

# Service Design for Effective Servitization and New Service Implementation

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## Introduction

Over the last decade, the transition towards an experience economy made service innovations ubiquitous and essential for creating economic growth and wellbeing (Ordanini and Parasuraman, 2010). Thus, smoothly transitioning from a product-focus to a service- or product/service- focus becomes a priority for many.

Already in 1988, Vandemerwe and Rada described the concept of servitization as “*the increased offering of fuller market packages or ‘bundles’ of customer focused combinations of goods, services, support, self-service and knowledge in order to add value to core product offerings*” (p. 314). They regarded servitization as a key strategy for organizations to undergo a transition and adapt to a new kind of economy where services play a key role in value propositions. Even though the relevance of servitization for (primarily) manufacturing companies is well documented, there is limited knowledge on how to implement a servitization transition effectively (Baines, Lightfoot, Benedettini, and Kay, 2009; Baines and Lightfoot, 2013; Gebauer, Friedli, and Fleisch, 2006). More precisely, whilst it is well acknowledged that servitization requires changes in organizational culture, strategy and structure (Vendrell-Herrero, Parry, Bustinza, and O’Regan, 2014), there is a scarcity of hands-on knowledge providing guidance (e.g., tools and practices) on how product-centric companies can implement those changes and fully capture the performance potential of becoming more service-oriented (Baines et al., 2009).

In this paper we attempt to contribute to this research gap by proposing design professionals as enablers of the servitization transition, and the design approach to service innovation as a set of tools and practices that product-centric organizations can use for service innovation and effective implementation.

By combining different qualitative methods (in-depth interviews and multiple case studies), this article studies collaborations between design professionals and product-oriented client

organizations developing new services. We focus on how the collaboration with design professionals contributes to clients' servitization processes, by establishing different servitization paths for their clients and offering a set of practices that contribute to the implementation of those paths (and subsequently of service innovation). With our findings we contribute to the servitization literature's call for hands-on knowledge on servitizing practices, and propose collaboration with design professionals and adoption of service design tools and processes as an effective solution. Additionally, we contribute to the literature on the role of design professionals as innovation intermediaries, by extending their role to the servitization domain. Particularly, we propose that the role of design professionals in a service oriented context is not limited to facilitating value co-creation processes (Lehrer et al., 2012), but it extends to guiding companies towards a sustainable adoption of service orientation and successful implementation of service innovations.

The remaining of the paper is organized as follows. First, we briefly review relevant literature on servitization and its challenges, and on the role of design and design professionals in service innovation. Then we describe our empirical investigation and present our findings, which we subsequently discuss by introducing a servitization transition path model and by positioning it within existing literature. We conclude with some remarks on practical implications, limitations and directions for further research.

## Literature review

Innovation literature has widely recognized that new services require a different development approach than new products (Papastathopoulou and Hultink, 2012; Stevens and Dimitriadis, 2005). Servitization focuses on the practice of product-centric manufacturing companies shifting towards a service-centric orientation (Vandermerwe and Rada, 1989). In 2009, based on an extensive literature review, Baines et al. (p.555) characterize servitization as "the innovation of an organisations capabilities and processes to better create mutual value through a shift from selling products to selling Product-Service Systems."

Though servitization is a valuable strategy for achieving sustainable competitive advantage in the current service and experience economy, such transition is difficult and posits several challenges. For instance, Oliva and Kallenberg (2003) describe three successive hurdles that might stifle servitization efforts. First, companies might not believe in the economic potential of the services, and thus significant effort should be dedicated to make the servitization transition credible internally and externally. Second, even when companies realize the market potential of services, they might not have the necessary company abilities and the interest in developing them. Finally, a company might decide to undertake the endeavour of servitization but fail in implementing its servitization strategy successfully.

Addressing such challenges entails two core transitions, a cultural one and a capability one (Baines et al., 2009; Oliva and Kallenberg, 2003; Slack, 2005). A service-oriented culture is specific and profoundly different from a traditional product-centric culture (Mathieu, 2001), and changing it requires substantial time and resource investments to make such a shift (Vandermerwe et al., 1989; Foote et al., 2001). Particularly, even if there is company commitment to the change, its implementation is likely to meet resistance from parts of the organisation not understanding the service strategy or simply fearing the implications of cultural change (Mathieu, 2001). Thus, creating a service-oriented environment throughout the company and finding the right people for championing and implementing servitization are key to success (Baines et al., 2009).

