Ways of Seeing the Design Material of Service

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Abstract

This paper makes a contribution to the current conceptualisation of service as a design material from three different perspectives. We use definitions of the term material, the connection with service logic and the techniques that service designers use to discuss ways to understand service from a design perspective. Service designers have tools for working with components, things, locations, actions, procedures, interactions and experiences at their disposal. Service designers work with a meta-material for the most part, which is a material representation of the services they are (re-)designing. Unlike fields where the material is worked into a finished form, the material of service design traverses between the concrete and the abstract throughout the design process.

KEYWORDS: design material, perspectives

Introduction

In this paper we develop three ways of seeing the materials of service to give new insights into the nature of service itself, and to give ground for leverage for service design and research. The basis for the discussion is that of Design, which can be conceptualized as transforming the materials of a design situation (Schön, 1983, p.78). If design, as e.g. Schön (1992) would argue, is about a "conversation with materials" what then are the materials of service? There has been some work looking at what it means to be a designer working with services as a design material (see e.g. Clatworthy, 2011; 2013; Secomandi & Snelders, 2011; Blomkvist, 2014) and less explicitly (Holmlid, 2007; Sangiorgi, 2009; Wetter-Edman, 2014). By examining service as a *material*, design has to transcend the tangible, and enter into a discussion of materials in a more abstract sense.

The first way of seeing service is based on an approach using the dictionary definition of material – in itself it expands the concept of material and represents different views on what it can be. However, the contribution here lies in how the definitions provide new ways to

conceptualize and understand service and the design thereof. The second way to see service uses the concept of service phrases, which can be understood as bridges between actions in a service. Also this view has implications for how service design is, or can be, understood. The third and final way to see service it through the techniques used by service designers, and the ways they enable service to be manifested. Before we go deeper into the discussions about the ways to see service, we discuss why it is important to consider materiality in (service) design.

Why consider the materials of service design?

Defining design as a human activity is not easy, but each characterization of design carries with it some indication about what should be emphasized in the practice of design. Any definition hence helps shed light on design from some perspective or emphasise some aspect, which can in turn inspire or make others see the activity in a new way. Attempts to define individual design disciplines can be based on differences in the material, and highlighting different aspects of the design material is a way to open up possible directions, interpretations, and ways of working. Hence, this discussion about what the material of service design is can have consequences for the development of the field, for further research and for education.

Within Product Design, a discourse regarding materials has existed for some time, and material exploration is now integrated into teaching. When talking about a conversation with materials in product design, it is clear which materials are being talked about. Karana, Hekkert and Kandachar (2008) review the term materials in Product Design and show how the discussion has developed over time. In their article, there is no doubt or discussion of what a material is, within this discipline. Similarly, when Capjon (2005) discusses the use of materials as an ideation tool, the meaning of materials within product design does not need to be described. Indeed, none of them define the term material, since they consider it an unnecessary question.

Within Interaction Design, a much younger discipline, a discussion regarding materials is ongoing and is helping define the discipline itself. Blevis, Lim and Stolterman (2006) discussed software as a material of Interaction Design. Gaver (1996) discussed the social as a material for design. Hallnäs and Redström (2006) explored deep into the foundations of Interaction Design through various materials, and Nordby has discussed RFID as a material of Interaction Design (Nordby, 2010). Löwgren and Stolterman (2004), as a paraphrase of Robert Musil's The Man Without Qualities, referred to software as the Material Without Qualities – the material that can be turned into anything. These discussions help with the ongoing conceptualisation of Interaction Design, and is an important part of the progression and identity of the field.

Buchanan (2001) has talked about what designers produce, or the "products" in design, as a way of distinguishing different orders of design. The forth order is concerned with environments and systems, however "[t]he focus is no longer on material systems – systems of "things" – but on human systems, the integration of information, physical artifacts, and interactions in environments of living, working, playing, and learning." (Buchanan, 2001, p. 12). If the focus is not on materials however, then what is in focus and how can we transform the materials of the design situation?

