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**THE CHALLENGES OF IN-HOUSE SERVICE DESIGN IN
ORGANIZATIONAL TRANSFORMATION: A CASE STUDY OF A
MULTINATIONAL MANUFACTURING CORPORATION**

by

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Chapter 11

The Challenges of In-House Service Design in Organizational Transformation: A Case Study of a Multinational Manufacturing Corporation



Krista Korpikoski

Introduction

During the last two decades, design has increasingly been implemented as an in-house development activity within the manufacturing industry and service organizations, with regard to strategic renewal (Kolko, 2015; Kurtmollaiev et al., 2018; Ravasi & Lojacono, 2005; Yoo & Kim, 2015). Despite this, design is seen only as a support function in many organizations (Oakland et al., 2021) and not as a dynamic, ongoing activity. Many “organizations still exist at the delivery end of the thinking life cycle, not at the discovery end” (Golsby-Smith, 2007, p. 22). Hence, design is not seen as a strategic toolkit shaping new futures. Predominantly customers in this kind of “non-design” organization come last, at the end of the delivery life cycle, as objects to whom the developed services and products are sold and delivered. In opposition, design offers a new approach to strategy immersed in a social process of argumentation and debate, with the customers and users at the discovery end (Golsby-Smith, 2007). However, embedding design expertise might be challenging in organizational contexts, which strongly emphasize operational management in terms of the delivery end, to defend the status quo (Golsby-Smith, 2007). Hence, design is not always effectively managed and might not be integrated into business processes (Borja de Mozota, 1998).

The strategic business impact of design, economic design value, and return on investment of design have been elaborated in many studies (Candi et al., 2010; Cheng et al., 2012; Danish Design Centre, 2003; Den Ouden, 2012; Design Council, 2007; Grzecznowska & Mostowicz, 2010; Hertenstein et al., 2010; Rae, 2014, 2015, 2016; Whicher et al., 2011; Zec & Jacob, 2010). These studies bring forward design

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impacts in terms of improved economic output/profitability and better competitive position of the organizations that use design. However, such knowledge alone is not enough. More understanding is needed in terms of the input, in terms of what is required from the organizations that start applying service design as a bottom-up activity (Meurer, 2001). Such understanding can offer knowledge on which areas to improve and develop within organizations, to enable more efficient management and use of human- and customer-centric working cultures in practice. Therefore, this chapter asks the following question: What are the challenges from the perspectives of different organizational stakeholders that occur when in-house service design is used in service development?

The results of this study are based on a qualitative case study of a multinational manufacturing corporation conducted by the author. The author has a working background as an in-house service designer within the organization under research. By the summer of 2018, when the research data was collected between May and August, in-house service design had been in use in the organization approximately for four years. The data of this study consists of 17 semi-structured interviews including 19 interviewees and a group discussion of a service design value workshop of four in-house service design experts and a service design manager. Experiences of stakeholders from all organizational levels are brought forward except for the chief executive officer (CEO) and shareholders. The data has been analysed using the conventional content analysis method. The results discuss the qualitative internal organizational challenges by presenting five challenge categories: (1) lack of organizational understanding of service design, (2) conflicting development processes, (3) tight scheduling and resources management, (4) colliding decision-making cultures, and (5) absence of organizational performance measurement alignment.

Description of the Organization Under Investigation and the Role of Service Design

The organization under study is a matrix organization, a multinational manufacturing corporation with over a hundred years long history in engineering and manufacturing. The organization structure is similar to that of other manufacturing businesses. The organization employs approximately 60,000 employees globally and it produces equipment, maintenance, and consultation services. The role of services has become more crucial for the organization due to the transition from manufacturing economies to service economies, a revolution of Information Technology (IT) in the latter part of the twentieth century (Shah et al., 2006), Internet of Things (IoT), and increased customer demands. Hence, the organization is required to understand customer value in depth, to understand customers' processes and contexts that affect their experiences (Andreassen et al., 2016). Therefore, service

design as a practice has become a useful and valuable approach for the organization regarding service development.

Prior to service design, product development activities followed more or less Cooper's (2001) Stage-Gate process model within the organization under investigation. End-users had been the main source of information for product and user interface designers. Business-to-business customers had not been regularly involved in the development projects of R&D. In addition, the development of services had mostly been in the hands of business stakeholders. As a follow-up of in-house service design, human- and customer-centric work practices have become increasingly central. Hence, the role of service design has become strategic in the organization. The service design team is located in the company headquarters to work together with other business stakeholders and different departments. In addition, service designers have been hired elsewhere to support area- and country-level development. They perform an active role, especially in the early phases of service development. Co-creation activities such as customer research, ideating, prototyping, testing, and piloting together with customers and internal stakeholders are a part of service designers' work. They hold a strong communicative and facilitative role within the development projects. Service designers handle projects holistically when examining detailed processes, and solving complex issues and challenges. Thus, they provide strong support for management regarding decision-making.

Theoretical Background

Service design is a development approach that covers the entire process of service development (Goldstein et al., 2002; Holopainen, 2010). It has extended its focus also to service systems and organizations instead of merely concentrating on developing services (Polaine et al., 2013; Yu & Sangiorgi, 2014). It is a methodology that builds heavily on design thinking, which "allows the firm to see through the eyes of the customer" (Andreassen et al., 2016, p. 23). As a creative, holistic, and customer-centric bottom-up activity, it differs from the conventional views of practicing business (Kurtmollaiev et al., 2018; Meurer, 2001). In this study, service design is seen as a human- and customer-centric development methodology and practice, which holds a strategic (outside-in) development process – a process where analytical and creative reflections intellectually take turns. People (customers and employees), front- and back-end of services, products, digital systems and tools, processes, and practices are naturally the subjects of service design.

