# Service Design Challenge: Transitioning From Concept to Implementation

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## Abstract

This paper presents the results from a qualitative study that examined how the transitions from service concepts through specification to implementation occur. Twelve people working in service organisations and service design agencies in Norway, were interviewed about their experience and opinions. The interviews were transcribed and analysed using NVivo10, and thematic analysis was applied to confirm the results from NVivo10. We found that there was a big communication gap between service concepts and implementation especially inside the service organisations. To bridge this gap, we propose two solutions: strengthening service design thinking inside the service organisations and having better methods and tools that support rigorous service specification. The results of the study can be useful to service organisations who wish to have deeper insight into the transition process, in addition to service designers and researchers to have a better understanding of the service design and development challenges inside service organisations.

KEYWORDS: service design methods and tools, service development process, communication in service design

## Introduction

Service design is an iterative process (Menor et al., 2002; Saco and Goncalves, 2008; Dubberly and Evenson, 2010) and includes four phases: exploration, creation, reflection and implementation (Stickdorn and Schneider, 2010). Making decision, creating image, specifying service, and implementing service might be the main events in the four phases in service design and development. The result of the exploration phase can be *a decision that is made* on the need of a new service development or a change of an existing service. This means, in this phase there will be activities to identify a need for service development or change and to define what is going to be developed in the service organisation. The outcome of the creation phase can be *images that are created* for the future service. After a decision has been made, we often see there is a process to create images in order to articulate the goals and

objectives for the development. The result of the reflection phase can be *a specification of a new or changed service* that describes how the implementation of the new service or suggested change shall be done. The outcome of the implementation phase can be an actual *service that is implemented* by following the specification that has been made in the reflection phase.

Service concept is a detailed description of what is to be done for the customer and how this is to be achieved (Edvardsson and Olsson, 1996; Goldstein et al., 2002). Previous service design researches seem more focused on 'service design leadership' (Gloppen, 2009) for idea generation and service concept development, than 'service design management' (Gloppen, 2009) for specification and implementation. In other words, service design researchers have focused more on how services are designed (Kimbell, 2011), than how services are specified and implemented. Little attention has been paid to how service concepts are actually specified and implemented in different service organisations. Our research question is "How do the transitions from service concepts through specification to implementation occur in service development projects?"

The rest of this paper is organised as follows: We first describe our research approach, research context, and methods used to collect and analyse data. We then present the results from our analysis. Finally, we discuss the results with a focus on key players and challenges in service design and development, and propose possible solutions to address these challenges.

## Research approach

To answer the research question, we used a qualitative research approach. We conducted a multiple case study with people working in service development in Norway.

The aim of our research is to get an insight of how the transitions from service concepts to implementation occur in practice. Therefore, a case study fits well for our research. A case study is "scholarly inquiry that investigates a contemporary phenomenon within its real-life context." (Yin, 1994, P33).

We aim to investigate the transitions in different organisations. Thus, a multiple case study was chosen as our research approach. A multiple case study allows us to explore several cases and understand the similarities and differences between the cases (Baxter and Jack, 2008).

To gain a deeper insight and better understanding of the transitions, we wanted to follow the interviewees' answers. Hence, semi-structured interviews were selected and conducted from October-December 2013. A semi-structured interview is more suitable when the interviewer wants a room to ask for clarification, add questions, or follow interviewee comments (Lazar et al., 2010).

A total of ten interviews were conducted (see Table 1). The sample was selected to cover as many cases of service development projects as possible with different types and sizes of organisations as well as different roles of the informants within their organisations. We interviewed people who worked in four service organisations and three service design agencies in Norway. The four service organisations include one public organisation and three private companies, and they all provide e-services. The public organisation with 900 employees provides tax administration service. While the first private company with 190 employees produces eHealth solutions like electronic health record (EHR) system. The

second private company with 900 employees produces electricity service. The third private company with 350 employees provides an online e-commerce marketplace. The three service design agencies include a public educational institution with 120 employees, a private design agency with 45 employees and a private service design agency with 8 employees.