In addition to a cultural transition, servitizing companies need to face a capability transition, and develop or acquire the necessary tools and techniques for designing servitized offerings. Designing services or product service systems is significantly different from designing products, given the intrinsic fuzziness, complexity and intangibility of services (Slack, 2005). Existing literature suggests collaborative arrangements with partnership and/or outsourcing agreements with third parties in order to build these needed capabilities (Mathieu, 2001; Windahl and Lakemond, 2006).

However, in spite of a good assessment of servitization's challenges and transition strategies, literature is surprisingly sparse in describing how companies can successfully enact servitization and implement a service orientation in their organization. Even at the strategic level, it is not clear what the extent of the service offer should be, or what factors to consider when deciding on a product-service mix (Pettigrew, Woodman and Cameron, 2001). Furthermore, Nudurupati, Lascelles, Yip, and Chan (2013) argue that there are relatively few empirical studies, and often the findings relate to a single case study based on the insights of a limited number of senior managers. This again limits the applicability of servitization empirical findings across organisations.

Tongur and Angelis (2013) and Nudurupati et al. (2013) bring forward several studies from design research as new perspectives that can support servitization with more action-oriented approaches. Authors like Morelli (2006) and Sangiorgi (2011) have already discussed how design can be valuable for untangling the puzzles of servitization. Particularly, previous literature (Morelli, 2006; Sangiorgi, 2011) has provided theoretical support for design professionals as change agents in service contexts and has anecdotally identified design capabilities functional to this purpose. Whilst this literature offers initial, valuable insights, a clear understanding of servitization patterns and the role of design professionals in facilitating and scaling up these patterns is lacking. We aim at extending this knowledge by using empirical data to characterize how design professionals can facilitate servitization transitions.

## Methodology

We adopt a qualitative research design to collect empirical data on drivers of successful service implementation. As noted by Lee (1999), qualitative research designs are particularly well suited for studying dynamic, interactive processes.

We combined expert interviews with a multiple case study design (Eisenhardt, 1989; Yin, 2003). Thus we conducted 10 in depth interviews with expert in service innovation (both academics and business professionals) and studied 4 NSD projects of collaboration between companies and external design professionals.

As to the expert interviews, each interview lasted approximately one hour, and was focused on the interviewee's experience in service implementation and his/her perceptions on important factors to successful service implementation. These factors were written down on individual cards by the interviewee or the interviewer and, in the subsequent exercise, clustered organized and prioritized according to the preference of the interviewee.

As to the case studies, our level of analysis was the NSD projects, which we investigated with a dyadic perspective by interviewing both the design professionals and key informants from the companies committing the NSD projects. Using multiple projects increases the validity and generalizability of our findings. We theoretically sampled the case studies. Thus, to observe different servitization patterns we selected four NSD projects started by product centric businesses (PCB) with different degrees of experience in servitization - i.e., PCB with no experience in services, PCB offering services as add-on to their products, and PCB offering service value propositions (Raddats and Easingwood, 2010). Additionally, to get a better grip on the role of design KIBS in the servitization transition. The companies undertaking the selected NSD projects were of different size, from different industries, located in the Netherlands, operating in both national and international markets. This ensures a good balance between similarity (for comparison and replications) and variety (for validity and generalizability) across the cases (Yin, 2003). Table 1 provides an overview of the NSD projects for which we collected the dyadic data.

	<b>Truck&amp;Co</b>	<b>MedSupply</b>	<b>NetPower</b>	<b>Qualycare</b>
<i>Size</i>	Large (>250 employees)	Medium-sized (50-250 employees)	Large (>250 employees)	Medium-sized (50-250 employees)
<i>Industry</i>	Automotive; manufacturer of commercial vehicles	Medical supplies	Power grid operator	Home healthcare provider
<i>Current value proposition</i>	Selling high quality commercial vehicles and providing maintenance	Selling medical supplies to public and private healthcare providers	Installing, maintaining and modernising the power grid	Providing healthcare at home or at nursery homes
<i>Initial degree of servitization</i>	Product centric business adding services to its product value proposition	Product centric business	Product centric business	Product centric business offering service value propositions
<i>Project with ServiceDesign</i>	Development of a new service	Development of a new service, Training in service design	Development of a service-oriented value proposition	Development of a new service
<i>Respondents</i>	Design professional, Project leader, Upper manager, ICT developer	Design professionals (3), Project leader (2), Marketing managers (2), Sales director	Design professionals (2), Project leader, Upper manager	Design professional, Project leader, Upper manager, ICT developer