Challenges of Design Practitioners in the Area of Transformation Design

Today, design is used for solving complex problems in different contexts by enabling a wide range of stakeholders and disciplines to collaborate in the design process to develop practical and desirable solutions (Burns et al., 2006). Hence, design is becoming transformational due to its role in affecting services, organizations, and societies. This is called transformation design, originally set forth by Burns et al. (2006). Design practitioners face both philosophical and practical challenges in the area of transformation design (Burns et al., 2006). The philosophical challenges designers face are: (1) the loss of personal creative authorship by collaboratively facilitating others' ideas; (2) shaping behaviour of systems, interactive platforms, and people's roles and responsibilities rather than form; (3) transformation design is never done since emergent systems keep changing; (4) creativity happens in run time in short design cycles of inflow and in situ of the market, not just in design-time in studios as safe zones; (5) diversity over the quality of accepting what's good enough; and (6) design becomes a Pro-Am community of shared practice including professional educated designers and amateurs, or the non-design trained (Burns et al., 2006, p. 26).

The practical business difficulties and barriers, which designers face, relate to questions about (a) leadership and value; (b) the development of new business models, tools, and processes; and (c) the encouragement of new skills and orientation among designers (Burns et al., 2006, p. 27). Hence, regarding the practical challenges that designers face, "an appropriate shared language and evidence base" should be built up to support "communicating the value and impact of a transformation design process" among internal stakeholders (Burns et al., 2006, p. 27). In addition, better tools and techniques must be developed to be shared in multidisciplinary collaboration among stakeholders, and non-designers within organizations must be induced into design practices (Burns et al., 2006; Junginger, 2008; Pinheiro et al., 2012; Sangiorgi, 2011).

Service Design Is Transformational Since It Facilitates Change

Service design "grows into a powerful transformative force that is capable of changing institutions", and hence, the organizations, which start implementing it, should prepare for organization-wide transformation regarding changes in the mindsets and routines of employees (Kurtmollaiev et al., 2018, p. 70). Sangiorgi (2011) argues that service design is becoming transformational due to its capabilities in facilitating change within organizations since it provides the tools and capacities for human-centred innovation. Thus, designers are required to (a) engage in strategic processes of business problem definitions, not just respond to given briefs as problem statements; (b) think systematically; (c) apply design in broader social,

economic, and political contexts; (d) collaborate fruitfully with other disciplines; and (e) champion a human-centred design approach at the highest levels (Burns et al., 2006, pp. 27–28).

According to Andreassen et al. (2016, p. 24) service design, especially service system design, can “enhance an organization’s process, structure, and culture in creating value for customers”. They argue that service design might facilitate organizational change by affecting organizational performance and customer experience through external touchpoints. Internal organization change happens by affecting the touchpoints that affect internal IT systems and administrative procedures, personnel satisfaction by frontline and support personnel in addition to virtual and physical service delivery (Andreassen et al., 2016). Hence, the “organizational structures, processes and culture will inevitably be impacted by implementing an outside-in perspective in service design” (Andreassen et al., 2016, p. 24).

Junginger and Sangiorgi (2009) argue that service design can facilitate organizational changes on three levels, which are (1) artefacts and behaviours; (2) norms and values; and (3) fundamental assumptions of an organization. Pinheiro et al. (2012) state that the object of change may extend to organizational norms and cultures from artefacts and behaviours if service design practitioners involve organizations in customer-centric conversations. Shah et al. (2006) propose how an organization can transform from product-centric to customer-centric through changes in organizational culture, structure, processes, and financial metrics. However, for any transformation to be successful, it requires strong leadership commitment concerning the organizational realignment of horizontal and vertical structures through process and systems support, revised metrics, learning, and continuous improvement (Shah et al., 2006).

Due to the transformational force of service design, its use may contradict with organization’s existing innovation routines, processes, and practices (Kurtmollaiev et al., 2018; Yu & Sangiorgi, 2018). Hence, the author of this study argues that organizational challenges may occur since service design facilitates change through iterative customer-centric outside-in working principles that may be contradictory to the existing linear innovation processes and fact-based decision-making cultures. Therefore, in this study, transformation design is seen through the perspectives of service design.

Organizational Challenges That Arise from the Use of Service Design

Service design requires open and experimenting cultures to support its ways of working. Hence, the success of embedding service design depends on the level of understanding of the value of service design principles and tools (Kurtmollaiev et al., 2018). In “non-design”, organizations imagining customer emotions and guessing their needs is common, and hence, managers might not see value in

interacting with customers (Kurtmollaiev et al., 2018). Thus, in this kind of institution, the right mindset of using service design does not exist (Kurtmollaiev et al., 2018). The experimental nature of service design might be seen as too messy, fuzzy, and risky for the organizations – “nothing like the conventional formal stage-gate process” (Kurtmollaiev et al., 2018, p. 68). Therefore, in institutions where performance orientation and formal and linear processes are favoured, embedding service design may be hindered (Kurtmollaiev et al., 2018). Service design work might be tried to be squeezed into the existing models, which is not fruitful ground for service design (Kurtmollaiev et al., 2018). This causes high frustration among service designers while resistance to real changes in innovation and delivery processes keep existing within the organizations (Kurtmollaiev et al., 2018). In addition, service design might be seen as trendy, and as a consequence of this, it might be seen as an instrument to be used only with a symbolic meaning of using it (Kurtmollaiev et al., 2018).