| **Interview participant identifier** | **Organisation type** | **Number of employees** | **Roles of the interviewees** | **Number of service development a year** | **Providing service type** |
|---|---|---|---|---|---|
| P1 | Public organisation | 900 | Business developer/ Senior advisor | 150 (the whole organisation) | Tax administration service |
| P2 | Private company | 190 | Product owner | 2-3 | E-health services |
| P3 | Private company | 900 | Business developer | 3 | Electricity service |
| P4 | Private company | 350 | Product chief | 2 | eMarket service |
| P5 | Public educational institution | 120 | Professor and responsible for service design | 4 | |
| P6 | Private design agency | 45 | Service designer | 1 per 0.5 year | |
| P7 | | | Service designer | N/A | |
| P8 | | | Studio manager | 1-2 | |
| P9 | | | Project manager | 2-3 | |
| P10 | Private service design agency | 8 | Service designer/ Managing director | 20-30 (the whole company) | |

**Table 1 Background information of the informants**

All the interviewees were engaged in service development projects when the interviews were conducted. Three informants said that they were working with service development all the time.

Eight interviews involved one interviewee per interview, while two interviews involved two interviewees. Here, we treat those two interviewees who attended the same interview as one informant, since they agreed with each other during the interview. A paper version of the consent form was delivered to the interviewees before the interview began. Each interview was recorded and the average interview time was ca. 45 minutes.

The interviews were transcribed verbatim. We then used NVivo10 to code and analyse the transcripts. Thematic coding (Madden, 2010) was used to fine-tune the analysis.

## Results

In this section, we present the results from our analysis. We found five themes as follows.

- Stakeholders: Who are involved in service development projects, and what they do?
- Process: How the service development processes look like?
- Methods and tools: What kinds of methods or tools are used in service development projects?
- Tests and evaluations: How the results from each phase are tested or evaluated?
- Communication: How people communicate each other in service development projects?

We show our findings for each theme and explain them according to the aforementioned four main events in service design and development (making decision, creating image, specifying service, and implementing service).

### Stakeholders: Who are involved in service development projects, and what they do?

**Making decision**: We found collective service development teams inside the service organisations (e.g., a team with a managing director, product leader, business developer, marketing department, and customer department). The team usually made decisions on the needs of a new or improved service. Sometimes in-house or external designers participated in the activities (P1 and P2). However, all the informants from the service organisations reported that they did not have an in-house 'service designer'. The involved in-house designers were graphic, interaction and/or user experience (UX) designers (P1 and P4).

**Creating image**: The collective team and designer are the typical participants in the activities of creating images for future services. The service organisations believed that a project leader or business developer is responsible for creating images, while the design agencies considered that a service designer is responsible for that. Two reasons for involving external service designers were found. One was the lack of resources or competences in the service organisations, especially in large organisations (P1 and P3), while the other was to get inspiration, because people outside organisations see things differently and bring in new ideas (P1 and P5).

**Specifying service**: Designers were conditionally involved in the activities of specifying services. However, the involved in-house or external designers were graphic, interaction and/or UX designers.

**Implementing service**: A project team, typically consisting of a product leader, product development department and customer department in the service organisation, mostly led to the service implementation. Sometimes external consultants, often from IT companies, were involved in case the organisation lacked resources for technical support (P1 and P10).

P5 argued, "A *service designer* has a role of facilitating the process. They are good at customer empathy, visualising, creating a shared understanding, understanding of service thinking, and creativity in looking at problems in different ways." The competences of the service designers certainly contributed to service development (P1, P6, and P7). P2 and P4 argued

that the external service designers contributed to taking new perspectives on things that are difficult to see beyond the limitations in the organisations. P2 said the external service designers contributed to gathering people inside the organisation. P4 stated that if the organisation would have internal service designers, they would contribute to seeing things in more creative ways.

