marketing and branding are good applications.</i></li> <li>• <i>I think you can apply the questions and topics in many other fields like the users and value, so it makes sense for events and project management or communication brand.</i></li> </ul>
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## 3- Conclusions

According to spontaneous feedback and evaluation of data gathered from different sources, participants really enjoyed the rich experience of testing this new approach for idea/concept development. Along with all testimonials and written feedback, the overall score obtained in the survey clearly demonstrates the value and potential of ideaChef® gamified method and tool from the perspective of high-profile service design practitioners and academics.

Even if this study did not target the traditional audience of corporate employees involved in idea/concept development and students, inputs from service design experts contributed significantly to rethink the application domains and the market communication approach. As mentioned by one of the participants, *I think ideaChef® will work better with non-designers on the table because we are always looking for something beyond the innovation.*

Actually, study participants provided interesting suggestions for improvement and further developments, which will definitively allow to push the boundaries of ideaChef®. Two thought-provoking suggestions will be considered in the short-term. One is the use of radical analysis to broader and opens up new user perspectives, which will support the creative thinking side of ideaChef®. The other is adding a new set of question cards using “mad libs”, a method where is possible to fill in the blanks and make the questions more relevant and specific. Another interesting opportunity is to explore new ways to incorporate other types of incentives for participants to contribute.

Simply because of the novelty of this approach or due to a poor set of expectations for workshop participants, some feedback revealed a miss-match between the idea/concept and question cards. In fact, some of the participants were expecting to use an idea generation tool, as in many brainstorming ideas-first approach sessions (Ulwick, 2018), and not something specific to the development of an existing idea. Inspired on a needs-first approach, ideaChef® advocates workshops and other participatory sessions for the development of an existing idea/concept. Besides that, ideaChef® is focused on an existing idea/concept that was generated and selected, individually or collectively, in a prior moment of time by the same or different team(s) when addressing a concrete organizational or business challenge or problem.

As already discussed, evaluation of some of the items was not always consensual. ideaChef® challenges a lot of assumptions and practices, such as facilitation, face to face collective brainstorm, discussion time limit and ways of agreeing/disagreeing. In this sense, ideaChef® is a game changer and like in many innovative approaches is typical to find early adopters as well as others that will only adopt the idea when is widely accepted by the community of practice.

To maximize the outcomes achieved by the use of ideaChef® is fundamental to properly conduct the set up phase with research and data gathering about the chosen idea/concept. Otherwise, it will not be easy to ensure the right match between the question cards and the development of the existing idea, turning much more difficult to structure the idea, close the dots and propose a sound and comprehensive minimal viable concept. Therefore, it makes sense to allocate enough time at the begging of the session for idea/concept alignment and “on-boarding” or “warm-up” activities with team members, particularly when having people from different countries and cultures.

Finally, this case study revealed that even with several limitations, i.e. a diverse group of people from various countries and cultures without any past relationships and insufficient background information about the goal of the game and idea/concept, it was possible to transform a brief sentence of an idea/concept into a sketch of a minimal viable concept proposal, in less than 3 hours. This fact is relevant for both practitioners and academics since this concrete output element is not common in most of the tools in the innovation and creativity space. ideaChef® ensures a good balance between the process, i.e. learning from using the method and tool and the outcome, i.e. minimum viable concept proposal.

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# Humanizing organizations - The pathway to growth

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## Abstract

Human-centered design approaches in organizations have emerged since the rise of service design and design thinking. The subsequent application and adoption of these methods into daily practices have been observed to be challenging, but the reason for this is not clear. Often organizations have not been built based on human-centered design principles. Moreover, the organizational context, in which these design-oriented approaches are introduced, contradicts current operating models. How does the organization overcome these fundamental barriers and create a more humanistic environment for applying human-centered design? Built on previous research, we developed a workshop methodology to enhance human-centered design principles in organizations. Here, we draw attention to the boundary between the human relations inside (employees) and outside (customers) organizations. The paper presents the foundations, methodology, and preliminary results as well as future avenues for humanizing organizations.

