Change through Service Design – Service Prototyping as a Tool for Learning and Transformation

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Abstract
This article aims to explain how transformational change can be achieved through service design process and methods, especially through service prototyping, and how the learning process enables change. Results are based on case study research conducted in a service prototyping laboratory, SINCO (Service Innovation Corner), during a MediPro (Practices, Processes and Products for Medicine and Healthcare) research project. This paper examines if SINCO service prototyping methods can influence transformational change in companies and organizations, what kinds of learning processes SINCO and service prototyping activate, and how the service design process is constructed when using the SINCO environment.

The aim of this paper is to present new information and insight regarding the benefits of service prototyping in development work between universities, companies and organizations. The key findings suggest that service prototyping can be an influential tool to transformational change as well as to encourage facilitation and team work. The co-design approach used in service design fosters a strong peer-to-peer learning process, and prototyping in the SINCO environment enables a technology-aided learning process and supports experiential learning. Research findings complement the theoretical background, which includes the key thematics of the service design process, learning process, transformational change in companies and service prototyping.

Keywords
service design; prototyping; learning; transformation; case study

The paper introduces SINCO prototyping and learning environment and then the theoretical background of this study related to the thematics of service design process, learning process, transformational change in companies and service prototyping. The paper continues with the research questions and methods used. The main focus of this paper is on service prototyping research done at the SINCO laboratory, and it discusses the lessons learned in case study research related to the service prototyping process. The paper introduces transformative methods such as SINCO, outlines the service designers’ role and needed skills to conduct service prototyping and explains how service design process can trigger change through action. The conclusion offers brief insights and a summary.
Service Prototyping at SINCO

The SINCO laboratory is a concrete example of how to conduct service design. SINCO consists of the prototyping and learning environment and a set of tools for co-design and service prototyping. In SINCO technological equipment and digital material, such as photos, videos, and sounds, are used to build a simulation of actual service moments for experiencing, testing and development. As a set-up for prototyping services, SINCO has two 117-inch background projection screens that are perpendicular to each other, providing background scenery and enabling partial, yet immersive, spatiality. These kinds of visual elements help to concretize different aspects of service concepts and ideas for different stakeholders by giving them a better idea of what the service experience might be like. In SINCO, it is possible to simulate all kinds of services, processes and practices. Prototypes are an effective way to cooperate, make processes and practices visible and learn new skills. In 2009, at the University of Lapland, a prototyping laboratory for service and interaction design was developed. The SINCO laboratory is an environment including a set of tools that are dedicated to service prototyping and interaction design (Rontti, Miettinen, Kuure, & Lindström, 2012). It is a mixture of a theatre, studio, play room, meeting room and mock-up workshop (Figure 1). Interactive whiteboards, computers, projectors, speakers, rear projection screens, multi-colour spotlights, and physical and virtual props support the creation of the service experience.

Fig 1. Active co-designing, learning and prototyping in the SINCO environment

SINCO is a space and a set of tools, but it is also a way of working. SINCO represents a holistic approach to service prototyping and an introduction to a new working culture for designing services that support various phases of the service design process (Miettinen, Rontti, Kuure, & Lindström, 2012). In the SINCO laboratory, prototypes are quick and easy to develop and modify. This is ideal for hands-on service development since new ideas can be generated and existing prototypes can be tested. The lab also supports the co-creational culture of service design, in which anyone can build on the ideas of others. One of the important focuses of the SINCO laboratory is to function as a learning environment, where students work alongside the project team, researchers and companies (Kuure & Miettinen, 2013). Knowledge transfer from the service design team (researchers and students) to knowledge recipients (partner companies) occurs in the context of co-creation. Students have hands-on involvement in the cases, learning to use different prototyping methods as well as technology that facilitates prototyping.
The SINCO process as a whole enables the communication, testing and further development of optional services before launching them. The aim of the SINCO environment is to support ideation and decision-making through experiential learning. Kolb (1984, p. 41) defines experiential learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience.” In Kolb’s experiential learning model, learning is seen as a set of circumferential cycles; the learning event is constantly evolving and deepening the process. This coincides with the iterative service design process.