The existing practices, meeting business key performance indicators (KPIs) and personal goals to sustain the status quo, might inhibit the use and implementation of service design on a wider scale (Kurtmollaiev et al., 2018). Issues also arise due to tight resources. Several projects run at the same time. Hence, they suffer from a lack of time, funding, and human capital. In addition, managers might be unwilling to “release their best resources to work on interdisciplinary projects within cross-functional teams” since this may imply “the loss of project ownership and direct control” (Kurtmollaiev et al., 2018, p. 68).

Top management should encourage the creation of service design-based common vocabulary to enable shared corporate language by realigning KPIs with service design principles and objectives and provide room for experimentation (Bailey, 2012; Kurtmollaiev et al., 2018). Encouragement and rewarding methods should be in place (Bailey, 2012) such as performance-appraisal systems (Kotter, 1995). Design should be integrated into management styles to encourage the use of design amongst staff (Bailey, 2012). In addition, specialized teaching and training in service design should be offered to managers and employees to familiarize them with it in parallel with business practices throughout the organization to initiate behavioural change (Bailey, 2012). This is due to employees’ personal experiences with service design, which “can further ensure a smooth transition from a rigid shareholder-value-focused firm to a more flexible customer-centric and design-driven organization” (Kurtmollaiev et al., 2018, p. 71). Hence, all of these are crucial elements when building in-house service design capacities and capabilities to support “delivering input to the business strategy in the long-term, while also delivering value to the business through projects in the short-term” (Bailey, 2012, p. 2). However, innovating change and new practices might take time for large organizations, and hence, support must come from all management levels if a change in the culture is to be achieved and sustained (Bailey, 2012).

The organizational challenges and development needs brought forward by Kurtmollaiev et al. (2018) and Bailey (2012) are in line with Deserti and Rizzo (2014), Holmlid et al. (2017), Junginger and Bailey (2017), Lin et al. (2011), Sangiorgi et al. (2012, 2017), and Sangiorgi and Prendiville (2017). They all bring

forward the need to develop and do changes in terms of structures, processes, systems, and practices to support design work since they work as crucial elements in shaping internal organizational behaviour regarding innovation practices. When these are viewed as existing support structures, they can either enhance or hinder participatory and co-creative micro-scale innovation in the development of future macro-scale visionary solutions to enhance organization strategies (Deserti & Rizzo, 2014).

Research Design



This research is a qualitative case study, which follows an inductive research approach. Perspectives provided by Stake (2005), Merriam and Tisdell (2015), and Ghauri and Grønhaug (2005) are applied. Hence, a case study is not seen as a method (Stake, 2005). Instead, the organization under study, a multinational manufacturing corporation provides the context to discover and learn about the phenomenon: the challenges that are experienced from the perspectives of different organizational stakeholders through the use of in-house service design. Hence, the phenomenon under investigation is seen as intrinsically linked with the case (Merriam & Tisdell, 2015). Thus, it is difficult to quantify and prove the phenomenon outside its natural setting and context (Ghauri & Grønhaug, 2005).

This research follows inductive reasoning, which is natural for qualitative research. In inductive reasoning, the results are achieved through theorizing by making sense of the data (Gillham, 2000; Ghauri & Grønhaug, 2005). Thus, the results provided in this study are based on interpretations of the data to provide more abstract generalizations and ideas. Everything that comes up from the research data is interpreted as each person's individual and unique experiences with in-house service design within the organization. Hence, informants' opinions do not represent official statements of the organization under investigation. This was brought up orally and in writing in interview and workshop consents, which were collected from each informant before interviewing them.

Participants and Data Collection

The data set of this study consists of 15 individual and two pair interviews, and a service design value workshop. The 17 semi-structured interviews include 19 interviewees from all five organizational levels except for the CEO and shareholders. The service design value workshop includes five participants: four service design experts and a service design manager. The total number of informants is 21 regarding the data used in this study including the workshop participants who did not join the interviews. Eight of the informants are females at the levels of specialists, managers, and heads. The rest are male. The research data were collected from May

Table 11.1 The data set of this study

DATA SET 1	DATA SET 2
17 Semi-structured Interviews	A Service Design Value Workshop
	
19 Interviewees	5 Workshop Participants

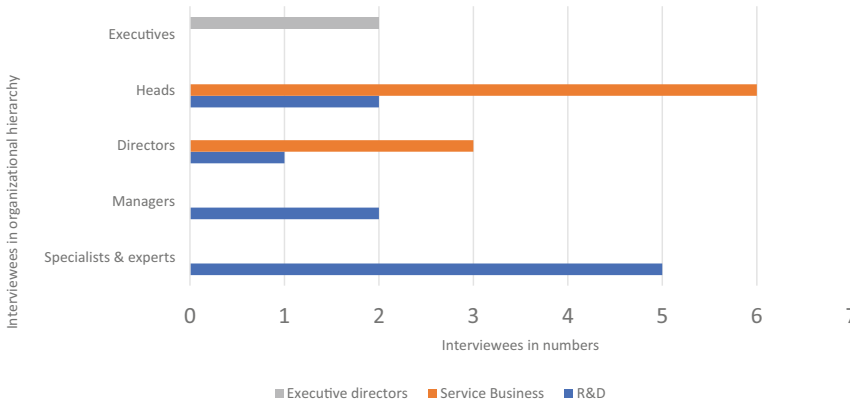


Chart 11.1 Interview and workshop participants

to August 2018 when in-house service design had been in use approximately for four years within the organization (Table 11.1, Chart 11.1).