**KEYWORDS:** service design, design thinking, humanizing, organization, human-centered design

## 1 Introduction

Service design (SD), as a human-centered design (HCD) approach, focuses on the customers, users, employees, and stakeholders—all the humans involved, touched, or affected by the service or project in general. SD aims to look at systems at scale to gain a holistic understanding of their current state and to make improvements or derive new solutions (Miettinen, 2016). Inside companies, the aim of SD has been to bring a deep customer focus into product and service development by, for example, introducing new human-centered methods, hiring designers and design-minded people, or acquiring design agencies (Maeda, Xu, Gilboa, Sayarath, & Kabba, 2016). Nevertheless, when looking beyond processes, the driving actors are the people involved in designing the service. Still, human factors, such as interaction, behavior, and values, are often overlooked in comparison to

systems optimization and technological functionality when organizations are driven by the principles of scientific management (Drucker, 1995).

Next to SD, the phenomenon of design thinking (DT) has gained tremendous popularity across disciplines and divisions, especially in marketing, human resources, and business development. The term originally gained traction in design research during the 1960s to explain design practices outside of design teams, and design thinking has been applied in progressive business environments since the 2000s. DT can be perceived more broadly but fuzzier by management (Johansson, Sköldbberg, Woodilla, & Çetinkaya, 2013; Camposano, 2018), while SD is mostly applied to ensure concrete customer outcomes (Stickdorn, Hormess, Lawrence, & Schneider, 2018). Recent studies about DT have mainly focused on specific methods, their application (Carlgren, Rauth, & Elmquist, 2016), and the role of designers in general (Tan 2012; Yee, Jefferies, & Michlewski, 2017), but rarely on the organizational context (Elsbach & Stigliani, 2018). Conversely, discourses in service design are already looking at broader design targets, such as transformation design (Burns, Cottam, Vanstone, & Winhall, 2006), system readiness for innovation (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004) and organizational change (Junginger, 2015). Introducing and embedding SD and DT as HCD approaches nudges an organization as a whole.

In research, discourses of SD and DT have different roots. In practice, they are often introduced simultaneously and follow the same purpose: humanizing products, services, and processes. In organizations, both SD and DT are mainly applied in isolated organizational capsules—such as innovation labs—whose peripheral positioning allows little strategic alignment (Cooper, Junginger, & Lockwood, 2009; Junginger & Sangiorni, 2009; Schmiedgen, Rhinow, Köppen, & Meinel, 2015). Without this alignment, no “organizational backbone” can develop to embed new practices and propel an organization in a more humanized direction.

Humanizing an organization, from our perspective, means taking the time to understand the profound needs of all involved humans and reframing the activities in the organization based on those human needs (Pinheiro, 2014). Internal humanizing might result in, for example, employees working flexible hours, input on and control over the details and scope of each project, and advancement opportunities. Meanwhile, external humanizing can resemble speaking the customer’s language and providing services when and how the customer wants them. When design decisions are made, values and success criteria for humanizing are based on the needs of all the humans involved—on human dignity. Buchanan (2001, p. 36) speaks to this point: “Human-centered design is fundamentally an affirmation of human dignity. It is an ongoing search for what can be done to support and strengthen the dignity of human beings as they act out their lives in varied social, economic, political, and cultural circumstances.”

Referring to the above-mentioned literature, it seems that human relations are at the core of the organization. Hence, our proposed concept for humanizing an organization via SD offers an approach for investigating the human relations of the organization as well as ways for designing compelling, creative pathways towards sustainable and healthy growth.

To explore the topic of humanizing organizations, an action research study was conducted as a co-creation workshop at the ServDes 2018 conference. The workshop participants were engaged in a collaborative exercise that included assessing the HCD maturity of an organization, identifying organizational barriers through a compass tool, and ideating solutions using SD methods. The goal of the workshop was to discover and advocate the topic of humanizing an organization and to gain insights on how design professionals perceive the topic.

## 2 Literature review and defining the problem space

The research motivation for the workshop and this paper is based on our personal experiences in research and practice in Germany, Finland, and the US. We share an understanding that HCD approaches are being grounded on the needs of human beings. Nevertheless, the increasing dissemination of design techniques, tools, and methods, often labeled as DT or SD in business (Junginger, 2016), nudges prevalent processes, principles, and narratives inside organizations (Junginger, 2008; Augsten, Gebhardt, & Maisch, 2016). Being aware of the possible effects of introducing SD and DT approaches in trainings (Augsten, & Marzavan, 2017) or of in-house designers acting as change agents (Mäkelä Klippi, 2018; Minder & Lassen, 2018), we realize the need to consider the whole organizational environment. The question of what is needed in terms of design to overcome emerging organizational barriers and make them more human-centered (Geuy, Hollowgrass, & Jylkäs, 2017) needs to be further acknowledged in future research.