**Theoretical Background**

As a discipline, service design is very practice-based. The service design process can trigger co-creation and also change. According to Holmlid and Evenson (2008), the process of service design differs from conventional approaches because instead of defining strategy at the beginning, service design starts with exploratory or immersive research to discover opportunities for innovation in strategy. In many of the process models, prototyping, building or testing are important phases where ideas become concrete and measurable (see e.g. Engine, 2009; Mager, 2009; Moritz, 2005; Van Oosterom, 2009).

The service design process uses generative, formative and predictive methods (Fulton Suri, 2008). It has the implicit idea of innovation and can use several methods for concretizing new offerings or innovations even in the same development process. Methods should be selected or applied according to each case or project. Nevertheless, the important factors that must be considered when developing and applying the service design process can be identified as follows: understanding the service design challenge—the users, business environment and applicable technologies; observing, profiling and creating empathy for and cooperating with the users; including the clients, other stakeholders and the users in the process; creating ideas; prototyping, evaluating, improving and visualizing during the whole process; implementing the services; and also maintaining and developing the services after implementation.

Different kind of learning processes can support change in co-design process as well as in services. Future-oriented solutions to learning and producing knowledge can be generated using the principles of service design. In today’s society, competencies and the conditions and sources of learning and knowing are in a state of constant change. The paradigm for learning and knowing is shifting from one that emphasizes cognition-forming and individual learning to one that accentuates the ideas of contextualism. This same idea of contextualism is well utilized in service design, where the core of service development lies in the contextual understanding. Different service design tools enable contextual learning. The emphasis of research is moving toward the study and development of processes that produce learning and competencies in and between the contexts of education and work (Poikela, 2010).

Service design can help in the recognition, understanding and development of the immaterial processes and resources related to learning and producing new knowledge. Service design can also be used effectively in organizational learning and development processes. Service design thinking is an on-going consideration of how our collective needs are met without overstretching the human and natural resources (Reason, Downs, & Lovlie, 2009). This approach is used in experience design, which is an approach to
creating emotional connection with guests or customers through careful planning of tangible and intangible service elements (Pullman & Gross, 2004).

In recent decades, participatory and collaborative design approaches have gained increasing support and interest in many areas and fields. Different methods of co-development can be used to convert tacit knowledge to explicit knowledge as well as foster creative learning (Nonaka & Takeuchi, 1995). The goal of participants in group work, for example, is to form a common information sharing and creation space where information is shared, and a new understanding of the participants is created based on their experiences and knowledge (Pöyry-Lassila & Teräväinen, 2010).

The aim of co-development is always the conscious construction of new knowledge. Transferring the existing knowledge to the participants or mere participation in the development activities is not enough. Collaborative knowledge construction aims at creating new knowledge and the development of common objects, such as services or concepts. This is trialogical learning, in which learning is viewed as knowledge creation. The goal is a collaborative and systematic effort to develop conceptual or concrete products, services or practices (Pöyry-Lassila & Teräväinen, 2010).

Participation in service design and the collaborative learning process can facilitate change in organizations. All stakeholders working together and the use of service design process and methods can trigger radical change as well as find ways to identify and deal with obstacles blocking the vision, thus limiting the prospect of realizing a transformation. The concept of the action learning organization is presented as a bridge between learning and transformation, as it involves collaborative questioning by organizational members of their own actions (Limerick, Passfield, & Cunnington, 1994).

Designers can facilitate change and help all stakeholders to understand what the steps towards the desired outcome are. Sangiorgi (2012) proposes that design researchers can work at two parallel levels. At one level, they introduce Design for Services methods with a focus on improving service experiences and offerings that are designed around customer needs. On another level, they introduce a new way of thinking about value co-creation and innovation (Service Thinking) that could transform the way organizations perceive their role, offerings and innovation processes.

