

# Co-Prototyping Emotional Value

Satu MIETTINEN, Simo RONTTI and Jaana JEMINEN  
University of Lapland

*Service design methods provide tools for both the analysis-based perspective to understand user motivations, emotions, the participatory development and co-design process. This research specifically focuses on audio-visual concretization with agile methods and technological tools to simulate the service journeys and solutions. This article examines the question: 'How can profitable solutions and value be created from intangible experiences and customers' emotion in the use of service design methods?' The findings of this study suggest that service simulation and prototyping help in decision making of new service development. Simulations and prototypes serve as personalized emotional samples, which reveal customers' emotional reactions and enable an early engagement of the process for decision makers through their own experiences. New systems for value co-creation place designers in more strategic positions.*

**Keywords:** *service design, emotions, co-creation, prototyping, simulation, decision-making process*

## 1. Introduction

The labor-intensive service sector is the largest part of the Finnish national economy, but investments in intangible capital continue to produce less profit than tangible investments (Mahmood, 2011). In developing service quality, the customer focus and meanings created during the service experience are key development elements (Rintamäki, Kuusela & Mitronen 2007). Service design methods provide tools for both the analysis-based perspective to understand user motivations and emotions and the participatory development and co-design process. This research specifically focuses on audio-visual concretization using agile methods and technological tools to simulate the service situation and solutions. This study utilizes the SINCO

Copyright © 2014. Copyright in each paper on this conference proceedings is the property of the author(s). Permission is granted to reproduce copies of these works for purposes relevant to the above conference, provided that the author(s), source and copyright notice are included on each copy. For other uses, including extended quotation, please contact the author(s).

laboratory methodology developed at the University of Lapland (a technology-enhanced service prototyping and simulation environment) to answer the research question: 'How can profitable solutions and value be created from intangible experiences and customers' emotion in the use of service design methods?'



*Figure 1. SINCO laboratory is a concrete example how to do service design.*

*SINCO consists of the 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 create the atmosphere of actual service moments for prototyping and re-enactment. As the set-up for prototyping services, SINCO has two 117" background projection screens perpendicular to each other, to provide the background scenery and enable partial, yet immersive, spatiality. This helps to concretize different aspects of service concepts and ideas for participating users by giving them a better idea of what the service experience might contain and feel like. In SINCO, it is possible to simulate all kind of services, processes, and practices.*

This study is a part of the outcomes of a research called 'Value through Emotion' and was funded by TEKES (Finnish Fund for Technology and Innovation). This study is a case study research in which the practical development projects of five companies (KONE Oyj, Danske Bank, Norrhydro, Lapland Safaris, and Santa Park) and supporting interviews with nine other companies (GE, Intuit, IDEO, Adaptive Path, LVL Studio, Volkswagen, Whitespace, BetterDoctor, and Experientia) created a case to understand both the designer's role in value creation and the service design approach that enables this value creation. Research data were collected through thematic interviews and participatory observation and were analyzed using a theory-driven content analysis.

One important result is that the service design approach can generate appropriate solutions to support positive emotional reactions and guide positive feelings throughout the service situation (Miettinen,

2011; Miettinen & Koivisto, 2009; Miettinen & Valtonen, 2012; Stickdorn & Schneider, 2010; Tassi, 2009). The service design serves as a platform through which company values, customer needs, and motivating emotions meet. Prototyping and simulation concretize and visualize intangible service products that enable identification of customers' feelings and objectives during the service experience. Emotional aspects can be captured early in the development process through contextualized and personalized prototypes when used with appropriate fidelity. Accordingly, the identified premises to support this process in companies include an appropriate prototyping environment and embracing the new facilitator role for service designers.

Service simulation and prototyping aid in decision making and serve as personalized emotional samples that reveal customers' emotional reactions and enable decision makers' to engage in the process through their own experiences. Furthermore, simulation serves as an internal communication platform, which reveals strategic tacit knowledge. Simulation also helps the service staff train employees to handle the emotional responses of customers? This process is critical because the emotions of the service staff are present while providing service and create value through this interaction.