The question of what constitutes an “organizational design narrative” (Junginger, & Bailey, 2017) and how it should be designed to exploit the full potential of HCD inside an organization has been mostly overlooked by scholars and practitioners. Scholars such as Junginger (2008), Buchanan (2015), and Elsbach (2018) argue about the relevance of design in organizations on a theoretical basis. However, even though the dependencies between HCD and the organization might be plausible, empirical data about how HCD influences cultures in organizations is rarely existing.

### Re-valuing the uniqueness of human beings

Connected to the rise of design methods, several reports indicate the presence of an era of human beings. While naturalists call the current geological era the Anthropocene, viewed as the period during which human activity has been the dominant influence on climate and the environment (Anderson, 2015), the World Economic Forum (2016) ranks complex problem-solving, critical thinking and creativity as the top three human skills needed in 2020. The International Organization for Standardization’s norm on a human-centered organization (ISO 27500:2016) defines the principles of a human-centered approach as capitalizing on individual differences as a strength in the organization; making usability and accessibility part of the organizational strategy; ensuring health, safety, and well-being; valuing personnel and creating meaningful work; being open and trustworthy; acting in a socially responsible way; and adopting a total systems approach within the organization.

Taking a look at the world of employment, in our view, the barriers are related to processes, principles, and structures affecting the tendency to become more human-centered. Overall, the leading concept of Taylorism, which was popular at the beginning of the industrialization in the 20th century, aimed to optimize work activities by measuring time, cost, performance, and so on rather than by innovating, creating, and reshaping (Augsten, & Marzavan, 2017). Most mature industrial organizations are built on these principles and grew into what we perceive today as silos, structures, and hierarchy (Kwon, 2017; Laloux, 2017). With the rise of approaches like SD and DT, and with the changes in sentiment towards valuing human uniqueness, the principles of Taylorism might be requested.

To solve complex global challenges, it is proposed that the society should leave the well-trodden paths and instead value the courage and risk-taking of humans to explore new ways of creating instead of fulfilling given tasks (Morgan, 2014). From our point of view, if standardization and job fragmentation were previous principles for increasing efficiency, today uniqueness, diversity, and continuous improvement might help to enhance the capability and potential for adaptability as well as the necessary agility to meet changing market needs (cf. McKnight, 2013).



## Customer-centricity fostered by the need to innovate

The introduction of approaches such as SD and DT has been primarily motivated by the need to innovate and not by the idea of humanizing an organization. Saturated markets (in the western world), resulting from the successful era of industrialization and mass customization, require companies to reshape their organizational design narratives (Junginger & Bailey, 2017). New competitors, shorter (digital) production cycles, servitization (Lusch & Vargo, 2014), and the need for speed, transparency, and collaboration are increasingly evident in digitalization (McAfee & Brynjolfsson, 2012) and highlight the changing role and power of the customer.

Besides demographic numbers, the value of understanding the customer has reshaped the process of research, insight gathering, and creation towards a more inclusive and co-creative approach. Driven by the idea of designing a “better” solution for the customer, there is growing utilization of more qualitative approaches (Sanders & Stappers, 2008). The customer is perceived as a holistic human being and observed, questioned, and met in real-life situations. Delivering a service or interacting with a customer also requires a human counterpart inside an organization. In order to value the interactions and service creation, an expanding HCD approach, aimed at the employees in the organization, is also needed (Miettinen, Jylkäs, Jeminen, & Tikkanen, 2016).

## Defining the problem space

In this research, we focus on human relations, including all humans involved in organizations, both internally and externally. Humans inside an organization can be defined as employees. Humans outside an organization could be partners, customers, users, or stakeholders. Human relations, both internally and externally are built based on a shared purpose. Here, we argue that if both sides—the design of the customer relationship as well as the employee relationship—are equally taken into account, the humanization of organization can be applied. We further argue that humanizing an organization goes beyond the current application of human-centered approaches such as SD and DT by nudging cultural changes in organizations. Following the different levels of change in SD activities by Sangiorgi (2011), we propose that in order to humanize an organization, a focus on service interventions is needed in addition to a practical level of SD, which Sangiorgi calls service interactions design.

The recognized challenges in the practice of embodying SD and DT methods and the missing empirical data motivated us to discuss and elaborate on the topic of “humanizing an organization” with design experts to reveal blind spots and get a broader understanding of the design possibilities in the realm.