Service prototyping is a new competence area for designers. Prototyping activities locate them in the centre of a business development case where designers’ role is to work as a facilitator and use tools that connect the stakeholders views and visualize the service offerings. The short duration of a prototype cycle, between trying something out and testing it with users, is what makes the relationship between design and business successful (Moggridge, 2006). Prototypes can quickly and cost-effectively communicate a service proposition and prompt questions on the technical feasibility, consumer desirability and business viability (Samalionis, 2009). Prototypes are tools for thinking, and prototyping is a powerful means to facilitate organizational development and change (Brown & Katz, 2009; Coughlan, Fulton Suri, & Canales, 2007).

Blomkvist (2012) proposed four distinguishing features of prototyping approaches and presented them as levels on which prototyping can be conducted: 1) artifact, 2) use, 3) context and 4) service levels. This division of prototyping approaches is made to explain the constituents of service prototyping more explicit. Representations—such as service sketches, service walkthroughs, and live service prototypes—allow service developers to
approach and understand the experience of service propositions. These kinds of methods also allow designers and users to enact or perform service experiences before they have been established in an organization (Holmlid & Evenson, 2007).

Services are complex and are delivered by people, smart products and online services. Service design and prototyping are approaches and competences to manage the design process of service experiences. In the design process, a prototype integrates many types of information (Koskinen, Zimmerman, Binder, Redström, & Wensveen, 2011). The prototyping approach gives us tools to concretize service offerings that are delivered through different channels and smart devices. Further, prototyping gives us the means to examine how service experience becomes real through the customer journey and different service touchpoints, which means through interactions, processes and environments.

Research Questions and Methods

This paper examines if SINCO service prototyping methods can influence transformational change in companies and organizations, what kinds of learning processes SINCO and service prototyping activate, and how the service design process is constructed when using the SINCO environment. This paper presents a case study that focused on service prototyping process in the SINCO environment. The aim is to come up with new information and insight about the influences of the service prototyping approach. Furthermore, the findings will suggest ways to develop the method to support both transformational change in the companies and the learning process related to service prototyping.

The paper is based on a) interview data collected from Finnish SMEs (N=6), who have used the SINCO environment and whose service development case was a part of an industrial design course at the University of Lapland, and b) research data collected in the MediPro research project during social services safety development cases. In the MediPro project, the aim is to see how the service design approach and prototyping facilitate the development of a technology-aided service delivery process and how learning happens in those circumstances. Co-development was carried out with social service professionals because they have the most topical and practical knowledge of the services and process developed. The research data collected in MediPro includes self-documented data by professionals using the design probes method (N=20) as well as fieldwork diaries of designers (N=2) written after service prototyping sessions with two groups of social workers at the SINCO laboratory. The data was collected in 2012 and 2013.

Theory-driven content analysis was conducted through two analysing rounds in which researchers first picked out key terms and phenomena that responded to the research questions and the main concepts related to them. In the second round, the findings were discussed in research meetings. Research findings complement the theoretical background, which includes the key thematics of the service design process, learning process, transformational change in companies and service prototyping.

Findings from the MediPro Case Study

The main findings of this case study research describe the new roles and competencies of the designers, new methods used in the service design process and their influences in development processes in companies. The findings are related to three different titles:
transformative methods, designer as a facilitator of learning and change, and change through the service design process.

In SINCO, learning happens through three connected elements: the service design process, transformative methods and people (the participants and designer’s activities). All of these elements have an influence on learning and how successful it will be. Learning—which is creative, continuing, collaborative and technology-aided at SINCO—opens up the possibility for change. The notion of development and change for the better is at the core of design activities in SINCO. We argue that SINCO service prototyping, by connecting service design process, people and transformative methods through action, is a tool for learning and change or organizational transformation (Figure 2).

Fig 2. Service prototyping as a tool for learning and change

**Transformative Methods**

Visual elements and illustrations are one way to support change, share information and have a conversation. Showing something in a visual format helps different stakeholders to focus on a certain subject, whether it is a piece of a larger service moment or just a small detail. Furthermore, visual presentations allow different views and opinions to be discussed and understood. Visualizations and prototypes that you can experience create understanding, which is the starting point for learning. Through prototyping, the design group learns and understands which service moments are challenging for customers and why.