*Table 1 Case studies' description*

As to the data collection, for each project we interviewed several key informants, including the project leader, business stakeholders and service internal and external designers, for a total of 20 interviews. Additionally, secondary sources such as project documentation (briefs, reports, presentations, supporting visual material) and informal observations were also integrated in the data collection. The interviews were semi-structured and open-ended. The interview guide focused on the following topics: (1) respondent's background, and his/her role in the project; (2) project's content, including objectives, stakeholders and main implementation steps; (3) the critical moments in each project; and (4) the results and evaluation of the projects. We taped and transcribed the interviews, which lasted from 60 to 90 minutes each. After each interview, the interviewer developed field notes, impressions and conclusions (Eisenhardt, 1989). In order to avoid respondent biased and unintended social behaviours, we followed the guidelines of Miles and Huberman (1994) by clarifying our study objectives and data collection process to the interviewees, and by ensuring the confidentiality of conversations and results. Since our data collection effort relied heavily on retrospective reports, we followed the suggestions of Miller, Cardinal, and Glick (1997) and Miles and Huberman (1994), and implemented some precautionary and/or corrective actions. First, we encouraged free reporting, allowing respondents to not answer a question if they did not remember clearly. Second, we triangulated answers by asking the same questions to multiple participants. Third, we integrated the responses with secondary data, both during and after the interview.

The analysis followed several steps, according to the guidelines of case study and qualitative data analysis methodology (Eisenhardt, 1989; Miles and Huberman, 1994). First, in line with our research questions, the first author analysed each case separately and selected quotes exemplifying key aspects of service implementation and critical moments in service implementation. Based on the selected quotes the first author completed an initial list of the main themes, constructs and insights for each case. This resulted in a first coding scheme for further refined. Subsequently, for increasing the reliability of within-case analysis and for conducting cross-case analysis, each author coded one case (using the provided coding scheme as a guideline), and the results were compared and combined during three collective sessions (Eisenhardt, 1989; Yin, 1994). We used the 'analysis on the wall' approach as an appropriate technique for capturing the richness of the data set (Sanders and Stappers, 2012). The cross case-analysis refined the list of codes, by adding new entries or by collapsing existent entries into others. From the emerging codes we established tentative relationships between constructs. We then refined these initial relationships through replication logic, regularly re-examining each case to contrast and validate the occurrence of certain constructs. We also compared relationships and constructs with extant literature to emphasize similarities and differences, increase the internal validity of the results, and refine recurring themes and constructs. The iteration between data, literature and analysis was repeated several times. The results of this iterative process are presented and discussed in the following paragraphs.

## Findings

Our findings show that whilst companies are able to trigger servitization transitions on their own initiative, getting the organization on board and actually implementing the transition requires the supporting role of design professionals. In the following paragraphs we use the insights from the in-depth interviews and the case studies to explain how design professionals helped their clients becoming more service-centric by facilitating changes in their mindset and processes, and by maintaining commitment to those changes.

*Creating a service oriented mind-set.* Design professionals enable the servitization transition by facilitating a change of corporate mind-set towards a more service oriented one. By leveraging on their creative and emotionally engaging tools and on their familiarity with divergent thinking, design professionals help organizations to *thinking differently*, thus creating the proper ground for adopting a service perspective rather than a product one. As the project leader at QualyCare observes, “*My first impression is that they were very creative. And I appreciate that, just to have a different way of thinking. And they encouraged us to think different as well. That was actually my main reason collaborate with ServiceDesign rather than with other kinds of consultancies?*”.

Particularly the design professionals in our sample introduced a more authentic user perspective in its clients’ innovation practices. Despite some clients might have been already used to market oriented innovation, design professionals helped them developing a deeper and more authentic understanding of user needs and satisfiers. This occurred by using human centred methods for getting to know the market(s) and developing fitting offerings, and by engaging clients directly with such human centred activities. As the NetPower case illustrates, using contextmapping for gaining user insights on what power energy really means for people’s life helped the client organization experiencing the user perspective and subsequently embedding it in their service offering and way of working.

Relatedly, design professionals not only provided a deeper understanding of the user perspective, but also helped clients translating it into service/PSS offerings fitting this perspective. As the project leader of Truck&Co recalls, the design professionals made the team so genuinely engaged with user needs that it became very easy and straightforward to develop a driving service accordingly, with no disagreement on its feasibility and market potential.