The *service workers* were involved in the activities of creating image, specifying service, and implementing service. In the activities of creating image and specifying service, the service workers were involved mainly through workshops, interviews, observations or usability tests in order to approve goals, check feasibility, and give their input, feedbacks or wishes. P1 said that the service operating personnel were always involved in the activities of specifying services and asserted that the reason of involving service workers in specifying services was to obtain their perspective or feedback and ensure the implementation. The service workers were sometimes involved in the activities of implementing services via pilots before the services are launched (P3 and P10).

The *end users* were indirectly involved in the activities of making decision in the form of the results from user interviews or observations. They were normally involved in the activities of creating image, specifying services, and implementing services. To create images, the end users were involved in verifying ideas, testing hypotheses, concepts or paper prototypes, and providing feedbacks through user tests, interviews and/or workshops. For specifying services, the end users were involved through focus groups, lap experiments, rapid prototyping, and usability tests to find the missing parts or points for improvement. For implementing services, the end users were sometimes involved via pilots before the services are launched (P3 and P10).

Table 2 shows a summary of our findings regarding the stakeholders and their involvement in the service development. We found that the service designers were involved only in the beginning of the service development (making decision and creating image).

| Events / Involvement | Decision making | Image creating | Specifying service | Implementing service |
|---|---|---|---|---|
| Service development team | O | O | O | O |
| Service designer | O | O | | |
| End user | | O | O | O |
| Service worker | | O | O | O |

**Table 2 Stakeholders and their involvement areas in service development**

## Process: How the service development processes look like?

**Making decision**: The ideas on a new or improved service were collected both inside and outside the service organisations through workshops, market researches or usability tests. The decisions on the needs of service development were anchored in the product team review meetings and executive team meetings in the organisations.

**Creating image**: The processes of creating images for future services were either specific and well-defined (P1, P3, and P8) or not well-defined (P2, P4, and P5). The informants

reported that the created images were often presented using drawings/sketches/models with text in Microsoft PowerPoint files in meetings to show the series of user experiences they would like the end users to have.

**Specifying service**: The transition processes from service concepts to implementation in the service organisations were quite different. Most of the organisations (P1, P2, and P3) generated and verified the ideas based on the needs and then tested the ideas before they developed the services. P4 suggested more detailed steps such as, idea generation, concept development, insight work with other teams and/or external consultants, KPI (key performance indicator) setting, specification, development, test, release, KPI measurement, and adjustment or points to improve checking.

**Implementing service**: Most informants agreed that a decision on the implementation start is often made formally. However, some (P4, P6, and P7) answered that sometimes the decisions were made in an emergent manner, depending on the size and decision-makers of the projects. P6 detailed that the public organisations' decisions are always formally made. Some informants (P1, P5, and P6) answered that the decision on the implementation start was made together with the early decision on service development in most of the cases. Nonetheless, some other informants (P3, P4, and P8) responded that the decisions evolve along the way and come after they map the current situations and needs and find the solutions. Other informants (P2, P3, and P10) claimed that the projects that are dependent on external factors have specific deadlines, but in the other cases, the implementation start is discussed later.

Some service organisations (P1 and P2) had processes in place to follow up changes that occurred after the implementation. For example, the service change goes through a test called quality assurance and then the change is described in documents as a new version before the change is applied. A product chief or project leader followed up with the changes and found out ways to measure the effects of the changes (P3 and P8). Sometimes, the organisations (P4 and P9) followed up the effects of the changes by monitoring a KPI set they had. Some design agencies (P6, P7, and P10) highlighted that for the possibility of adjustment, they tried to set some time to follow up the services after implementation.

## Methods and tools: What kinds of methods or tools are used in service development projects?

**Making decision**: Visualisation (drawing and mapping) tools (e.g., Microsoft PowerPoint or customer/user journey maps) and documentation tools (e.g., Microsoft Word) were used to facilitate decision-making on the need of service development or change. Many informants claimed that some or all of the processes, methods, tools and skills in the decision-making could be improved. P6 detailed that new tools might be needed to constantly evaluate which tool would fit best in the situation.