## **2. Research data and methods**

This paper is based on thematic interview and group discussion data collected from Finnish (N=5) and international companies (N=9) that have used service design and the designing thinking process or have used designers in their service development process. The research data was collected from two research projects: 'Practices, Processes, and Products for Medicine and Healthcare' and 'Value through Emotion'. The data was collected in 2013 and 2014. The interviews with the international companies were deep thematic interviews about the role, process, and benefits of service design. The Finnish companies were involved in action research focusing on the understanding and concretizing of customers' emotional value in the service process and the benefits of service prototyping. The group discussions (N=6) and interviews (N=6) were conducted usually after the co-creation sessions were facilitated with technology-aided prototyping and simulation methods. Participatory observation was also used as a research method for this paper. The service prototyping sessions (N=10) were both documented with video, and fieldwork notes were taken. Fieldwork notes were analyzed in the

same manner as the interview material. The fieldwork notes were important as the emotions (laughter, frustration, anger) that emerged in the prototyping sessions were noted carefully. Video documentation served as a visual note to confirm the outcome of the analysis.

The content analysis was conducted using two analyzing rounds in which researchers first selected key terms and phenomena that responded to the research questions and the main concepts related to the terms. The researchers read the transcript material through looking for themes related both to service designers' role as well as the emotional aspects related to service prototyping. They marked the themes and categorized them. In the second round, the findings were discussed in research meetings to understand the significance and meaning in relation with research questions. The findings were discussed in theoretical context.

### **3. Emotion, co-creation of value, and service prototyping are integrated in service design**

The service design process provides the platform and the tools for the stakeholders and the developers to integrate the themes of emotion in service development. This includes the customer's emotion and experience during the service experience as well as the emphatic effort to understand the customer's emotion and use this knowledge during the decision-making process when developing services. Service thinking is an on-going consideration of how collective needs are met without overstressing the human and natural resources (Reason, Downs, & Lovlie 2009). The core of service design is to uncover these needs and emotions. This approach is used in experience design, which is an approach to creating an emotional connection with users through the careful planning of tangible and intangible service elements (Pullman & Gross, 2004). Designers can facilitate change and assist all stakeholders in understanding what the steps toward desired outcomes are. Cook, Bowen, Chase, Dasu, Steward & Tansik (2002) have discussed human issues in service design. They present *"the concept of scripting where customers interact with services according to some pre-existing paradigm, which are referred to as scripts. These can indicate where standardization is value added, and where customization of the service would be more appropriate. Conflict between the service system design, and the customer's chosen script is a major source of service failure."* Further, they discuss the customer experience and emotion from delight to rage and use scripting as means to appropriate the emotion in customer encounter situation. Service prototyping can give means to

experiment different service encounter situations and analyze feelings related to these situations. This is a quick way to see if the encounter engaged users in laughter or frustration.

Sangiorgi (2012) proposes that design researchers work at two parallel levels. At one level, they introduce Design for Services methods with a focus on improving service experiences and offerings designed to meet customer needs. Second, 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. In this way, the service design approach integrates both the themes of a customer's emotion and experience in the innovation process and concretizes them for the benefit of value co-creation efforts.

Srivastava and Verma define the co-creation of value as 'a systematic and structured process based on collaboration with outsiders to generate value for the firm as well as for the customers' (2012, p.192). Consumers want to define choices in a manner that reflects their view of value, and they want to interact and transact in their preferred language and style (Srivastava & Verma, 2012, p. 192). In goods-dominant logic point of view, a company can create more value for its customers either by lowering costs or by making the product more attractive when value is assessed as value-in-exchange or value-in-product (Vargo, Maglio & Akaka, 2008, p. 148; Srivastava & Verma, 2012, p. 198). In service-dominant logic, value creation focuses on value-in-use or value-in-context. Vargo and Lusch suggest that 'there is no value until an offering is used – experience and perception are essential to value determination' (2006, p. 44). Moreover, one of the foundational premises of the S-D logic is that value is always uniquely and phenomenologically determined by the beneficiary (Vargo et al., 2008, p. 148). The definitions of value co-creation ground well the role of experiential learning and prototyping as a method in the co-creation process.