The semi-structured interviews provide perspectives on management’s experiences from the areas of service business and R&D related to the organizational challenges in terms of the use of in-house service design. Two of the individual R&D interviews provide also an in-depth understanding of the existing product development processes and project management systems. In addition to these, two semi-structured pair interviews provide perspectives on the challenges experienced by in-house service designers: (1) two service design specialists, and (2) a service design manager and a service design specialist. Below are two examples of the interview questions, which were presented related to the challenges of in-house service design:

1. Have you faced any challenges with service design or with service designers? What are the challenges?
2. What are the drivers and barriers when integrating service design in the organization? Are there any experienced obstacles? What? When? How? Why?

The meaning of the service design value workshop was to understand what in-house service designers experience as the positive impacts of service design utilization within the organization in addition to the challenges that they face. Two posters were hung on the wall, which included the following headlines: (1) positive values of service design, and (2) progressing values of service design. The latter topic regarding the challenges (progressing values) constructs the data regarding the topic of this study since it provides answers to the research question. The workshop was chosen to be analysed to provide more in-depth perspectives on the experiences of in-house service designers in comparison to the considerable amount of management interviews. The workshop lasted for 2.5 h. The topics were considered first individually by writing thoughts down on post-it notes and attaching them to the posters. Then the individuals freely presented, discussed, and reflected upon their thoughts.

The data is limited to the perspectives of executive directors, service business stakeholders, and R&D personnel since the purpose of this study was to understand service design challenges from the perspectives of business and service design. In terms of the R&D department, the views of user experience and industrial design specialists were left out since their views are a matter of another research publication. In addition, views of marketing, IT, human relations (HR), strategy, and customer experience were left out since the concentration of this study is to compare the perspectives between service design and management from the areas of service business, R&D, and executive directors.

Results

Conventional content analysis was used in this qualitative case study. According to Hsieh and Shannon (2005), it is an appropriate method when no previous theory exists or the research literature on a phenomenon is insufficient. In conventional content analysis, the categories are not predefined, but they are formed based on the data, for example, basis on the perspectives provided by the interviewees (Hsieh & Shannon, 2005). Content analysis aims to develop new concepts, models, or phenomena, but not new theories (Hsieh & Shannon, 2005).

In this study, the data analysis began by importing direct quotes from interview and workshop transcripts into an Excel file. To provide answers to the research question, the quotes naturally were chosen related to the challenges of in-house service design. They were organized into five columns according to the roles of the interviewees at five levels. Then the quotes were subdivided into meaning units based on the phrases related to the same meaning, as instructed by Graneheim

and Lundman (2004). Next, the meaning units were labelled with a few words to highlight the meanings. Altogether 247 labels emerged. The labels offered reduced expressions of the meanings, which supported the second phase, clustering. The data were clustered by grouping the labels according to content similarities into five main categories, which were then named corresponding to their content:

1. The lack of understanding of service design causes inefficiencies within projects and frustration among stakeholders.
2. Existing linear organizational processes challenge the use of in-house service design.
3. Tight schedules and small resources inhibit continuous development, scalability of the developed solutions, and service design know-how.
4. Value-based decision-making collides with fact-based and product-oriented decision-making cultures.
5. Organizational performance measures are not aligned with service design at the project level.

The formed categories thus represent the most important information of the study (Tuomi & Sarajärvi, 2013), meaning the five categories of challenges of in-house service design. Then, a more simplified Excel table was created since the categories were studied through the roles at five levels. The horizontal axis of the Excel table consisted of the five main categories. The vertical axis consisted of the interviewees' roles at five levels. Condensed descriptions of the meanings of each main category were formed at each interviewee level followed by quote examples. This method provided an easier comparison of the meanings within categories between the interviewees in different roles. Table 11.2 shows a simplified visual representation of the Excel table including quote examples of each main category at each organizational level.

Next, the synthesis of each five main categories is discussed below through the roles at five levels.

1. *The lack of understanding of service design causes inefficiencies within projects and frustration among stakeholders*

Executives The executive directors expressed that it is not clear to all stakeholders what service design means, and therefore, involvement in human- and customer-centric projects is a learning experience for many. They stated that it is not straightforward nor evident for people who are not used to dealing with service designers about what and how they are going to contribute. In addition, they argued that the role of service design has not been clearly defined in the organization, which might cause ambiguity related to it.

Heads of service business and R&D Heads of service business argued that there is no clear understanding of service design and how other stakeholders can support service designers' work. They expressed that the lack of understanding of service design causes challenges and inefficiencies in the level of project management since service design roles, deliverables, tasks, responsibilities, and milestones are not

Table 11.2 The five challenge categories of in-house service design including the stakeholders' quote examples