## 3 Research methods

### Methodological approach and workshop set-up

The workshop concept was applied to broaden previous perspectives on the topic and reveal blind spots. It was developed collaboratively and facilitated by us, with a duration of 75 minutes and with 40 international participants as designers, design researchers, facilitators, consultants, social entrepreneurs, and managers. Working materials, such as sticky notes, blank paper, markers and pencils, and prints of the provided templates were given to each team. The workshop’s aim was to explore, test, and validate the concept of humanizing the organization, including the developed compass tool. The workshop was divided into five steps (Fig. 1), which are described below:

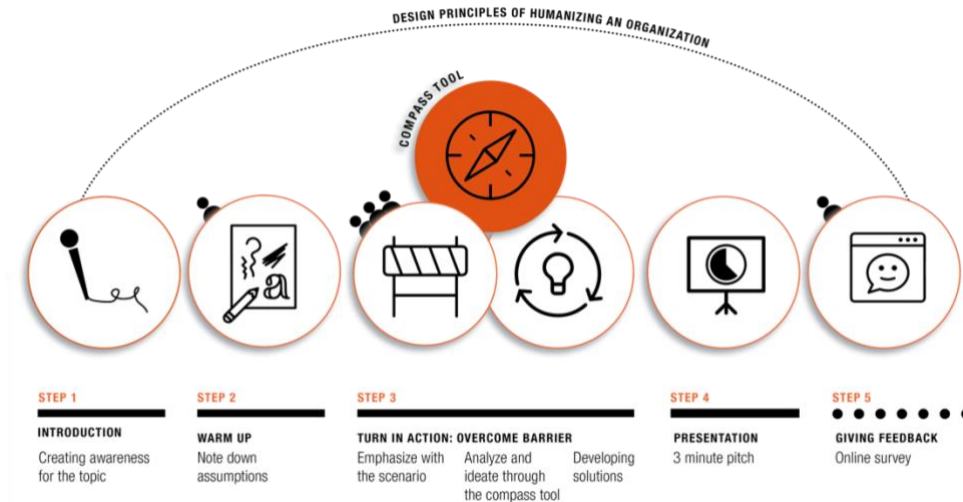


Figure 1: Workshop outline

The workshop started with a brief introduction (step 1) of the topic, followed by the presentation of the proposed compass tool and design principles. Afterwards, the workshop participants were divided into eight teams of five people.

As a warm-up (step 2) to enhance interactions and group dynamics, the participants were asked to write down a word related to the topic of humanizing an organization and then to visualize the chosen word with a sketch (Fig. 2). The participants then used the visualizations to introduce themselves to their teams. The warm-up allowed the participants to articulate their starting assumptions, share ideas, and reflect to the researchers the group understanding of the workshop topic.



Figure 2: Input talk, Warm-up sketching, design principles

Next (step 3), the participants were asked to turn the given insight into action. Five humanizing design principles were briefly introduced. They were posted on the wall of the workshop room and also included as a set of cards in the workshop materials on each

table. The derived principles offered foundational standards for assessing the human-centeredness of an organization, as follows:

- Remain flexible and adaptable. Maintain a critical eye towards organizational standards.
- Value the uniqueness of each individual.
- View customers and team members as whole people. Do not reduce anyone to a role or demographic category.
- Walk the talk. Strive for an authentic execution of humanization.
- Ensure alignment between internal and external culture.

Acknowledging the principles, the teams were directed to read and discuss the barrier that was given to their team (Fig. 3). We defined a barrier as a situation in which an organization is not exhibiting or operating in a human-centered way, and we developed scenarios based on our own experiences, which we asked the teams to discuss and ideate on. There were eight barriers in total; half of them referenced scenarios inside an organization focusing on an employee's perspective, and the other half centered on a situation outside an organization from the customers' viewpoint. The scenarios, in the use case format, included a story of a persona describing how somebody experienced a lack of humanity on the part of the organization. Each barrier was prepared with notes based on the compass tool's three areas of actions, engagements, and interactions, which were listed in the bottom quadrant of the printed barrier (Fig. 3). After familiarizing themselves with the barrier and discussing the situation, the team started working with the compass tool.

