Views on Implementation and How They Could Be Used in Service Design

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Abstract

Although service designers have proven their abilities in the fuzzy front end of service development, their skills regarding implementation have been criticised and many service designs are not implemented successfully. So far, there has been little discussion concerning service implementation in service design research and there is potential for further development of this aspect of the design of services. This paper intends to contribute to this development by presenting different views on implementation from fields that are related to service design, such as product and interaction design. These fields mostly see implementation as the delivery of generic resources and process models, whereas service implementation (also) involves development and change of the (service) organisation as well as adaptation in use of resources and service processes models. Still, if discussions on implementation in these related fields are translated to a service context, they can provide inspiration for (future research on) service implementation.

KEYWORDS: implementation of service, organisational change, transformation process, adaptation, service logic

Introduction

In services, there are often no clear boundaries between design, production and consumption (e.g. Sleeswijk Visser, 2013), mostly because services are co-created in use (e.g. Normann and Ramirez, 1993; Vargo and Lusch, 2008; Grönroos, 2006) and because they cannot be fully designed, produced and stored beforehand (Lovelock and Gummesson, 2004). This suggests that services cannot be developed and implemented in the same way as products are. Yet, models of service design consist of similar stages as models for product development (e.g. Stickdorn and Schneider, 2011). Service design agencies show a similar pattern (e.g; DesignThinkers, 2011; Engine, n.d; Live|Work, n.d.). So, in some ways service design seems to have taken on the generic models of a design process, in some cases including implementation as a last (add-on) step. But, if design, production and use take

place simultaneously, maybe design and implementation of services should also be considered simultaneously. Instead, implementation of services could be a mindset (Christianssen, 2015), and considered from the start of the project. These two competing views indicate that service implementation is not clearly defined yet.

In addition to the lack of a clear definition, little is known about how to successfully implement services and few design agencies include implementation as a part of their work or deliverables. Furthermore, Mulgan (2014) stated that service designers have so far failed to apply their creative skills to implementation of services, which may have contributed to the fact that many service solutions remain on the drawing board. These issues are the reason why we look into this topic.

Knowledge regarding implementation of services could come from service marketing, which has been discussing service implementation for several decades (see e.g. Tax and Stuart, 1997 Roth and Menor, 2003). Recently, Yu and Sangiorgi (2014) tapped into this literature and developed a framework that related the development of a service concept to the design of a service and the construction of a service delivery system to the implementation of a service. However, there are also other views on the relationship between implementation and design. This paper looks at how a number of fields that are related to service design, such as product design and marketing, interaction design and organisational change processes, view implementation. These perspectives on implementation can be used as inspiration for a discussion of implementation of well-designed services. When we talk about service implementation in this paper, we mean the process of moving from a well-designed service concept and service delivery process to a situation where delivery of the intended service experience is repeatable and constant.

Fields close to service design seem to share a view of implementation as putting generic resources and process models (that have been developed previously) in use. They are thus discussing the implementation of a single entity rather than a complex system of products, touch-points, scripts, relations, activities, etc. that a service is made up of. Hence, the discussions on implementation in fields related to service design should always be interpreted and translated in order to successfully build on the input from these discussions.

Therefore, this paper includes both an overview and discussion of perspectives of implementation in these neighbouring fields as well as how these views can be related to implementation in service design.

Different themes in implementation

We have identified four themes regarding implementation in fields that are related to service design. These themes were developed from an exploratory literature search, aimed at gathering knowledge regarding (various views on) implementation of outcomes of a design process, rather than making an ultimate compilation of this topic. The perspectives are not meant to be mutually exclusive. Rather, to understand and successfully drive implementation, all these perspectives are required.

Literature searches on implementation of outcomes of design and innovation processes were done in the Scopus and Elsevier databases as well as ACM digital library formed the starting point of this literature search. These three databases were selected because they contain publications from various design research fora, amongst others Design Issues (Scopus),

International Journal of Design (Scopus), Design Studies (Elsevier) and Interaction Design (ACM). The outcome of these initial searches were filtered, to gather those papers that included a discussion on the implementation of outcomes of design processes. These papers were then used as a source for additional literature regarding the implementation of outcomes of design processes.