The roles at five levels	Category 1	Category 2	Category 3	Category 4	Category 5
Executives	<p>It's not always, straightforward and evident from the very beginning for people who are not used to, dealing with service designers (about) what, how they are going to contribute. (n30)</p>	<p>The more we see that as our offering is evolving towards (more) (-) service or a combination of products and services, we're going to probably need to reinvent ourselves in this innovation process (...). And today for us it's still to be done. (n30)</p>	<p>... all resources are today a bit (...) scarce, (...), compared to what we would need I would say, with all our needs. (n30) When enthusiasm is strong, launches happen early, but there is still a lot to develop to get things done to be able to scale the solutions successfully. (n27)</p>	<p>... we are challenged as a corporation (...), agility to use customer input and to iterate constantly. (...) It requires leadership and clarity about the direction where we want to go with it. (n30)</p>	<p>In product and IT development projects we have the general metrics, the KPIs that we use, and process measures as complete on time and cycle time. So, about service design, they (the measures) are not up-to-date with it yet. (n27)</p>
Heads of service business and R&D	<p>... these different sections are called swim lanes, but do you see service design here anywhere? No. (n40) ... you have to describe who owns the task and who contributes. (...) which milestone needs an additional bullet, what's the specific content (of service design). (n21)</p>	<p>... product development process descriptions, (...), they don't sufficiently take into account service design needs, (...) someone could do an additional project that complements the old deliverable document lists and milestones, and says what is the role of service design in all of them. (n21)</p>	<p>... the needs change over time. (n45) The challenge is how to manage further development of services. (n34)</p>	<p>The challenge is that (...) we have the burden of proof. (n21) ... as a development organization, we should be more agile, (...), we should create an operating model that works differently from the traditional waterfall models. It needs to be iterative. (n31)</p>	<p>The challenge is the length of the lead time. The benefits of service design projects come after many years. Incentive models could be built, but it is difficult, (...) so how to measure the success of service design and how to give bonuses become a challenge. (n34)</p>
Directors	<p>I think it still has a bit of a narrow role, so is the service design understanding at a good enough level? Maybe it comes back to how well we as an organization understand service design, what it means, and what are its possibilities (n20).</p>	<p>... there are many handovers and along the way, something gets lost (...) it probably starts from how we define the function and role of service design, tasks, and participation in our service development process or ways of working. (n20)</p>	<p>It (service design) requires an awful lot of money and resources, and I think we should have even more of them on our own payroll. We don't have a service designer for every project, or what happens that they are there, to begin with. (...) then they disappear. (n42)</p>	<p>It (service design) is difficult for middle management because the order of importance of things and the decision-making logic change. (n12)</p>	<p>The two most important things are monitored in projects, the budget and schedule. Once they are locked, they are strictly followed. (n42) Qualitative measures are difficult because they are considered as subjective. (n12)</p>

(continued)

Table 11.2 (continued)

The roles at five levels	Category 1	Category 2	Category 3	Category 4	Category 5
R&D managers	<i>The value is not in the end result, but in the fact that (all) those things have been thought through and understood that there are such and such things also here, that this (development of a service and service design) is not such a simple thing. (n41)</i>	<i>... it (the process) is product oriented. It is not (...) fitting to the (development of) services, even at a generic level. (...) we push too big entities forward in gate-like ways, which is a very straightforward way to do development. (n25)</i>	<i>... the problem is that (...) learning stops when something is pushed out (...) so how to enable (...) constant development, constant learning becomes the matter. (n25)</i>	<i>... we have measurement and fact-based decision-making, (...) but how can experimentation and other qualitative values support decision-making, and how does that lead to an efficient organization that makes good decisions by aligning decisions with the right values? That's the challenge in my opinion. (n25)</i>	<i>... service design aims are difficult to connect with business KPIs, but we must create our own KPIs for service design projects to give direction and focus. (n25)</i>
In-house service design specialists	<i>If this person totally understands what you are doing and understands your value, things go, but then, if this person doesn't, it's a pain, (...), you still need to kind of prove your value and that takes a lot of energy and a lot of time. (n46)</i>	<i>Agile development doesn't happen if we follow the existing product development process. (n26)</i>	<i>... seems like we put a lot of money, we develop, and then we just multiply, everywhere. (n47) ... we don't have enough people. If we would be like, (...) 20 people, I'm sure the impact would be much more. (n46)</i>	<i>Ability to listen is difficult because it is drowned under discussions and the culture of harmonisation. (n26)</i>	<i>... there is a problem with the bonus (system) and the mindsets won't change and they (other stakeholders) won't collaborate if you're kind of giving bonus the way it is now. (n47)</i>

marked in project management tools at a system level. They stated that this causes the dilemma where the heads of service business must go to service designers to ask and make sure that all the required and additional work relating to service design is done within projects.

Directors It became clear from the interview data that understanding service design and its methods among personnel at this level varies. Directors of service business presented that there is a lack of understanding of what must be done in terms of service design and how long things take. In addition, service design tasks, deliverables, responsibilities, and milestones are not part of project management systems either to guide stakeholders' work. An R&D director highlighted that the lack of transparent service design responsibilities might cause in-house service design to have a narrow role within the projects, and business directors get a false idea that makes it look like the projects are on target.

R&D managers Interviews with R&D managers brought forward that service design roles, responsibilities, tasks, and level of involvement in different project phases are not clear to all stakeholders. This is because deliverables, milestones, tasks, and dedicated persons responsible for service design are not fed into the project management tools to externally support in guiding work.

In-house service design specialists In-house service design specialists expressed in the workshop discussions that doing and delivering service design work may be hindered or even prevented in development projects where service design is not understood by project owners. As a result of this, in-house service designers experienced being left aside in such projects. They stated that this causes service design to have a narrow role, which leads to strong frustration among them. In-house service designers also brought forward that they experience having to fight for their position to prove the meaning and value of their work. This is very demanding since it takes a lot of energy, time, and effort.

2. Existing linear organizational processes challenge the use of in-house service design

Executives The executive directors argued that the existing linear development processes do not yet support service design and service development since they have been built from the perspectives of product development and IT. They expressed that now the organization is challenged to develop the existing linear innovation processes in a more agile direction.

Heads of service business and R&D Heads of service business presented that service design is not industrialized as a process within the organization, and the existing linear processes do not sufficiently consider the deliverables, milestones, and role of service design. Interviewees also brought forward that the existing linear processes are not flexible, iterative, and agile enough to allow the flexibility of service design usage in different phases of the project's lifecycle.

Directors Directors at this level expressed that service design's role is too short in the development projects, which creates a lot of knowledge gaps in terms of project handovers along the processes. They argued that a continuous presence of service design in all the process phases and along the projects' lifecycle is a challenge since the function and role of in-house service design within the organization are not clearly defined.