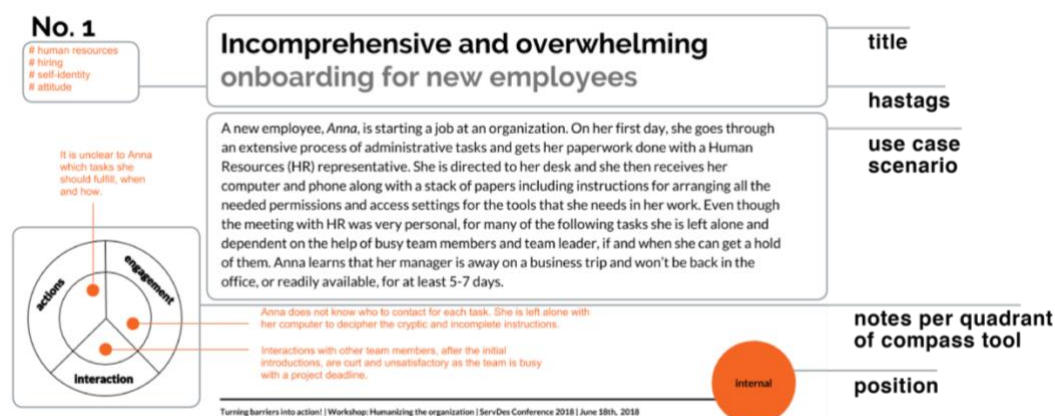


Figure 3: Example of a barrier scenario

The compass (Fig. 4) is a critical element of the workshop, functioning as a tool for assessment and ideation. The compass is a circular graphic image divided into four quadrants describing the key topic areas and two nested circles describing the contexts inside (employees) and outside (customers) of an organization. The white circle between the two layers represents the—according to previous research (Augsten, Gebhardt, & Maisch, 2016; Augsten, & Marzavan, 2017)—rarely recognized transition between the two.

Of the four compass quadrants, three were predefined for the workshop as *actions*, *interactions*, and *engagements*. Actions include the work and tasks a participant would do or any other related actions. Interactions include the form and content of communication. Engagements include the relationships between people. The compass quadrants could overlap with each other, but they serve as different lenses for evaluating the given barrier. Additionally, each quadrant is supported by hashtags and trigger questions (Table 1). The fourth quadrant was left blank to encourage the participants to consider adding missing

criteria. The participants were asked to use the compass tool to assess the barrier and then to ideate and develop a solution for it.

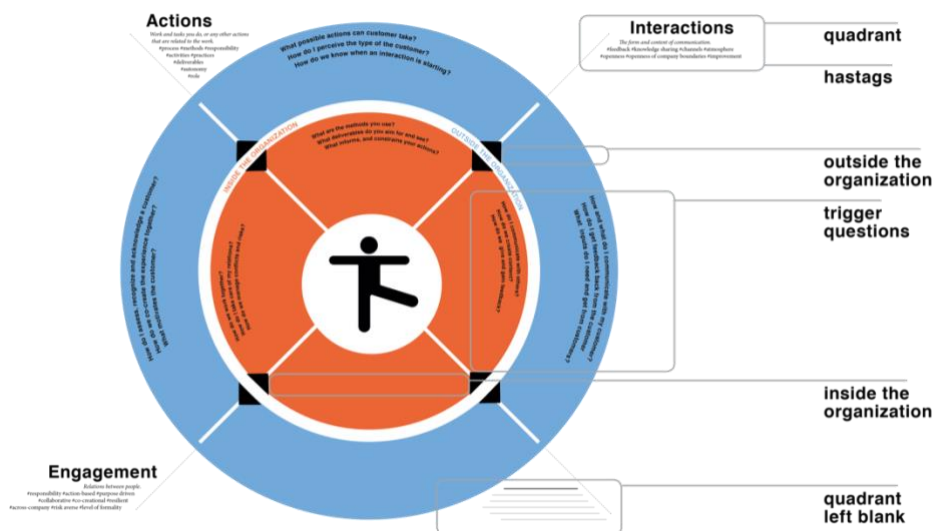


Figure 4: Compass tool

Quadrant	Inside the organization	Outside the organization
Actions	What are the methods you use? What deliverables do you aim for and see? What informs and constraints your actions?	What possible actions can customers take? How do I perceive the type of customer? How do we know when an interaction is starting?
Interactions	How do I communicate with others? How do we create content? How do we give and receive feedback?	How and what do I communicate with my customer? How do I get feedback back from the customer? What inputs do I need and get from customers?
Engagements	How do we work together? How do I take care of my relations? How do we manage conflicts and risks?	How do I assess, recognize, and acknowledge a customer? How do we co-create the experience together? What motivates the customer?