With the explication of service logic, and introduction of a service dominant logic, the idea of tangibles (or goods) as one half of a dichotomy together with intangibles was questioned (Vargo & Lusch, 2004, Grönroos, 2011). A service logic is said to make the distinction

irrelevant, but for someone working with *shaping* materials this is not necessarily helpful. On the other hand, for someone who is interested in shaping something meaningful and useful, service logic (Grönroos, 2011) provides a model to highlight a systemic nature, as well as distinctions between what a service provider does and can do as part of a provider sphere, what a customer does and can do as part of a customer sphere, and what they do together as part of a joint sphere.

Within Service design, a discussion regarding the materials of Service design is emerging. The most explicit have been focussed on the service touchpoint (Clatworthy, 2011; 2013; Secomandi & Snelders, 2011). Sangiorgi (2009) has discussed the implications of working with service: "When the object of design becomes the way organisations conceive and redesign their own services, Service design needs to become more familiar with the dynamics and issues of organisational change." (ibid., p. 418).

Holmlid (2007) compared Service design to interaction design, in an attempt to describe aspects or qualities of service as a material, and Kimbell (2009) described service design through studying practice. Secomandi and Snelders (2011) explored the object of Service design, and focused upon the tangible and intangible elements of services. Meroni and Sangiorgi (2011) described new ways for designers to work with services and how this will develop designers as facilitators of social and co-creation processes. They mentioned the need to work with processes, relationships and networks within a co-creation paradigm of designing for services. However, they did not identify the materials of design specifically. One exception is Wetter-Edman (2014), who proposes that stories, told between designers and other stakeholder during the design process, should be considered as an important design material.

This paper adds to the ongoing discussion about the materials of Service design. The intention is not to identify and provide a complete picture of what materials mean in and for Service design, so it does not develop an exhaustive list of materials. However, we believe that there is a necessary discourse regarding the materials of service design that must emerge as a means to a discussion of what Service design is, could, and could not, be. Such a discussion gives new insights into service, since something has to be combined, formed, customised and produced to provide service. We believe that these "somethings" have not yet been fully identified and that a discussion about them will give new insights into design of service.

The tangible touchpoint

A central concept in service design and in discussions about material manifestations of service, is the touchpoint (or touch-point). The term was used early on in reference to the blueprinting technique (Bitner et al., 2008) and according to Parker & Heapy, it was used among organisations to become more oriented towards a relational brand strategy. However, where the word was first used is unknown (Howard, 2007). Touchpoint as a word implies a point where a customer touches the tangible interface of a service providing organization. Several authors have attempted to provide more or less complete descriptions of what the term should include, such as people, things, locations, functions, printed media, web sites and so on. Some emphasise the physical part, claiming that these are the things that shape the experience of services (Parker & Heapy, 2006).

However, service designers usually do not physically rearrange the physical layout, the people, and web interfaces of actual services directly, only representations of these, and thus do not directly influence the touchpoints of services any more than they can directly shape

service experiences. In a sense, they are not designing the touchpoints. We will return to the touchpoint later, but first we introduce the ways of seeing service.

Definitions of the term material

The term material is a rich term with many connotations. In relation to design, it is often considered to be something that is physically formed as part of the design and production process. Further, since the term material is not commonly defined as part of design, but taken for granted, it is worthwhile exploring the term based upon its usage in the English language. The following dictionary definition of material is taken as one starting point to explore and consider the nature of service design, and show how it has particular relevance to the design of services. Merriam Webster (2011):

> a) (1) the elements, constituents, or substances of which something is composed or can be made (2) matter that has qualities which give it individuality and by which it may be categorised <sticky material> <explosive materials>

> b) (3) something that may be worked into a more finished form (4) something used for or made the object of study <material for the next semester> (5) a performer's repertoire <a comedian's material>

This definition clearly defines material as something that does not necessarily have physical form and makes the definition interesting as a basis for a discussion of service design. What are the "constituents" of service, what is the "object of study", and what is a service designers "repertoire"? Further when relating to Schön's conversations with material, we can contextualise this as being the designers' conversations with the constituents of services.