The four themes that were developed based on the selected papers are: *implementation as part of the development process,* which sees implementation as a part of going from a design (prototype) to a (final) product; *implementation as strategy,* which sees implementation as the delivery of generic resources that are designed and produced in parallel to the process of developing the implementation (strategy); *implementation as design after design,* the stage where the outcome of a design process is adjusted to an organisation and vice versa*;* and *implementation as change of practices,* a perspective that focuses on implementation of new routines and ways of working. We discuss these themes in more detail below.

Implementation as part of the development process

Both product design and interaction design literature discuss implementation as a part of the development process, albeit in different ways. In interaction design, implementation is seen as the last phase of the development process (Kienzle, 2008), where a system design is transformed into a working (software) product (e.g. Serrano et al., 2008). One aspect is software development, where implementation concerns building the software architecture (e.g. Réquilé-Romanczuk et al., 2003; Laufer et al., 2014) or the use of a programming language to developing the software code (e.g. Bose and Sugumaran, 1999; Sun and Salcic, 2011). Another aspect of implementation is building hardware (e.g. Li et al., 2015; Hazlewood et al., 2010).

In both cases, implementation is an iterative process (see e.g. Vander Zanden and Halterman, 2001; Kim et al., 2007). During this process, the design artefact may change, resulting in a final outcome that differs from the original design. This process is called design drift (Robillard et al., 2014), which is sometimes also considered a part of design erosion (cf. Van Gurp and Bosch, 2002). Drift and erosion are not negative, but rather a consequences of an iterative mindset.

In product design, implementation is also placed at the end of the development process, where it consists of prototype development and product launch (e.g. Dobocan and Blebea 2014; Buijs, 2003; Buijs and Valkenburg, 2005). Product launch includes (ramp up of) production and commercial launch of the product (e.g. Lenfle and Midler, 2009). Companies seem to face challenges in the transition from development to production and launch (Owens, 2007). Liedtka and Ogilvie (2011) discuss learning launches, which are aimed at testing this transition, more specifically the assumptions regarding the (launch of) the product and its on-ramp strategy (how people "learn about the offering, try it out, become users and enlist others", ibid., p. 174).

Implementation as strategy

The perspective of implementation as a strategy is described elaborately in marketing literature and is considered important, both because the chosen strategy largely determines whether a product is successful or not (e.g. Hultink et al., 1997; Cui et al., 2011) and because it is the most cost-intensive phase of new product development (Cui, 2011). Hultink et al. (1997) defined launch strategies as "those decisions and activities necessary to present a

product to its target market and begin to generate income from sales of the new product" (ibid., p. 245). For a more elaborate discussion of literature on launch strategies see Hultink et al. (1997) and Hsieh and Tsai (2006).

Developing an implementation or launch strategy of a product is often seen as a process that runs parallel to product development (e.g. Buijs and Valkenburg, 2005), where strategic decisions such as what, when, where and why to launch as well as tactical decisions concerning how to launch (Hultink et al, 1997) are taken at different stages of the development process.

Finding the proper launch strategies is considered a key to a successful launch process (Chiu et al., 2006). Studies of launch strategies have identified best practices (e.g. Rossi et al., 2014) and success factors, which suggest a network approach (Bouwman et al, 2010) that focuses not only on the company and the customer, but also on other key stakeholders that are part of the launch (e.g. Di Benedetto, 1999; Owen, 2007). Ideally, these stakeholders are part of the team that plans the implementation of the product (e.g. Kou and Lee, 2015; Smith, 2011).

Regardless of the chosen launch strategy, it should be possible to make changes to the strategy along the way. Since it is impossible to predict how the market will react to the launch of a product, it is important to be able to have a strategy that can be adjusted as soon as there is a first idea of how the designed strategy works out in reality (Cui et al., 2011).