**Creating image**: Process modelling methods (e.g., storyboards, flowchart, customer/user journey maps, and service blueprints), text-based requirement specification methods (e.g., scenario), and sketch were used to create images for future services. Process modelling was used to describe the holistic description and structured order while, requirement specification was used for explanation of the detailed solution. Sketch was used to illustrate a more abstract idea or the whole scope. Business model canvas, Visio shapes, and Balsamiq mock-up were mentioned as some tools to support image creation.

Many informants answered that more methods, tools, and expertise were needed when creating images. P7 detailed, "We should have broader methods of how to relate goals and goal settings into service design. To be good at setting goals for the future service is very important in the stage."

**Specifying service**: The service organisations had specific requirements on how the implementation of a new or changed service should be documented. Mandate and SharePoint template were mentioned. Some informants argued that there was a need for methods to document a service better.

Majority of the informants answered that there was a need for clear specification of the service changes in terms of better explanation or way to update service workers or personnel. P5 suggested that there was a need for more formal hand over of knowledge. The informant appealed, "It is quite common that you deliver a description of the concept and then someone who has not been a part of the process will take it and their understanding is a bit different. At the end you find that the service is developed quite differently than how you imagine it."

Many informants responded that better processes, methods, tools, and competences were needed when specifying services. We found that there was a need to have a common framework, methods and tools for better documentation for developers.

**Implementing service**: The informants received the information about service development/improvement mainly from their project leader through meetings. The information was then shared inside the organisation. Many informants answered that visualisation was mostly used to draw the sketches and routines about the service development/improvement. Otherwise specific project templates such as, Microsoft PowerPoint, Yammer or Jira was used.

### Tests and evaluations: How the results from each phase are tested or evaluated?

**Making decision**: Majority of informants asserted that the idea of a new or improved service was evaluated based on needs and feasibility. The *end users* were involved in testing or evaluating ideas. P1 and P3 said that they tried to involve the end users as early as possible. P2 added that they tried to include the end users and their perspectives to the greatest possible extent. The informants from the service organisations reported that they consulted with customer call centre, UX department or user consultants to get ideas on how to involve the end users in tests or evaluations. Various user testing or evaluating methods were found, including survey, questionnaire, interview, observation, workshop, work meeting, focus group, prototyping, and online user panel via social media. P5 added that self-ethnography (do and run the service yourself as if you are an end user) was also used.

The *service workers* were often involved in tests or evaluations of the ideas on new or improved services either prior to or during a project. Some informants (P2, P6, P7, and P9) underlined that involving service workers in tests and evaluations is important. The service workers were involved through listening in, meeting, workshop, etc. to figure out their current challenges or needs, and to identify things to be done for the service development or change. Service workers from different departments (e.g., customer call centre, operating department, marketing department, and legal department) were involved in tests and evaluations. P5 indicated that in some cases service workers are not usually involved, for example, an online solution.

**Creating image**: The created future images were tested or evaluated by the *customer organisations* or *end users*. Some of the informants (P2, P3, and P10) accentuated that the customer organisations and end users were often involved in user interview, user (usability) test, observation, workshop or meetings when showing the concepts, stories, scenarios, sketches, images or actual designs in order to give feedback.

**Specifying service:** The informants emphasised that the end users were usually or almost always involved in tests or evaluations of the services specifications. Two of them (P2 and P7) mentioned that when specifying services, they tried to involve the end users as early as possible.

**Implementing service**: The test or evaluation is usually done through user (usability) test with prototypes or demos. Some informants (P5 and P7) added that they use focus groups. P4 responded that small services are sometimes released first and the effects are measured later.

## Communication: How people communicate each other in service development projects?

According to the informants, the design agencies communicated mainly with the customer (service) organisations and end users. The service development teams in the organisations communicated with people in other departments (e.g., operation team, UX department, and customer call centre), the end users and the internal or external designers. Figure 1 shows the communication of stakeholders in service design and development with the communication directions. As mentioned earlier, service organisations communicate not only with end users and design agencies but also with people inside the organisation.