The constituents of Service (1)

In design, the designer has to focus upon both the whole and the parts. Schön (1992) describes how the designer must shift stance and "oscillate between the unit and the total ... and between involvement and detachment" (p. 102). In service design, the same is true, in that there is a focus upon the whole and the parts, but of what? Kimbell (2009), after studying several design consultancies, describes how service designers work, stating that:

"The service designers paid considerable attention to the experience of stakeholders engaging with the service, both the service considered as a whole and the detail of the design of the various artefacts involved in constituting it (p. 250). "

There has, however, been little discussion within service design research regarding what the whole is in service design, nor what are the constituent parts, and how designers can best design them (or for them). When considering material, we should therefore consider both the whole as material and the individual parts as materials.

Matter that gives individuality (2)

A second definition of material is that of "matter that has qualities which give it individuality and by which it may be categorised". The term individuality when applied to services can be

understood in a business context to relate to novelty, uniqueness, differentiation and the value proposition. This implies a relationship to innovation as well as categorization.

Each service is unique, but unlike other materials it is unique because the material constantly changes depending on who takes part in it, at what time and at what location. This is one of the fundamental challenges associated with identifying a general description of service as a material. Any attempt to study or observe a service influences the material.

Something to be formed (3)

This third definition of a material, "something that may be worked into a more finished form" relates to its use as part of the design and development process - as an exploration and forming material. Such a material is used in design to explore a problem and model and express characteristics of the final solution. In service design, this raises two questions: negotiation with whom, and using which materials?

Firstly, the nature of service development places the designer into a cross functional team. This brings with it specific needs in terms of ways of working (collaborative) and the challenges this brings. Molin-Juustila (2006) discusses the five critical elements that together create team cohesiveness during the fuzzy front end: personality barriers, different cultural thought worlds, language barriers, organisational responsibilities and physical barriers. Similar elements are identified by Persson (2005) and Pei (2009). The designer in such a team not only has to carry out design work, but also may need to facilitate team cohesion. Since the nature of service design problems can be described as wicked problems, then the designer has to participate in their work through discussion and exploration together with others.

The second challenge for the designer is that of engaging with the problem and solving it through exploration, representation and testing. Typically, a product designer might explore a product form in clay, wood or cardboard as a means of exploring a problem and finding a solution. This process, of problem exploration together with solution-generation is well documented in product design or architecture. Schön (1992) describes this as a reflective conversation with the problem and more specifically as a "conversation with the materials of the situation" (p. 78). Cross (2007) goes into detail regarding the design process and shows how the nature of a design problem can only be found by examining it through proposed solutions and how there is a reliance in design "upon the media of sketching, drawing and modelling as aids to the generation of solutions and the very processes of thinking about the problem and its solution." (ibid., p. 37)

In service design, this occurs within a cross-functional team. By discussing, sketching and prototyping together, the team explores, negotiates, evaluates in an abductive context - a focus upon what can be. This has been termed negotiotyping (Capjon 2004). Capjon (2004) uses the term negotiotyping to describe how physical prototypes function as a catalyser for group processes. He describes this as collaborative conceptualisation or more simply shared experimentation which is facilitated by the designer and supported by physical prototypes. This aspect will be explored further in the third section, which relates to understanding the materials used in design representations.

Service as the object of study (4)

A fourth definition of a material is "something used for, or made the object of study". This definition is singular, implying that there is one object of study, and therefore in relation to

design, must relate to high level concepts in design. In a service design context, this could be one of several considered to be the holistic service offering, or value proposition.

The service designer's repertoire (5)

The final definition of a material is that of "a performer's repertoire - a comedian's material". In the same way that a comedian may have their "material", or "repertoire", there is a need to develop the same for Service design. At present, there is limited discourse regarding what service design is, and its constituent parts. Meroni and Sangiorgi (2011) see service design as a new sub-discipline of design, and Kimbell (2011) states "that designing for service offers an opportunity to rethink professional design and its role in organizations and societies more broadly ..." (p. 49). However the content of this sub- discipline is yet to be defined and discussed. There is therefore a knowledge gap in terms of content for a service design education/practice.

Löwgren and Stolterman (2004) talked about the importance of having a "repertoire of examples" in interaction design: a set of previous solutions, ideas, interactions etcetera, that improve a designer's design capacity. This in turn requires a language for talking about the goodness of various interactive experiences, to be able to verbalise why they are part of the repertoire. A similar line of thinking can be applied to service design where knowledge both about sociotechnical innovations, new services and new possibilities improves design ability. This can be important from a service design education standpoint.