In some cases, the user-oriented mind-set became ingrained not only in the process of developing and new service, but also in the client organization itself. For instance, in the MedSupply case the user perspective was understood and embraced by the entire company for driving their innovation portfolio decision making (e.g., what are the most appropriate innovation project to come). In the QualyCare case the design professionals helped the client organization in embedding the user perspective in their company vision, as a starting point for

shaping the organization and its core processes accordingly.

*Creating a service oriented innovation process.* In addition to instil a service-centred mind set, design professionals also help companies acting differently by introducing an user-centred and design driven innovation process that is more suitable to the development of new services.

As literature has shown, the process of developing new services differs from the process of developing new products, in terms of higher complexity, lack of a linear structure, and need for integrated implementation. Our empirical research shows that design professionals helped companies transitioning from a product oriented towards *a service oriented process* by introducing their user-centred service design process (“*[The designer] brought along [the user centred perspective] and thus we have further refined [the service design] approach. Previously the approach was defined in broad terms, there’s a building-the-team phase, the analysis phase and then we’ll think of developing things, and writing up a business case. But [the service design approach] clearly has further refined our approach towards a more user-centred one, and thus a more service oriented one*”, Project leader, NetPower). The service design process introduced by the design KIBS appeared to be more structured than the client’ original way of pursuing the servitization transition (“*This proposal is a plan on how we are going to come in a number of steps to a business case for [the new service proposition]*”, Design professional, MedSupply), and at the same time simple enough to be quickly implemented (“*No, because their project plans are always very basic. And that’s fine with me, so you commit to the main lines of the project proposal, and that is just part of the approach*” Project leader, QalyCare).

By introducing a clear, simple structure in their clients’ service development process the design professionals blended the benefits of the creative and divergent design approach, with the benefits of the linear and rational approach commonly used in managerial problem solving. As the design professional in the NetPower project recalls, having tangible deliverables (like the customer journey) really helped the company to get a feeling of moving to a goal and being on track in the development of the new service. According to the Marketing Manager of the MedSupply project, having such clear deliverables and a set of specific tools for providing them also created a common language across different stakeholders, with positive consequences for generating commitment and project ownership.

*Introducing a bottom up approach to service innovation.* According to our empirical investigation, design professionals also promoted a more bottom up approach to innovation, where, in order to capture the user perspective, ideas are generated from innovation teams close to the market, and then promoted through different company levels till top management. This bottom up approach is more appropriate for effectively implementing the service process discussed before. For instance, in the NetPower case, whilst the servitization initiated with a top down approach (as the initiative of the top management), the design professional introduced a more bottom up approach for its implementation. Thus, the value proposition for developing the new service was

not defined by the top management and then passed down for its execution, but rather derived by the innovation teams through the combination of different ideas and user insights. Subsequently, the proposition was improved and consolidated by integrating the creative inputs from different company levels till top management approval.

The bottom up adoption of innovative ideas is achieved by consensus, thus by involving different, influential departments in perfecting the idea/value proposition and by emotionally engaging decision-makers with the innovation project. For instance, in the MedSupply case, the design professional organized a series of workshops to help different employees understanding why a service innovation direction was undertaken and to encourage them to contribute to its implementation. This consensus-driven approach is particularly relevant for servitization, since implementing the transition might require substantial organizational and structural changes at different levels in the company.

*Creating commitment to servitization.* The servitization transition requires companies to permanently modify their way of thinking and acting. This change might be perceived as risky and many actors can deviate from the servitization transition because of their risk adversity. As the design professional working for NetPower recalls, the effective accomplishment of the servitization transition was challenged by the client's continuous need of finding compromise between the current organizational structure and strategy and the changes requested by servitization. “[*The organization*] is steering towards that compromise all the time. Without them realizing, I just notice that we [i.e., the designer] say this and they say that and let's meet in the middle, so we get somewhere. And in this project, that's a bad idea”.

Our data suggest that design professionals play an important role in reducing cultural resistance and *keeping companies committed* to the servitization transition. Achieving such transition requires companies to think differently and to act differently. Such commitment needs to be renewed and maintained throughout the entire project, especially in those critical moments in which organizational and structural changes might emerge as necessary for effective service implementation.