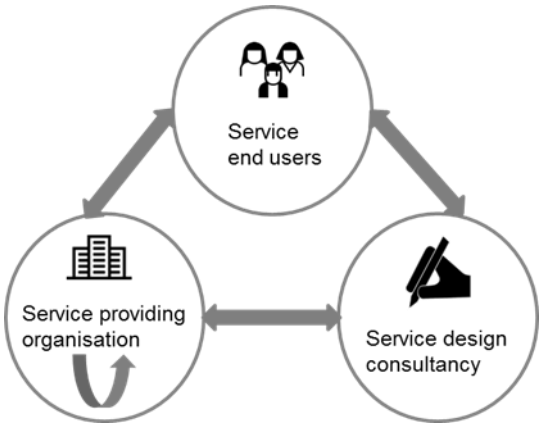


**Figure 1 Main communications and stakeholders in service design and development**

**Methods and tools**: The informants communicated with people using tools to have a common understanding of what was happening, to discuss how to resolve problems, and to receive feedback for the service development, mainly via meetings or workshops. Visualisation tools like drawing, sketch, model, and customer/user journey tools were popularly used during meetings or workshops. Emails were largely used when the organisation communicated with external consultants or organisations (P2). Blogs, social media (e.g. Twitter or Facebook), backlog systems (e.g. VTLC or SharePoint), and chatting programs (e.g. Skype or Lync) were also mentioned by some informants.

**Problems**: Many informants claimed that the biggest problem in communication during service development is *ensuring the communication and mutual understanding* in a multidisciplinary team. P1 said, "We have a communication needs. Understanding each other and following up are challenging because project leaders very often focus more on developing things than communicating about the development." P2 gave an example, "I said something and then the receiver has believed that he has understood it in his own way, but we have actually not understood each other at all." P3 admitted that some people did not understand some concepts. P5 explained, "People have different education background so they have different focus areas and different understanding of how things fit together." P5 claimed that a lot of things got lost between image creation and service implementation. P5 detailed, "Designers sometimes see the implemented service is terrible because it seems like they (the developers) didn't understand. Sometimes it's due to technical reasons but other times there is this gap where the huge amount of knowledge is lost." P6 claimed that illustrating thoughts in an understandable manner is challenging for service designers because they can think very visually while others cannot. Conversation from a distance is difficult because it is not good to show drawing things (P7). P8 stated that understanding accurately is often challenging. P10 stated, "Checking and agree on what they (service organisations) have actually understood what we (service designer) have said and what we have understood what they have said is challenging. And communicating what the customer organisation will get after the development is often difficult."

## Discussion and conclusion

In the discussion, we focus on key players and challenges in service design and development. We then propose two possible solutions to overcome the challenges and suggest directions for future research.

### Key players in service design and development

Service designers are involved in the activities of making decision and creating image for future services. None of the informants' service organisations had in-house service designers. Sometimes the organisations used personnel without design background or in-house designers with other types of design expertise (e.g. UX designer). This proves Tether's (2008) argument that non-designers in service organisations conduct much of service design and development. The organisations needed external service designers' support mostly to create images for future services. As claimed by other researchers (Goldstein et al., 2002; Blomkvist, 2010), it seems that external service designers focus on designing service concepts and are not involved when implementing services. The expertise of the service designers contributed to service development by taking new perspectives as interpreters of users' experiences (Wetter-Edman, 2014) or by gathering people inside (Penin and Tonkinwise, 2009).

End users and service workers were involved in the activities of creating images for future services, specifying services, and implementing services. End users were mostly involved in testing or evaluating ideas on new or improved services, created images for future services, and prototypes and/or pilot services. Service workers were normally involved in goal approvals and feasibility checking.