Table 1: Trigger questions per quadrant of the compass tool

The compass is based on two assumptions: First, it emphasizes the dependencies of the interactions among employees inside an organization and the relationships between employees and their customers. Second, we believe the quadrants of the compass and our methodology would enable a team to recognize situations they encounter at work, through a methodology that goes beyond “gut-based” or emotionally driven discussions. To scrutinize these two assumptions, we developed the compass tool as an instrument to assess and ideate on the humanization of organizations embedded in the described workshop concept.

Through the use of the compass tool, the teams gained insights that were used as a basis for developing concrete solutions to remedy the barrier. For the development of solutions,

paper prototyping materials were provided for the teams. At the end of the prototyping, teams presented their created solutions to other teams through a three-minute pitch (step 4). After the workshop, the participants were contacted via email and asked for their feedback (step 5). About 20% of the participants replied to the survey and left feedback.

## 4 Research Data and Analysis

For data collection, we divided our roles in the workshop as follows: the presenter for the topic introduction, facilitators for the teamwork, and a documenter, who captured the outcomes of the workshop through audio, images, and video clips. Each participant was asked to sign a consent form for all recordings before the start of the workshop. The teamwork (steps 2–3) was recorded partly as audio, with two recorders on two team tables, as well as video clips and images from all teams throughout the workshop. All digital data were kept associated with the paper materials produced by each team. The aim of the workshop was to test the framework (concept), the compass tool, and the principles to learn and gain feedback about the validity and utility value of the methodology. To do so, we evaluated the data set based on the following questions (Table 2).

Count	Documentation collected	Evaluative questions
8	Set of written text, notes & visuals and sketches, one per team	Did the team complete the assignment as expected and using the prescribed methodology? What challenges did the teams uncover with the tools and methodology? What additions did they make to the compass, and did they recommend an additional quadrant? Other insights?
5	Debriefs of the authors	Insights, observations about methodology & concept
1	Written field notes of one author	Additional context about the tool and methodology in practice
11	Participant feedback (via online survey)	What additional insights did we gain from the participants' retrospectives?
9	Videos and audio files taken by the conveners	How successful were the teams at completing the assignment, and what can we infer from the solutions presentations?

**Table 2: List of evaluated data**

Guided by the questions above and inspired by Grounded Theory (Charmaz, 2014), we analyzed the data through manual coding in three cycles and discussed the findings after each step. For all cycles, the whole data set was analyzed. The first cycle was inspired by open coding, focusing on unexpected, surprising, and extreme aspects and resulted in a list. The second cycle looked for patterns and relations between the findings of cycle one, which are summarized in concepts resulting in the first findings of the analysis, presented in the next section.



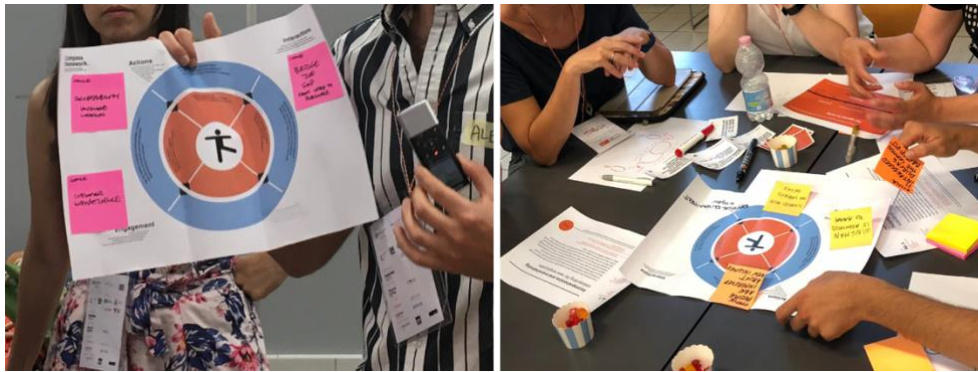


Figure 5: Different applications of the compass tool

## 5 Findings from the workshop

After the first run-through of the concept, we were able to gather initial results. Some of them were expected, especially those concerning the time constraints and the complexity of the workshop topic. For instance, the short time-slot eliminated fruitful discussions and feedback and, therefore, reduced our ability to gather richer or more complete information. Others were surprising and will be discussed along with ideas and avenues for possible additions or modifications of the compass tool as well as the methodology or the integration of an organizational context.