R&D managers R&D managers brought forward that the challenges appear when service design and iterative ways of working are tried to be squeezed and fit into the existing linear development processes. The managers stated that the organization is strongly product-oriented, and hence, it focuses a lot on operations, efficiency, and pushing solutions out in gate-like ways, which does not fit with the development of services, which is agile in nature.

In-house service design specialists In-house service designers expressed that the existing linear process models are product-oriented and they do not sufficiently support service design in terms of ideation and agile experimentation. In addition, they brought forward that they must leave projects once concepts are developed, which is the reason that they are no longer intensively involved when the developed solutions proceed into productization. They argued that this causes knowledge gaps along the process in terms of handovers and a lack of ownership of the responsibilities of the developed solutions.

3. Tight schedules and small resources inhibit continuous development, scalability of the developed solutions, and service design know-how

Executives The executive directors expressed that service design resources are scarce in comparison to what the organization would need since the organization has a strong enthusiasm for developing solutions, and therefore, the developed solutions are launched early. However, the projects have long-term development needs that must be taken care of. The executives concluded that the presented reasons create the challenge that there is still a lot to develop to get things to the finish line to be able to scale the developed solutions successfully.

Heads of service business and R&D Heads of service business brought forward the challenges related to timetables and costs. A danger is that the solutions are developed fast and pushed early into the market, which end up not being scalable. In addition, heads of service business argued that very often the actions of service designers may require additional money and time. R&D personnel at this level expressed that due to the high demand for service design combined with small resources, issues start emerging in the phase of productization since that is where the constraints and limitations of the organization appear, but in-house service designers might no longer be involved.

Directors Directors expressed that service design requires an awful lot of money and resources, and due to tight schedules, small resources, and many projects running at the same time, service design ends up having a narrow role. There is

no service designer for every project, or service designers are in projects, to begin with, then they must leave for new projects. The directors argued that a follow-up is missing of the developed solutions to provide the continuity of service design work. In addition, an R&D director stated that tight schedules combined with business priorities pull service design to happen in business centres, which leads service design to happen in a silo, and this does not support the scalability of service design on a wider scale.

R&D managers R&D managers argued that when the developed service concepts proceed into the productization, organizational constraints appear, but then service designers are already working on other projects due to a small number of them. This creates the challenge of how to enable constant learning and continuous development within the organization of the minimum viable services to achieve fully developed service concepts.

In-house service design specialists In-house service designers expressed that they must exit the projects before the developed concepts have been productized, and the new project personnel are lacking tacit knowledge in terms of the project background and in-depth customer understanding. Due to this, in addition to tight schedules and constraints of the organization, they argued that there is a danger that crucial features that create the core customer value will be wiped out. They also expressed that budgets are decided well ahead, which might not contain the costs of continuous development. Due to all these reasons, in-house service designers brought forward that minimum viable services enter the market early, which then lack ownership and control of continuous development to reach the fully designed service concepts. Instead, scaling up, standardizing, and multiplying the developed solutions are seen as easier and faster from the organization's perspective. In addition, in-house service designers expressed that the number of them is small in comparison to the rest of the organization, and service design's role has not been clearly defined within the organization. This is also the reason why the role of service design is limited to the development, and further, continuous development of the solutions in addition to scaling up service design know-how within the organization is challenging.

4. Value-based decision-making collides with fact-based and product-oriented decision-making cultures

Executives The executive directors argued that the organization is challenged in terms of the agility to use customer input and to iterate constantly in addition to the speed of development. They stated that in comparison to developing products, which are expected to be at the level of perfection before going to market, services might not be fully developed when they are released. This is a challenge in terms of continuous development and reliable solutions from the perspective of the frontline. The executive directors concluded that developing internal productivity and efficiency through service design is challenging since changing innovation

processes and operative models require leadership and clarity about the direction where the organization wants to go with service design.

Heads of service business and R&D Heads of service business expressed that the challenge of the organization is the burden of proof. R&D personnel brought forward that it is challenging to operate in iterative and agile ways since they are very different from the existing linear decision-making models of the organization.

Directors An R&D director argued that service design is a big change and challenge for middle management since priorities, the order of importance of things, and the decision-making logics change. Business directors expressed the fear of losing project ownership and direct control due to the use of service design, which led a business director to ask “do we act as a company for the common good, or do we try to optimize our responsibilities and goals” (n20)? According to the argument of an R&D director, this has led to contradictions between management and design, which challenges the continuation of the projects and the quality of the solutions.

R&D managers R&D managers brought forward the challenge of fact-based decision-making cultures of knowledge. When this is combined with fear of failure, learning and experimentation are corrupted, and hence, value-based decision-making is inhibited. This leads to the following question related to decision-making mechanisms, “how can experimentation and other qualitative values support decision-making, and how does that lead to an efficient organization that makes good decisions by aligning decisions with the right values” (n25)?

In-house service design specialists In-house service designers highlighted the challenge of the ability to listen, which is difficult due to scalability discussions. They argued that the organization is used to a culture of standardization and harmonization, and hence, the consistency roller works centrally from the headquarters. In addition, in-house service designers concluded that in such an organization, which comes financially along well, there is no sense of urgency to do things differently than what the organization is used to, which does not support enhancing value-based decision-making.

5. Organizational performance measures are not aligned with service design at the project level

Executives The executive directors stated a challenge in terms of the existing quantitative business measures, market research metrics, and performance measures. The measures are not aligned nor up-to-date with service design. In addition, they expressed that no qualitative measures are in place to support service design. They concluded that service design is challenging to distinguish and measure since there are always other stakeholders involved in the development, such as marketing, IT, sales, and so on. However, the executive directors argued that validating concepts with customers is the first way to measure the success of service design, which gives a signal if the customer expectations have been captured properly and translated correctly into the features of the offering.