Implementation as design after design

The view of implementation as a (launch) strategy focusses on presenting a product to its target market (Hultink et al., 1997). This perspective neglects the part of implementation that happens when "an individual puts an innovation to use" (Rogers, 2003, p. 20) or when trying to get a technology to work (Fleck, 1994). Similarly, Voss (1988) defined implementation as "the adoption of inventions" (ibid., 55), which starts when an invention has been successfully developed and the first attempt at adoption of the invention is made. More specifically, this can be seen as the process of mutual adaptation of organisation and innovation (Leonard-Barton, 1988; Rogers, 2003), which is argued to consist of agenda setting, matching, redefining, clarifying and routinising (Rogers, 2003). In the first phase, the problem and need are identified, including the search for existing technologies that can be used to fit this need (ibid. p. 422). Next, the match between organisation and technology is planned and designed (ibid., p. 423). The third phase (redefining) consists of the reinvention of the technology in order to fit the organisation's structure. (ibid. p. 424). When the innovation is then put into use in a larger part of the organisation, "people gradually gain common understanding of the innovation as they talk about it with other people in the organisation" (ibid. p. 428). In the final step, the new technology will be fully institutionalised, meaning that it has lost its *newness* and that it has become integrated in the organisation (ibid.). The reinventions that take place during the *redefining*-phase can be seen as design as well (Park and Chen, 2012), thus becoming design after design (e.g. Shidende and Mörtberg, 2014), co-realisation (Hertzum and Simonsen, 2010) or design-in-use (Ehn, 2008). This draws parallels to open implementation as discussed in interaction design (e.g. Kiczales et al, 1997), where the user can control the components implementation strategy, allowing users to determine the exact functionality of various software components (e.g. Wu et al, 2009; Serrano et al., 2008).

It has been argued by Xp (2002) that this process of "bringing the system to its user" (ibid., p. 204) in software development is often complex. Since then, empirical studies of

implementation of (software) innovations have described this process of adjustment of the organisation to the technology and vice versa (e.g. Hocko, 2011; Park et al., 2015), identifying both causes for failure and success factors.

Implementation as a change of practices

The type of implementation of innovations described in the previous section is closely tied to change management (Greenhalgh et al., 2004), but there are differences between implementation of technology and implementation of more complex process innovation (Voss, 1988). Organisations continuously make incremental changes, with periodical projects or planned processes to deliver changes in the organisation (Aken, 2007). Such programmes usually start with a sense of urgency for change (Kotter, 1995) and are ideally followed by the formation of a competent team to drive the change process (Kotter, 1995; Sirkin et al., 2005). This team forms a shared understanding of the problem as well as a vision for the change (Kotter, 1995), which is then communicated to a larger part of the organisation (Kotter, 1995; Fixen et al., 2005). In turn, the vision is adjusted on the departmental level, allowing employees to act on the vision and define what this means for their work (Beer and Nohria, 2000; Fixen et al., 2005). Training and coaching in this stage can help to create understanding among employees for the "why" and the "what" of their new practice (Fixen et al., 2005, p. 42). Finally, the programme becomes institutionalised, although possibly slightly changed with respect to the initial programme design (Fixen et al., 2005).

This implementation process has also been defined in terms of unfreezing practices, changing them and freezing the new practices (Fixen et al., 2005; Aken, 2007).

Commitment from management is considered important for success (Fixen et al, 2005; Sirkin et al., 2005) but should focus on setting the direction, not to push a strict view of the required change, allowing bottom-up engagement in designing the detailed changes (Beer and Nohria, 2000; Fixen et al., 2005). Additional success factors are regular review of the progress of a project and ensuring that people working with implementation have time for this (Sirkin et al., 2005).

Implementing these changes in practice is mostly an organic process, but certain elements about change can be designed. According to Fixen et al. (2005), every change process has a number of core intervention components; prerequisites that need to be in place in order for implementation to be successful. If the principles of intervention (aim and content) underlying these core components (of intervention) are known, the form of the core intervention components (processes, strategies) can be designed to fit a local site of implementation best. This way, strategies and processes can cater for heterogeneity of characteristics (e.g. organisational structure, communication styles) among different implementation sites (e.g. various branches of one organisation) (ibid., p.25).

What does this mean for services?