Overall, the topic of “humanizing an organization” has attracted considerable interest, and the workshop was filled to capacity. As one participant stated, “Just acknowledging that we are not machines, but we are some biological organism, is really interesting especially when [the use of] machines right now is increasing as well.” The strong interest and fruitful discussions highlight prospects that are both encouraging and challenging. The strong promise of the title and the easy-to-grasp concept of the barriers indicated to us that there are everyday needs in organizations that demand new methods for developing solutions that place humans in the center.

Looking at the workshop methodology, the set-up can be viewed as a first prototype. Humanizing an organization is a complex and under-researched topic, but the workshop participants gave feedback that, even though the proposed compass tool may not support the full complexity of a situation, provided a good starting point for assessment and ideation. The workshop concept could serve as a starting point for humanizing an organization that can be undertaken, for example, at a local or department level. However, to adapt it to a real-life situation, an approach for capturing emerging barriers needs to be developed. Further research would offer the opportunity to seek additional input, to confirm the hypothesis, and to investigate if ideating barriers through the compass contributes to solutions for a more humanized organization.

The participants understood and used the compass tool to unpack a barrier situation, with the compass criteria. It also helped lead them through ideation and to solutions. Three teams, at our request, proposed additions to the compass quadrant. They suggested adding “physical environment (be together)” or “results” as the fourth area. One team suggested that we rename the four quadrants as *actions*, *actors*, *atmosphere*, and *artifacts*, referring to the existing tool as a (x 4) user-centered method for designing experience by Paul Rothstein (2000). Our proposed approach focused on interpersonal interaction and did not mention any tangible artifacts such as the working environment or working materials. It seemed to be challenging for participants to perceive an organization without its artifacts, such as spaces, buildings, and furniture.

We learned during the workshop that the participants were much more comfortable assessing internal barriers than those involving customers. Looking at the backgrounds of the participants, some of whom are consultants, we know that they work on customer-facing issues regularly. It seems that the teams had greater empathy with scenarios inside an organization, and there is an opportunity to address the reasons behind this finding in future research.

The participants in the workshop were invited to join a team with people that they did not know. Based on the workshop results, this might imply that working in a non-facilitated way as a newly-formed team might increase the teams' sense of uncertainty about how to use the compass, and it might fostered the behavior of jumping to problem-solving despite their lack of comprehension and interpretation of the compass.

To conclude, the developed concept was generally accessible, even if certain aspects need to be refined. The compass tool and the methodology show considerable potential, and they have promise in terms of helping people to assess human issues in their organizations and opening up ways to humanize and positively shape their cultures. However, as mentioned above, more workshops in different contexts and with real scenarios would be needed to test, improve upon, and evaluate the methodology and to further develop it as a concept.

## 6 Key learnings

Besides the previously mentioned findings, three key learnings emerged, which indicate possible directions for further research.

### Empathize with the audience: Jumping from insights straight to solutions

Because the participants in this workshop were experienced designers, they are trained in developing solutions. Nevertheless, after presenting a problem, we first asked them to familiarize themselves with the problem, before ideation. This should allow them to base the solution on true insights gained from using the compass rather than on their preconceived assumptions. Interestingly, even though the participants mentioned not fully empathizing with the barrier, they started ideating anyway. All groups came up with at least one idea. To confirm this insight, we would need to run the workshop with the same time constraints and non-designers, to see if they behave similarly.

The fact that the participants jumped from insights straight to solutions leads to the question of the value of process steps. It might indicate that for those less familiar with design practices, steps provide safety, structure, and reduce uncertainty. Uncertainty may block creativity and the development of solutions. Experienced designers, like those in this workshop, may overlook steps when moving towards ideating. It could be valuable to introduce methodological interventions to avoid falling into well-trodden paths for ideation.

### Linking analysis with ideation: A skinny thread

In practice, and particularly in large organizations, people are still prone to separate analysis (referring to “thinking”) from the development of solutions (referring to “doing”). This phenomenon is well known (cf. Martin, 2009) but challenging to overcome, as it is accompanied by many cultural aspects inside organizations, such as hierarchy, power, and the value of steering instead of executing. Until now, design activities have mostly been delegated to a design department or outsourced to an external design agency, leaving strategy development and decision-making outside the realm of where traditional design activities have been applied (cf. Schmiedgen et al., 2015).

The intent of the compass tool is to combine the understanding of a problem with an approach for developing solutions and to strengthen the link between analysis and ideation. However, the participants found it hard to grasp the way the compass aims to link the two aspects. One participant said, “It was not intuitive to understand how to practically use the compass. Is it suited for analysis or to assess ideas?” To conclude, the tools’ suitability for linking analyzing with ideating needs to be prototyped and retested.