In SINCO, visualizations are strongly connected to everyday life, and the visual aspects can introduce new perspectives and opportunities. SINCO prototypes support change and learning through concretization. For one of the company representatives, after going through a prototype of a company’s standard service journey, the need for change was evident. Studying product or services in the laboratory means that something is taken from its natural environment and brought to a controlled space, where it can be subjected to experimentation (Koskinen et al., 2011). The situation is almost paradoxical, as the
prototype alienates people from their real-life situations and everyday activities. At the same time, it helps them to look at the service and actions closer, concentrate on details or see the opportunities and try them out quickly and inexpensively. Concretizing and other service design methods are tools for development but also for learning.

Service designers use the customer journey for working, ideation and communication. Through the customer journey, which can be experienced and lived through at SINCO, the need for change is often more evident. Throughout the use of service design methods, the ability to make decisions evolves. At SINCO, learning happens mainly through action and is very practice-based, as actual services and new ideas are always prototyped and co-designed. This generates a growing understanding of the problem or challenge at hand and the point of view of other stakeholders. Concrete doing has also a positive effect on the attitude towards change. Ideas are easier to accept or reject as you test them in practice, and opinions and decisions are based on reality, not just assumptions. Service prototyping can be a tool for change resistance. Through prototyping, it is possible to forget or change existing models and replace them with new models of operation.

At SINCO, customer journeys are built into experience prototypes. These prototypes can be used in different service design process phases. Prototypes can help participants to remember past experiences related to service, to relieve assumptions and to understand their own actions in certain moments. Dividing the whole customer journey into easy-to-understand service moments enhances learning. In practice, experience prototyping in SINCO is not as easy as it seems, and everyone needs to participate. At first, role playing, acting out and building mock-ups might seem silly or difficult. This is where the designer steps in. The designer has planned the workshop beforehand and has chosen methods that challenge participants but are not too difficult. For the designer, it is helpful to prepare for these kinds of challenging situations in prototyping and to be willing to be the first one to try out service prototypes.

In the service design process, many different kinds of methods are used. This multi-method process supports co-creation of knowledge from many sources and from new points of view. Ideas, actions and thoughts can be based on the knowledge and understanding collected. This supports culture change in the organization, leads to a deep understanding of the case in hand and helps the designer to choose the right methods for a particular case. New tools are needed as more and more complex challenges are solved by using design. For example, one of the new tools could be comparing the organization’s customer journeys and processes by prototyping.

It is clear that service design plays a strategic role in the co-creation. This is realised by using not only different service design methods but also a wider approach that integrates service thinking, understanding the user in context with service rationales, and constructing service propositions. At SINCO, the connection between individual learning and group learning is very dynamic as participants move between these entities during workshops and prototyping. Not only do the designers learn, but company representatives and users that participate gain new insights as well.

**The Designer as a Facilitator of Learning and Change**

The service design process enables concretizing and understanding the overview and the detail, which supports the collaborative development work and practical innovations. The designer’s role as a communicator and facilitator of a process is evident. One of the key
factors in supporting change in organizations is group work, which is usually conducted in workshops. The role of a designer is the facilitator. The point is not solely to create new and amazing ideas but also to help different stakeholders to come together, ideate collaboratively, concretize their ideas and also lead discussions. Knight (2012) proposes that the designer’s role is not just thinking or pure creativity but also communication. A designer’s role in shaping services is important, not just in helping to meet a need but also in communicating what it is or what it could be in a way that makes it more understandable to others.

The core of facilitation is to find the right way of working and communicating so that people can work together productively. The facilitator does not have to be a professional of the subject because facilitation is used when the group members already have the knowledge to solve the problem at hand (Kantojärvi, 2012). When co-design methods are used, the start of a workshop has to be inviting, informative and interesting. It is a facilitator’s responsibility to ensure that participants are on the same page and that they feel comfortable during the workshop.