Design professionals maintained organizational commitment to the servitization transition through two key practices, namely the training approach in the execution of the projects and the frequent use of visualizations throughout the projects. These practices engage the organizations with the transition on a deeper level, by creating a deep, shared understanding of the servitization transition and by letting the organization, especially the employees experience the service design process.

Design professionals in our sample invested significant time at the beginning and during each project in training the client team in using service design tools, so that they could execute the

service design process together with the design professionals and develop ownership to its' outcome. As a manager from MedSupply recalls, the training sessions on human centred research and customer journey mapping helped in creating awareness about the different innovation approach, in keeping the team committed to a paced and effective execution, and ultimately in facilitating organizational learning. As explained by the design professional involved in the same project, *“the training program for the development of services goes in parallel with concrete work on developing those services”*. Thus, in the planning and execution of an NSD project, designers balance activities aimed at generating a new service with activities aimed at educating stakeholders (including top management), team members, and employees in the service design approach.

Engaging the team through a training approach helps reducing the perceived uncertainty of NSD projects. Whilst uncertainty characterizes any innovation project, in service innovation the perceived uncertainty is intensified by the intangible nature of the outcome, which can hinder a shared understanding of the project outcome and its accurate and thorough implementation. Designers in our cases used a variety of visualization tools for reducing the perceived intangibility and, thus, enabling effective service implementation. The frequent use of visualizations of the emerging new service (e.g., the blueprint, customer journey map, storyboards) makes the NSD outcome more tangible and easier to communicate to different stakeholders. The use of compelling images and a narrative style makes the object of communication also stick in the mind of stakeholders for longer (*“In the beginning of the project the service blueprint, but also to the personas [...] bring a lot of information to you and to a point that [it stays in your head for a significant amount of time”*, Project leader, QualyCare). Additionally, clear, tangible visualizations stimulate business stakeholders to take decisions, to act consistently with the service outcome and eventually starting its implementation. As the design professional in the NetPower project indicates, *“There were documents, so we had a service blueprint, and we had a couple of persona’s, and we had insights, infographics of users, and we had done desk research. But to present this in the shape it was, and consolidating this in a business case on which the Board of Directors can make a decision. That was still quite a lot of work.”*

## Discussion and concluding remarks

Adopting a servitization strategy brings significant cultural and organizational challenges (Brax, 2005; Oliva and Kallenberg, 2003; Slack, 2005). Our empirical data show that design professionals can support companies in addressing such challenges by instilling service-oriented practices and by maintaining commitment to the servitization transition. By taking a design perspective, we extend the knowledge base in the servitization domain, which builds on several research communities (e.g., service marketing, service management, operations management, PSS, service science) but has never generated empirical knowledge on the complementarities between servitization and design principles (Lightfoot, Baines, and Smart, 2013).

For instance, a key requirement for effective servitization transitions is a strong customer centricity, where customers are no longer just provided with just products, but more integrated and tailored ‘solutions’. Although few authors in the service management field have conducted empirical research and developed tools and techniques for enabling product-centric companies to understand value-in-use for customers (Ulaga and Reinartz, 2011; Morelli 2006), it is not yet clear how to develop such a service-specific capability and the associated processes for using it to address the variety of customer needs. Our data have shown that integrating design professionals can help servitizing companies to start developing such capability. Design professionals in our sample enabled their clients to identify users’ latent needs and requirements, develop service-focused value propositions to address them, and translate the value propositions into meaningful experiences and touch-points. Given design professionals’ expertise in user centeredness and their capability of embedding a customer oriented mind set (by training their clients in user centred methods and by engaging them with their customers), they represent a ‘natural’ partner for servitization transitions. Their actions in co- designing the new service-oriented propositions together with their clients - by instilling the right mind-set and the right process - can have a large impact on the cultural and organization transitions needed for effective servitization.

By giving design professionals a central role in servitization transitions we also empirically contribute to extend the importance of designers and design knowledge for firm competitiveness in service contexts (D’Ippolito, 2014). Specifically, previous studies limited the role of design professionals to creative tasks in service innovation and in facilitating value co-creation across stakeholders (Lehrer et al. 2012). Our study suggests a much broader role for design professionals, which become strategic partners in the entire servitization transition and in overcoming the key challenges to its effective implementation. Relatedly, design processes and design tools – i.e., the service design process, visualization tools – provide concrete directions on how to implement the transition to more service-oriented competitive strategies, thus answering the central call for more hands-on knowledge in the servitization research domain.

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