Service phrases

The second view starts with another definition from outside the field of service design itself, but focuses on the meaning of service instead. In service logic, service is described as value-creation in three spheres; the customer sphere, the joint sphere and the provider sphere (Grönroos, 2011). And it is claimed that value is only created by the customer, or, as in SDL, at least phenomenologically determined by a beneficiary (Vargo & Lusch, 2004). This may lead to the idea that the materials of service are the things that are directly experienced by the customer, such as touchpoints, service evidence, front-line staff, etc. However, when trying to understand service in design, another perspective on the material of service arises: that of *service phrases*. These phrases extend across all three spheres of a system of value-creation, and highlight an interdependence – from a material perspective – between them. Before looking closer at service phrases a short description of related concepts are needed.

Koivisto (2009) used a customer-centric perspective of services to propose a framework for structuring services and customer experiences. In the framework, touchpoints were divided into channels, objects, processes, and people, and described as points of interaction where "the service and its brand is experienced and perceived with all the senses." (Koivisto, 2009, p. 145). However, Koivisto (2009) made a distinction between touchpoints and so called service moments: "episodes or encounters where the production of the service and the interactions between a customer and service provider happen" (p. 142). In contrast touchpoints are "instances of direct contact either with the service system itself or with representations of it by the company or some third party" (adapted from Meyer & Schwager, 2007). An example of a service moment is a check-in process at an airport.

Unlike Clatworthy (2011) and Secomandi & Snelders (2011), Koivisto separated the physical attributes of channels, objects, processes and people from the interactions that take place

over time. This means that service moments contain a number of different touchpoints, and interactions with the touchpoints over a limited period of time. Hence, a service moment is defined by the characteristics of a situation. The interactions that take place in that situation are distributed across touchpoints and in time. A customer can e.g. interact with a ticket machine interface, the ticket itself, a queuing process and a person behind a counter in the same service moment.

While both touchpoints and service moments are useful constructs, they are not inherently material but need to be instantiated and activated to actually exist. Rather than being material, the ideas of service moments and touchpoints can be described as *strategies for manifesting services*. In addition, touchpoints focus on interactions between customers and service systems, thus leaving out a big part of services (such as backstage, support, maintenance, customer actions and so on). Here, service phrases play an important role in understanding the design material of service, regardless of whether designers work directly with these or with representations of them.

A service phrase has a recognizable starting point, a development over time, and a recognizable end point (see Figure 1). Holmlid (2012) has used the terms "trigger action" and "closure action" to denote the start and end of a phrase. A simple "trigger action" is that one decides to call for a doctor's appointment when having a sore throat, an action that resides in the customer sphere. The first "closure action" is when the doctor's appointment is set and the phone call is ended. The rest of the service consist of several service phrases: you hang up the phone and drink ginger-water for a week and head off to the clinic. You enter the clinic, wait for your turn, the doctor takes a test and you go home. You take the test and wait while the sample is being analysed and you get the test result. And so forth. All together the phrases can be viewed as a large phrase.
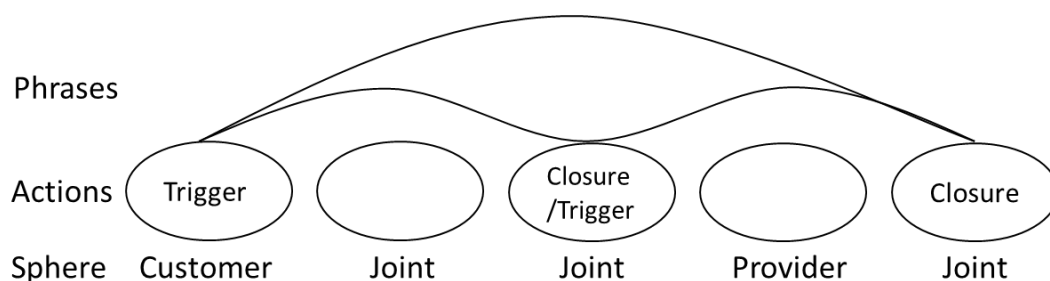

Figure 1: Phrases span across one or more actions in customer, joint or provider spheres.