## Challenges in service design and development

The informants claimed that processes, methods, tools, skills, expertise, and competences in decision-making, image-creation and specification for new or improved services should be improved. Services design is "supporting integration between business development, design and technology development (Holmlid, 2009)", thus, involves several people with different background. They communicate all the way from decision-making to implementation. We found that there is a big communication gap between service concepts and implementation especially inside the service organisations. The organisations often face problems in communicating, understanding and updating people inside. They claimed that they need better ways to document service concepts and specification, especially for the service (often IT) developers. The design agencies complained that sometimes the implemented services were different from the future services images they created with the service organisations. Many things get lost when specifying and implementing services after the services concepts and images are handed over.

## Bridging the communication gap

Figure 2 shows that designers and developers have different ways of thinking. Bridging this gap would be very important in service design and development. To bridge the communication gap, we propose two solutions.

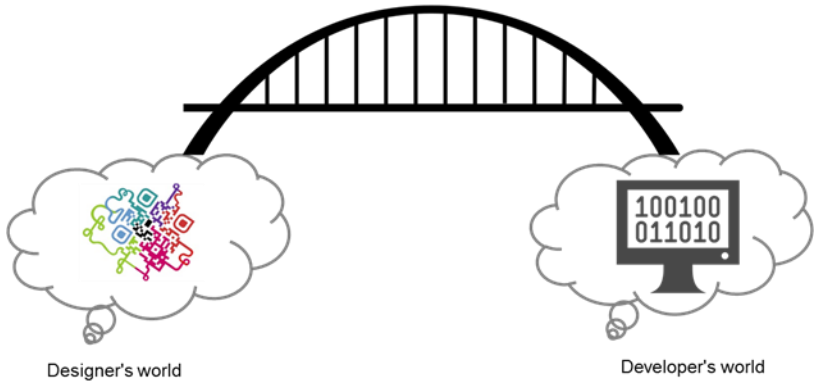


**Figure 2 Bridging the designer's world and developer's world**

The first solution is strengthening service design thinking inside the service organisations. Service organisations might enhance their service design expertise by educating their staff about service design thinking, involving external service designers further to specification and implementation or hiring in-house service designers who can influence the specification and implementation more directly. Junginger (2014) argued that when both the organisation and designer are prepared to perceive and handle existing organisational design legacies, doing service design would be more successful. Enhancing service design expertise inside organisations and involving service designers as communicators with stakeholders (Segelström, 2013) further to specification and implementation, might contribute to bridging the gap between the designer's world and the developer's world. People with better understanding of service design in the organisation may help to solve the misunderstanding between service designers and developers by having a role as a middleman. If service designers are involved further to specification and implementation, they would have better

chances to have direct communications with developers. More direct communications between service designers and developers might reduce the misunderstanding between them.

The second solution is having good methods and tools that support rigorous specification of services. Involving service workers in service design and development processes is important not only because service workers influence customer satisfaction but also for the service quality that is perceived (Bitner et al., 1990; Ruyter and Wetzels, 2000). However, the operational and technical feasibility of the service should also be checked by the service operating team before the service is implemented. Hansen and Jackson (2015) claimed that service concepts are not getting implemented because the presentation of services lacks viability and feasibility that are needed to be realisable. If a service is designed and specified but cannot be implemented due to the operational or technical limitation, it will result in loss of money and resources and require redoing the whole process from start. Having new service design methods and tools that support better description and documentation for specification of services will contribute towards bridging the gap between the designer's world and the developer's world. If operational and technical limitations can be discussed with help of methods and tools when creating images or specifying service, the risk of losing valuable time and resources and of redoing all the work will be reduced.

We expect that these solutions can be useful to service organisations to help them improve their service development processes and contribute towards producing better quality of services. Future research should look at the practices how services are actually specified and implemented inside service organisations after the future service image has been created. Observational studies would be suitable for this. In addition, action research studies that examine service designer's further involvement could contribute to understanding the impact. Furthermore, comparative studies that examine the capacity of expressiveness of different methods or tools for service specification could provide an exciting insight into what is missing when current available methods and tools are used.

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