In some cases negative feelings like preconception and suspicion are related to existing services or to development work in general. At SINCO, pictures, sounds, lighting and props create a space where it is possible to look at service moments as material or data without hurry or existing perceptions and ways of working. This is a powerful tool for group work since the use of prototypes makes it possible to understand the underlying processes, different stakeholder views and tasks related to different kinds of service moments. As a result, the group is seeking positive outcomes together, and defensive perspectives disappear or at least fade away.

There is a lot of preparation work involved in the facilitator’s role. Different factors, like if group members already know each other, have an influence on outcomes. Facilitator finds out what kind of group dynamics there are in the group, decides how group should approach the subject in hand and supports participants to try out ideas. Only when preparation work-like inviting the right people, organizing the space, planning the timetable and making preliminary visualizations of the service journey-is done properly can the group start to create content together. The facilitator also needs to adapt to different situations during the workshop, understand the context-sensitivity in conversations, and give space for thinking, understanding and learning. All this planning is very conscious work and aims towards facilitating learning and change.

Group formation and group activities are important in workshops. At the beginning, it is crucial to identify the key persons that have time to be active in the process, who have a positive attitude towards development and who could act as agents of change in organizations after the service design case. A challenge for the designer is to facilitate the implementation phase so that ideas become reality. The most challenging step can be the one from the laboratory to real-life. The service design process is frontloaded method-wise, and new tools and methods for implementation are needed. The SINCO method has potential to be one of the implementation methods in the future, as it can be used to spar key persons to see the future possibilities holistically, help them to decide where to start to make changes and use the finalized prototype as a communication and training tool towards relevant professionals.

The change process can also slow down or dry up completely if new people come along during the evaluation phases of the co-creation process without any specific task to
complete. Through active participation in workshops, team spirit is formed. In workshops, people grow to be experts of what could or could not work and why. The knowledge transfer of this kind of information needs to be carefully planned and tailored to match the needs of each receiving company. We have discovered that active participation in service prototyping and workshops builds the capability to tolerate changes. At SINCO, it is possible to experience what the future would be like if the organizations made some key changes.

**Change through the Service Design Process**

Stickdorn (2010) describes the service design process as an iterative process in which four steps-exploration, creation, reflection and implementation-are an attempt to structure such a complex design process. Hegeman (as cited in Stickdorn, 2010) states that designers need to be critical towards any theory or model of a design process. Despite this, different service design process models can help designers to understand the phases through which desired outcomes will be achieved.

In a prototype-heavy service design process, the first phases of cooperation are affiliated with organizing, contacting, scheduling and creating understanding. In this phase, practical arrangements are emphasized. After this, different kinds of meetings, workshops and presentations follow. Facilitators need to balance the work between details and a holistic view. Still, while working on the details of a touchpoint, the facilitator needs to keep in mind where that touchpoint sits within the whole customer journey. Furthermore, the facilitator needs to cope with dilemmas and help the group to make decisions about where to concentrate according to their budget, resources and the views of different stakeholders. Most of the interviewed people said that after they had gotten used to drama methods and working with the group, they became inspired, and it seemed like the workshop ended too quickly. When planning a workshop, it is important to take into account that participants need time to familiarize themselves with the methods used.

When planning processes, it is important to remember that the slowest and hardest part is usually the beginning. Understanding service design, its methods and throwing oneself into a project are phases for which beginners in service design need time and maybe even help. If this is not done properly, and if group members do not know their roles or aims of cooperation, it is easy to question the service design methods and changes proposed. Participation of group members in workshops where knowledge and ideas are created is crucial. It is almost impossible to tell someone in words all that happened in a service prototyping session at SINCO.

Prototyping emphasizes stakeholder experiences and allows different points of view to be discussed. In active workshops, it is easier to concentrate on possible solutions rather than on conflicts. The SINCO laboratory enables quick prototyping in which ideation is fast and moving between service moments and service locations is easy. SINCO is an immersive environment where it is possible to concentrate on a specific challenge or opportunity and turn off other distractions.