From the four perspectives on implementation discussed in this paper it follows that product and interaction design talk about implementation as part of developing generic resources and process models. Product marketing speaks of implementation as setting up the delivery of such artefacts to users as a generic process, which can be reproduced. Both these perspectives relate to implementation as the final stage(s) of the process of designing and selling an artefact, which is a too narrow view in the context of services. The perspective of

implementation as change of practices discusses change and adaptation of an organisation, but literature on this topic seems to focus on changes in the provider sphere, neglecting changes in the customer and joint sphere that might be required for successful implementation.

Instead, implementation of services requires adaptation of generic service resources that are the outcome of a design process (e.g. software systems, coffee cups) in order for (members of) an organisation to be able to work with these resources. Furthermore, service implementation requires the development and adaptation of generic service processes models during the delivery of service (e.g. customise scripts, improvising).

In other words, the generic resources need to be adapted in order to become resources that are available, first in the provider and customer sphere and then in the joint sphere where provider and customer meet (Grönroos and Voima, 2013). Doing this allows, these generic resources to be used for value co-creation as it is conceived in the models of service processes that are the outcome of a service design process. In turn, these service process models have to be adapted in use, in order to be able to improvise during the service process, using the resources that are available in the provider and customer sphere (which might be different from the resources that are defined in the service process models).

To some extent, service design has discussed topics related to development of an organisation and adaptation in use of resources and service process models. For instance, diffusion and repurposing of technology in services (Blomberg and Darrah, 2014) as well as resourcefulness and design while the service is in operation (Holmlid, 2012). Yet, there are topics left to learn about and translate from other fields.

One of these topics is implementation strategies for services. This includes matters such as whether and how the development of such strategies can run parallel to the design of the service, like in product design (e.g. Buijs and Valkenburg, 2005), and what successful implementation strategies for services are. Could the principle of learning launches (Liedtka and Ogilvie, 2011) be translated to the launch of services and would it be possible to use the principle of beta versions, commonly used in interaction design, for services as well?
If service implementation is considered an iterative process, aimed at adaptation and improvement of the designed service process models and generic resources, design drift is likely to occur. This drift can point to which aspects of the context in which the service is implemented can be changed and which are unchangeable. Documentation regarding the changeable and unchangeable factors can provide insights that can help in the development of specifications for the design and implementation of current and future services.

Changes in the service process models and generic resources that occur during implementation would likely need to be discussed with other stakeholders in the service delivery (apart from internally, in the service organisation). This requires that stakeholders in service delivery are not only involved in the design of the service concept, but also when developing its implementation strategy and during implementation itself. What ways of involving stakeholders would then be successful, given the nature of service delivery and the often complex relations between stakeholders?

This involvement of the various stakeholders also points to a question of ownership of the implementation. Service designers are criticised for their current lack of skills in the implementation of services (Mulgan, 2014), but is implementation their responsibility, or would it be better if the service organisation takes ownership for this? In the first case, the question is what new skills service designers would need to learn in order to facilitate

successful service implementation. In the latter case the concerns are, for example, how to handle the service design after the design phase, how to safeguard a well-designed service (concept) during implementation and how to transfer ownership of the design to the organisation.

Finally, success factors in the implementation of services as new practices could be investigated. Is it possible to define best practices when it comes to service implementation?

Conclusion

Implementation of services is not yet an integral part of service design, neither in practice nor in service design research. There are initiatives that put more focus on implementation of services (e.g. Sangiorgi and Yu, 2014; Christianssen, 2015), but research concerning implementation in service design is still patchy. This paper aims to contribute to the development of this area by reviewing how implementation is discussed in fields that are close to service design and how these perspectives could be related to implementation of services. Four perspectives on implementation were identified: implementation as part of the development process, implementation as strategy, implementation as design after design and implementation as changes of practices. These perspectives are all equally relevant and should all be understood in order to be able to drive implementation successfully.

Beyond what is discussed in these four perspectives on implementation, implementation of services also requires that generic resources, for example outcomes of interaction or product development processes, are adapted to become available as resources in service processes. In addition, service implementation requires the adaptation of generic service process models, to allow for improvisation with the resources that are available during the service process. Discussions regarding implementation in the fields that we have looked at in this paper do not seem to include these two additional views on implementation. Therefore, discussions regarding implementation in these fields cannot be taken into service design *as-is*, but can be used as inspiration instead.

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