Heads of service business and R&D Heads of service business argued that the challenge is the length of lead times since the benefits of service design projects come after many years. They presented that incentive models could be built, but it is difficult since many of the employees might change roles and/or organizations, and the organization itself change in a meantime. This is why measuring the success of service design and how to give bonuses become challenging. However, heads of service business expressed that the use of qualitative metrics has been discussed in terms of leading indicators and how to learn quickly from customers through iterations and new proposals, and if the methods that are used in service design provide high quality.

Directors Directors of service business stated that the budget and schedule are strictly followed in each project after they have been locked. Qualitative measures were expressed as difficult since they are interpreted as being subjective. In addition, directors at this level argued that KPIs and other quantitative measures are project-specific and they might seem abstract and as being far away for many employees besides the management.

R&D managers R&D managers expressed that having qualitative metrics to support human- and customer-centric development in an engineering-based organization is challenging since there is a burden of evidencing, measuring, and showing results quantitatively. The managers argued that what adds to the challenge is that there are two different things to measure: (1) how service design influences the solutions during the development (input), and (2) what comes out as a result of the customer interface (output). According to the managers, aligning business KPIs with service design qualitatively at the project level is in the hands of service designers only, but it must be done since they give direction and focus. However, they argued that in terms of service design, KPIs are more of a guiding element than a measuring element.

In-house service design specialists In-house service designers argued that challenges appear when the measurement and bonus systems are directed differently from what service designers are trying to achieve. First, they stated that it is challenging to measure service design quantitatively in terms of business metrics. Lead times are long, which means that the time frame for validating the output of the realized projects financially is challenging in comparison to the input of service design and development. Second, they brought forward that the existing bonus systems do not support the other departments to collaborate with service design in the early phases of service development. Due to this, project features and elements might go out of scope since stakeholders are not willing to invest time in things for which they do not receive bonuses.

Discussion

The results of this study show from the perspectives of organization stakeholders at five levels that when in-house service design is used in service development, challenges occur in the areas of (1) organizational understanding of service design, (2) development processes, (3) scheduling and resources management, (4) decision-making cultures, and (5) organizational performance measurement. In terms of transformation design, the results show, in line with Burns et al. (2006), that in-house service design is transformational due to its role in affecting organizations. However, unlike Burns et al. (2006), I argue that the difficulties and challenges that emerge are not only faced by designers, but also by other stakeholders and management since they hold the power to further develop organizational norms and practices to better support in-house service design and agile service development.

The results present that the level of understanding of in-house service design and its role, responsibilities, and deliverables within innovation and development is not yet sufficient among the stakeholders. These findings are in line with Bailey (2012), Kurtmollaiev et al. (2018), and Burns et al. (2006). They argue that focus should be put especially on training service design to management and experts to familiarize them with it since the success of embedding service design depends on the level of understanding of the value of service design principles. In addition, service design training would decrease frustration among service designers, who face constant challenges in communicating the meaning and value of it among internal stakeholders (Burns et al., 2006). This study also shows that centralized toolkits, rules, and guidelines of service design should exist in a self-study format to increase internal understanding of where and how to use service design, what professional in-house service designers do, and what belongs to the rest of the project personnel. In addition, the results reveal that the lack of organization-wide understanding of service design causes challenges and inefficiencies in the level of project management. Hence, in-house service design ends up having a narrow role within the projects. To make project management easier, service design roles, deliverables, tasks, and responsibilities should be marked in the project management tools at the system level. In addition, how and by whom to support in-house service design should be prominent as well. These would offer support for stakeholders whose understanding of service design is not sufficient.

In terms of the development processes, this study shows that challenges emerge when linear development process models, which do not support iterative service development, must be followed. Hence, the study proves the views of Cooper (2001) and Kurtmollaiev et al. (2018). The nature of iterative service design work, which is based on experimentation, learning, and continuous development, gets challenging when big entities are pushed through the gates of stage-gate processes (Cooper, 2001). This is not a fruitful ground for service design when the work is trying to be squeezed into the existing linear development models (Kurtmollaiev et al., 2018). Based on the results of this study, redefining the process models towards a more flexible direction depends on where the organization is willing to go with in-

house service design. Stakeholders bring forward the need of defining its role and function since it would support understanding its role in further phases of service development, such as productization. Now the role of in-house service design is experienced as too short since it is limited to the early stages of service development. However, the transformation towards flexible and agile innovation processes and operating models will take time. Due to this, heads of service business highlight the need to define the role of in-house service design in terms of the existing linear development processes.

Despite the lack of understanding of service design, the narrow role of it also happens due to tight schedules and small resources, and many projects running at the same time (Kurtmollaiev et al., 2018). Hence, issues arise from a lack of time, funding, and human capital (Kurtmollaiev et al., 2018). This study shows that the budgets are limited and the number of in-house service designers within the organization is too small. Hence, they are required to be in new development projects before the developed concepts have been productized. Therefore, handovers must happen, which leads to knowledge gaps and a lack of ownership and control of continuous development. The results of this study also suggest that tight schedules combined with business priorities pull service design to happen in business centres. This leads service design to happen in a silo, which does not support the scalability of service design on a wider scale within the organization. Also, for this reason, non-designers at all levels should be induced into design practices (Burns et al., 2006) and more widely trained (Bailey, 2012). In addition, the results of this study present a wider need for in-house service designers. Business stakeholders wish for regular in-house service design interventions since managing and maintaining the continuous development of the developed services is a matter. Hence, business-minded service designers would be needed in every team since stakeholders would involve them throughout the entire lifecycle of projects and also during the delivery of services. This would require the organization to further define the role of in-house service design.