Seeing phrases as a service material emphasizes scalability, in the sense that a phrase can be made longer or shorter, and that it can be populated with more or less actions. It gives an opportunity to zoom in and out, as larger phrases can be made up of smaller phrases. Phrases highlight modularity, in the sense that the order of phrases can be changed without disturbing the functioning of a module, and a conceptual model of a phrase can be transferred between services. Phrases also emphasize process since the phrases in themselves represent something ongoing. Phrases is based on a multi-actor perspective, and a phrase is also an action that is also an invitation for another phrase to occur.

Working with phrases as a material of service gives the opportunity to actually work with timing, tempo and rhythm in a service. And to direct the interest of designers towards how different actors contribute to these, which could be viewed as orchestration. As an example, during the waiting time from being identified with a possible breast cancer until the result of

a biopsy test, it is not uncommon that a patient calls the clinic with questions, google searches, looks up patient support groups etcetera. This waiting period is often described as long and painful, and when viewing the waiting time as the middle part of a phrase, what the patient is doing is to add activities to fill the waiting time with actions and activities, some of which are 'touchpoints' in that they concern the 'service provider'. This also highlights that there are many actors that drive and direct the orchestration, and that this is good.

Representations of "materials"

The third approach starts with the assumption that "something" is designed in Service design. Hence, it should be possible to identify, by looking at techniques for service representation, what designers transform as part of their design processes. By 'service representations' we mean the strategies used for manifesting service. These strategies result in material *surrogates* for service (Blomkvist, 2015). For instance, a customer journey map that illustrates a future service concept, is a surrogate that allows us access to a future situation where the service exists. Customer journey mapping is thus a technique that makes exploration of a future service possible before it exists.

Two basic types of techniques for manifesting service in design have been proposed: ongoing and definite (Blomkvist & Segelström, 2014). Ongoing techniques represent service flows that are continuously changing, such as walkthroughs, roleplays, and enactments. These techniques focus on their potential to communicate and explore how a service is experienced. Definite techniques, on the other hand, represent services as final visualisations that are persistent points of reference and that specify certain aspects of services, such as storyboards, scenarios, blueprints etcetera.

The techniques available to service designers for materializing and representing services can be one way to understand the aspects of services that are, or can be, designed. Blomkvist (2015) investigated the connection between a list of service design techniques and material aspects of services. The list was generated by looking at techniques in the book This is Service Design Thinking (Stickdorn & Schneider, 2010) and comparing them to empirical studies of service design. This work resulted in the following list:

» Roleplay – making enactments of specific touchpoints or service moments and exploring them, using e.g. theatre methods. Does not require props made for the occasion.
» Customer journey maps – a depiction of the customer's journey through a service with a focus on the experience.
» Blueprints – a depiction of all components, actions and interactions involved in a service delivery from back office procedures to receipts.
» Design scenarios – a description of a potential service use, used to explore certain aspects of the service.
» Storyboards – similar to customer journey maps, but focusing on the interactions and actions. The depiction is built in the same fashion as comic stories.
» Desktop walkthrough – using play dough, small figures, and whatever is available a service location is created and explored.
» Service Staging – one or more locations are built, complete with props that support immersion in the service experience. The service is then enacted. Can be done together with external stakeholders.

The listed techniques can be used to represent different aspects of services. Roleplaying for instance allows designers to explore service interactions, behaviours, expeirences etc, and work with those aspects as materials. This is different from the aspects of services that become available by using e.g. a service blueprint that mainly focus on the processes taking place within a service. The techniques are also qualitatively different, one illustrates an action as a box in a 2D space while a roleplay takes place in the real world and can be experienced by the participants. However, if we disregard the qualitative aspects of the technique, we can generate a list of aspects that the techniques materialize.

» Components
» Things
» Locations
» Actions
» Procedures
» Interactions
» Experiences

These aspects represent both parts of the design process and parts of the outcome of design activities since the technique that were used to generate the list are used for both. I.e. things, actions and experiences are both *worked with* during the design process and part of the outcome of those processes themselves.