Changing an organization’s operating culture usually needs lasting cooperation with designers. Implementation of the changes planned together should be followed and supported. Changing an existing operating culture of a service with service design is not only related to big changes, like changing from a product-oriented company to a service-oriented company, but usually it is small details that improve the customer’s experience.
At SINCO, students do a final presentation, a report of the case and a finalized prototype with before and after photos as well as suggestions for what to do next in the company. In our opinion, the implementation phase tools and ways of delivering and tracking results needs development. In the future, we need to find ways to ensure that a company or organization is able to perform tasks needed to realize the designed changes.

Usually, the success of a service design process is determined through overall results, but process phase related checking of results is often missing. This kind of working culture could be supported through facilitation. The designer’s facilitation skills are needed in debriefing sessions in which the designer listens analytically to the discussions related to the case. In these situations, learning occurs, and the designer can link the discussions with solutions. In addition, neutral outsider views and outsourcing of the design challenge are seen as important elements in the service design process by company representatives. A fresh pair of eyes and a neutral opinion is needed in the design for change.

Expectations for a service design project are consistency, determination and a specific change for the better. When we are talking about service design processes, we will inevitably face a variety of different phases with different kinds of methods and aims. Collaboration and participation are built into the process, and in our opinion, designers should do this more consciously. During the process, the designer has to check the direction to ensure that planned changes are making the service better for the providers and customers.

One of the key factors in the service design process, and a tool for learning, is discussion. It is important that someone facilitates conversations that are taking place during the service design process, and in our case, that person has been a designer. Good facilitating will lead to good conversation. Communication and interactions are a central part of co-design and of every service. In the case studies, conversations happened in many levels: designers and students in the faculty; designers and researchers at the university; designers, researchers and key persons from a company or organization; and everyone that participated in the co-design process. Learning occurred and got deeper in all these different levels of conversation.

Service design is still an unknown concept for many companies. Our results show that for company representatives, it is easier to understand what service design is through case examples, which work as a basis for discussion. Through case examples, company representatives learn how challenges could be resolved or opportunities could be made into reality through the service design process. They also understand that no one has to be an expert in everything because during the service design process practical knowledge will be created together. Some of the communication challenges in cases might happen because as for now designers have been planning workshops from the service design process point of view, but also cooperation and discussion aspects should be taken into account when planning workshops.

**Conclusions**

Service design is connected and based on everyday activities and understanding. This is why it is easier to involve people from multiple backgrounds and with different hopes, needs and wants in the service design process. Through the co-design approach, the group of participant tries to affect services that people use and change those for the better.
Service design enables a continuing learning process through its iterative working approach in which service solutions are developed through testing and evaluation. Furthermore, the co-design approach used in service design fosters a strong peer-to-peer learning process. Prototyping in the SINCO environment enable a technology-aided learning process.

New roles of designers are emerging. The results described here make it clear that using prototyping effectively when designing services requires new skills and the understanding of several technologies. Such projects also call for designers who know how to apply theatrical methods. Designers play a central role as facilitators during prototyping sessions—leading the prototyping, bringing the ideas of participants to life, and stimulating discussion and ideation by asking questions and altering the prototype. As a set of tools and a way of working SINCO enables a continuing case related learning process for designers.

Design is becoming a more important part of strategic and multidisciplinary innovation. This implies a broader role for designers who are able to build bridges between different disciplines and transform knowledge into solutions. Design also has a role in solving the wicked problems of human society, and designed services need innovative solutions to address social challenges. Designers analyze information by using designerly ways of knowing (Cross, 2007).

Service design is a new competence area that helps in managing and developing multi-channel service experiences. The notion and contents of experience design are present in a service design process. The users and stakeholders participate in the service prototyping activity where service propositions are experienced, evaluated and developed further. The service design and service prototyping competencies are manifested through a multi-disciplinary and facilitated working approach that can be applied in various fields. New competencies of a designer include a vast knowledge in different areas of design, including strategic design, experience design, industrial design and interaction design. Yet, the most important ability of a designer is empathy connected with an innovative and solution-oriented approach.

References


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