According to the executive directors and middle management, in-house service design challenges the fact-based decision-making logic and cultures in terms of value-based decision-making. The organization is thus challenged to use customer input and to iterate constantly. The results of this study show that as a consequence of this, contradictions between management and design start to emerge since business priorities and aims do not necessarily match with the needs of the customers. Thus, giving control from management to designers and people working closer to the frontline might be challenging. According to Kurtmollaiev et al. (2018), this might be the case, especially in traditional non-design matrix organizations, which lean heavily on the cultures of knowing by imagining customer emotions and guessing their needs while fearing failure. This study suggests that giving control from management to designers and iterative ways of working requires trust, which in-house service design specialists yearn for to enable frictionless work. However, defining clarity about the direction of where the organization is willing to go with service design is required first. This would also enable further inspection

of innovation processes and operative management models through in-house service design and value-based decision-making.

In terms of organizational performance measures, this study suggests, in line with Shah et al. (2006), that quantitative and financial metrics should be aligned with qualitative project metrics to support achieving service design goals. These findings support also the views of Kurtmollaiev et al. (2018) and Bailey (2012). The creation and use of service design-based corporate language and common vocabulary should be encouraged by middle management by realigning KPIs with service design principles and objectives, and by providing room for experimentation (Kurtmollaiev et al., 2018). However, this study shows that it is not straightforward to do when service design is still such a new thing within the organization. According to top management, it is hard to measure the success of service design quantitatively since it is hard to distinguish and lead times are long. In addition, translating quantitative business performance goals into qualitative aims of the projects is left in the hands of in-house service designers. The results of this study suggest that project owners and directors should take a stronger role in the creation of project-specific qualitative metrics by helping to translate KPIs to match the qualitative aims of service design. In this way, KPIs would not seem as being too far away or abstract for project personnel.

In addition, the results of the study are in line with Golsby-Smith (2007). He argues that the existing bonus systems reward operational efficiency by considering the delivery end. From the perspectives of in-house service designers in this study, rewarding operational efficiency by considering only the delivery end does not support stakeholders collaborating with service design, nor contribute to the early phases of service development at the discovery end. Hence, this study's findings also support the views of Kurtmollaiev et al. (2018) and Bailey (2012). The existing practices and meeting personal KPIs in sustaining the status quo and local goals inhibit the use and implementation of service design on a wider scale (Kurtmollaiev et al., 2018). To enhance the application of design principles, also rewarding methods must be in place (Bailey, 2012) such as performance-appraisal systems.

Overall, this study shows that in-house service design has a transformational force due to its role in affecting organizations while developing services. That is why organizations must understand the key issues that appear when starting to apply in-house service design as a human- and customer-centric practice. The novelty of this study has been in defining the organizational challenges that occur when in-house service design is brought to be a part of service development. These were inspected from the perspectives of stakeholders at five levels. The researched knowledge provided by this research offers knowledge on what areas to develop to get a culture shift to happen systematically when the organization is heading towards human- and customer-centric development cultures with help of in-house service design. This study argues that the challenges in the five areas are not faced only by the design practitioners, but also by the stakeholders at all levels within organizations. Since service design is becoming an organic part of service development, it should gradually be developed into a really strong part of what the organization does. That is why it is crucial to understand the challenges that

emerge from the use of in-house service design and to define its role within the organizations since it determines the rest: (1) the level of training to provide a deeper organizational understanding of service design, (2) definition of continuous iterative and agile development processes, (3) scheduling and resources management, (4) enabling value-based decision-making cultures, and (5) qualitative organizational performance measurement supported by bonus systems in the early phases of service development.

Limitations

The age of the informants was not gathered. This is because the interviewees' age was not seen as relevant information since service design as a methodology was new or fairly new for everyone besides service designers. However, this might affect the interpretation of the results. In addition, as the publication is written solely by the author, no research triangulation for the case study and analysis appears, which might affect the credibility and validity of the research findings. Also, as the author has been a part of the in-house service design team in question, a larger risk of research bias may appear. Despite the limitations, the data analysis performed and the results presented by the author are seen as a representative overview of the topics discussed.

Future Research

This research shows the challenges of in-house service design in the organizational transformation from the perspective of the manufacturing industry. A more in-depth understanding of service design's role and organizational challenges would be needed from different contexts where emerging technologies play strong roles in product development. Such areas are, for example, automotive, shipping, cargo, and aviation industries. Providing knowledge of the organizational challenges would offer a more in-depth understanding of what areas to improve to enhance internal efficiency to support iterative, and human- and customer-centric development cultures. Such knowledge is crucial since providing an avenue to understand customers helps organizations learn the market needs. Hence, the iterative and agile human- and customer-centric ways of working offer the possibility to do decisions closer to customers, and thus, target decisions accordingly. In addition, research in different contexts could also reveal how service design as a profession should develop to better answer different organizational needs.

Conclusion

To answer the research question of this chapter, what are the challenges from the perspectives of different organizational stakeholders, which occur when in-house service design is used in service development, organizational challenges occur in the areas of (1) organizational understanding of service design, (2) development processes, (3) scheduling and resources management, (4) decision-making cultures, and (5) organizational performance measurement. Organizations applying in-house service design must first and foremost define its role and clarify the direction where the organization aims to go with it. Special focus must be put on internal training, continuous iterative and agile development processes, scheduling and resources management, value-based decision-making cultures, and qualitative performance measures, to support more efficient use of in-house service design. Hence, in-house service design requires strong leadership and building teams and expertise that integrate it systematically with the rest of the organization.

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