Touch-point orchestration - oscillating between the part and the whole

Orchestration as a term was initially used used by Shostack (1984), and as a metaphor perfectly describes the whole/part phenomenon discussed earlier in the paper. In research terms, the orchestration of touch-points is mentioned but not focussed upon in great detail (e.g. Shostack, 1984; Payne & Frow, 2004; Holmlid, 2008; Zomerdijk & Voss, 2010). There is a recognition of the importance of touch-points and their orchestration, but no practical guidance as to how this could (or should) occur. Zomerdijk & Voss, (2010) underline this by stating "... the notion of designing customer journeys and their associated touch- points represents a valuable design perspective" (p. 74). However, this way of seeing service questions the ability to design customer journeys and associated touchpoints.

Most of the techniques discussed above are not described as actually working with material and immaterial aspects of existing services, i.e. service designers do not go out into banks or airports and directly manipulate the physical environments and 'touchpoints' – where customers and organisations meet. Instead, the locations, procedures and experiences are represented in other (meta-) materials. Designers coordinate this material work with the real world and traverse between immaterial, emotional and procedural aspects on the one hand and physical, manifested and tangible on the other hand. To do so, metaphors, abstractions, stories, and many different types of visualizations are being shaped into a more finished form through the amalgamation of real world impressions, design meetings, prototyping and various other activities in the design project.

While service designers make touchpoints available, by creating surrogates of services, they are not directly influencing the material of those services. The surrogates as representations of future services have their own set of affordances. A desktop walkthrough might make it possible to move something from one place of a service to another, but that move might not be possible in reality. Similarly, some feature of the actual service might not be represented in a surrogate, thus making that feature invisible to the designer. Hence, the service

representation is not the service, and traversing between one materiality and another in service design is also a process of translation.

Conclusion: Ways of seeing service as a material

Firstly, from the definition of material, service designers need to have an understanding of how they use and relate to materials as part of their design process (forming), as an outcome (eg. touch-points) and as a competence (the service designer's repertoire). We consider these three dimensions to be of interest and valuable for the future discourse, since they help us understand and perhaps further develop the field of service design. In many ways it might seem obvious to discuss and categorise service design in terms of process, outcome and competences. However, it is a reflection upon the field at present that this view does not exist and is called for. Perhaps it is time now for service design to look at itself and summarise best practice within each of these three areas. This would be particularly useful for the various courses that are now appearing around the world.

Second, a further aspect worth discussion is how service designers use materializations of immaterial aspects of service during the design process as tangible representations. These can be toolkits developed specifically for a project context, or generic toolkits. The proliferation of mapping activities using post-it notes is an example of the former. These strategies for manifesting service is something that characterizes service design, and can be seen as both a way for the designers themselves to explore a situation, but also as the development of boundary objects as part of a co-design process. Upon inspection, it seems that the service designer oscillates between material and immaterial representations of the same things, moving between the abstract (immaterial) and the concrete (material). The different moves in service design being between the actual and the represented. This can be described as "traversing a virtual cleft" in which something in the world is virtualised using visualisation techniques. We end up with a materialisation (tangible surrogate) of a service or some aspect of a service. When we do something with the surrogate it can be seen as a move back across the virtual cleft (it is virtual in the sense that it is not real - think desktop walkthrough) and try to say something about what reality we want the service to exist in. Perhaps this is the conversation with the materials in a service context? Instead of trying to make a strict division between tangible and intangible we could talk about the transitions, traversing, and translations between them? This can be a way to discuss the techniques, the competences required to work with them (including the repertoire), and the output in terms of the actual resulting material.

Third, there is a need to further develop a vocabulary and a discourse around materials in service design, which goes beyond simple tangible design outcomes (such as touchpoints). Well-designed touchpoints are important for service, but are not in themselves the key to understanding service as a material for design. With a concept such as service phrases, an important discourse can start to develop, where not only experiential aspects of time and collaboration become integral, but also how agents, resources, institutions and integrative actions interact to form these "phrases". Service phrases give access to aspects of the material such as rhythm, tempo, intensity, phrasing, etc. But also to aspects such as how initiative is structured, how power is shared and distributed, or levels of engagement. As a consequence, will it also be possible for teams involved in service development and design, to work with

co-creation of pluralistic values as a material, or even include pro-active and adaptive phrasing as an outcome?

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