### Dealing with diversity: Understanding different design narratives

Many people have received training or a formal education on design and design methods. Rarely, however, are they able to understand or translate how their learning can be applied within the organization (cf. Weick, 1996). Perceiving designing as an activity or, according to Simon (1969), as “... courses of action aimed at changing existing situations into preferred ones,” occurs in every organization (Junginger & Bailey, 2017). Hence, every organization has a design narrative regarding “design issues, design practices and design principles that dominates organizational life” (Junginger & Bailey, 2017, p. 35). However, those activities do not necessarily belong only to the role of a designer.

Designing is an activity that occurs in every organization, even if people are not aware of it. To emphasize the organizational context, the prevalent design narrative needs to be acknowledged so that solutions can be adapted to it. Addressing this issue is only the beginning, as one participant in the workshop acknowledged: “For me it was quite interesting, when we went from the ideation into something that already exists, how do we map and understand these different logics. What is the logic we are running into when we are designing solutions, and what is the logic the organization already has?” Regarding the whole framework, it would be valuable to examine how and what kinds of barriers emerge to decode existing narratives of the organization and make sense of them while designing.

## 7 Conclusions

In this paper, we have introduced a workshop methodology, conducted through action research, to explore the topic of humanizing organizations among design experts. We presented a compass tool, accompanied by principles and an overarching methodology in order to emphasize the relevance of designing the organization as an “artifact” (Herfurth, 2017), besides products and services. The methodology functioned as a first prototype to concretize current situations in organizations and to provide a starting point to ideate and design solutions towards a more humanized organization.

Through the research we identified possible areas for further research, including additional development of the compass tool and its application in the workshop environment as well as in practice within organizations. Due to its complex nature, the topic of humanizing an organization has many angles and approaches that must be addressed; this research has provided one approach.

The key findings indicate that we are in a first discovery phase for the organizational realm in regard to SD in practice. Further, we learned that even though phenomena such as the Anthropocene, or DT, face similar challenges in their fields, it is too early to determine whether these fields will merge in the future or if there is a tendency for more separation between practice and research. However, regarding organizational change, fields such as organizational studies or approaches such as system thinking might offer information and solutions that could positively influence the SD discourse.



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WE WILL TRY TO BRIDGE  
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investigate **COMPLEX PROBLEMS**

SD IT'S NOT ONLY PRACTICAL, been HIGHLY INFLUENCED by **USERS & CONTEXT**

SD INFLUENCE SERVICES & ALSO **ORGANISATIONS**

BEYOND HUMAN CENTERED → how to achieve **SOCIAL IMPACT**

WHAT DO WE EVALUATE?  
the **APPROACH** or the **SERVICES**

Too MANY METRICS

DIFFERENT EXPECTATIONS **ORGANISATIONS — vs. PRACTITIONERS**

important!

MATURITY of SD in DIFFERENT **SECTORS & DEPARTMENTS**

SD HANDOVER WHO IS GONNA IMPLEMENT IT?  
(GUARANTEE CONTINUITY)

DIGITAL MANUFACTURING & **NEW TECHNOLOGIES**

**HUMAN FACTOR**

HOW SD CAN BE ACTIVE? IN THIS NEW LANDSCAPE?

**COMMUNITY: COMMON, SHARING an IDENTITY**

INTERVENTION of SD in EXISTING COMMUNITIES  
→ SHAPING NEW FORM OF ORGANISATION

SD can **FOSTER PROCESSES** (not only tools)

FOUNDAMENTAL TO REFLECT ON THE **SOCIAL IMPLICATIONS / the MEANING**

TOOLKIT FOR **CO-DESIGN** (USEFUL but DEMANDING)

CULTURAL DIFFERENCES

SHARING & COLLABORATING REQUIRES **NEW SKILLS/ATTITUDE**  
~ Sensibility & Responsibility ~

→ HOW SD CAN CLOSE THE GAP BETWEEN **CITIZENS & the SYSTEM?**

BUILD PUBLIC LEGITIMACY

ENHANCE NEGOTIATION AMONG DIFFERENT **STAKEHOLDERS**

CO-DESIGN SPACES **HEALTHCARE / WORKSPACES**

WE TEND TO **BEAUTIFY** A PROCESS TO **SELL IT**

AESTHETICS — vs. FUNCTIONALITY +

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