Service prototyping provides a means for concretizing the customer's emotion and experience. Service prototyping is a new area for a designer that locates him in the centre of a business development case working as a facilitator and using concretizing tools that connect the stakeholders and visualize the service offerings in the case. The short duration of a prototype cycle, from 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 regarding the technical feasibility, consumer

desirability, and business viability (Samaliois, 2009). Prototypes are tools for thinking (Brown, 2009). According to Coughlan et al. (2007), prototyping is a powerful means to facilitate organizational development and change.

Blomkvist (2012) proposed four distinguishing features of prototyping approaches and presented them as levels in which prototyping can be conducted: 1) artefact, 2) use, 3) context, and 4) service levels. This division of prototyping approaches is done to make 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. Also, the development and low cost of audio-visual devices and mobile technology with a variety of applications enable the rapid simulation of use contexts and high-fidelity experiments with ideas early and inexpensively (Rontti, Miettinen, Kuure & Lindström, 2012). These kinds of methods also allow designers and users to enact or simulate service experiences before they have been established in an organization (Holmlid & Evenson, 2007).

#### **4. Service designers have strategic roles in value creation**

*In the company my role is combined designer's and sociologist's role adding the self-driven researcher's role in that. I do the research work related to the projects from the human factors and design research aspects. So I haven't got traditional industrial designers' role at all.*

The designer's role has changed. Design thinking has changed the designer's work on both the operative and the strategic level. On the operative level, the design competencies and methods are applied in a wide range of things from the development of social services in the public section to the addition of service aspects in the manufacturing processes.

*First, prototypes are scenarios that are sketched by a professional visualizer who can manage them quickly. I have also produced concept videos and service concept videos in few days warning. You need to have quick storytelling skills.*

The designer's responsibilities and job descriptions have become more research-oriented. On the other hand, social and communication skills in addition to having experience with the methods and tools used in different phases of the innovation process are necessary. The designer's role and activities are increasingly international. The designer's role in the co-design and participatory design work has become more important and diversified. Design is no longer used only in the beginning of the innovation process but also as a tool to maximize the possibilities for all types of innovation during the continuous development and the quality control of service products.

The process of service design enables the concretizing and the understanding of the overview and the details. This facilitates the development work and the innovation process. Service designer appears in a role of pushing the shift from company's 'inside-out' development strategy into 'outside-in' view (Rhea, 2003, p. 146).

One aspect in shaping both the strategic and the operative role of service designers is whether or not to incorporate design as an in-house or as outsourced activity. The service design teams conducting the Finnish case projects were outsourced. According to the company executives – especially the SMEs with limited in-house resources dedicated to service development – the outsourced team provided them with 'fresh external thoughts':

*As you (service design team) are not involved in this business, it like brings very different approach in this (development). It is a good thing. (---) And you have been indeed working on these (service design projects) with many different business fields so you maybe have a bit more extensive view.*

The appreciation of the external view not only concerned the development of the particular services but also the strategic transformation process from a production-oriented development strategy approach to a customer experience -based innovation approach. In large and established organizations, this may be a long process of change.

*I have been working for many years (as an in-house service designer), moving through a machine centered company, so some technology driven to a customer and end user and this (transformation) is something that we will take to many years. So that's the biggest challenge, the change of culture.*

Regardless of the size of the organization and whether the designers were in-house or externalized, the designer's role as a communicator and a facilitator of the process is evident. Knight (2012) proposed the designer's role: 'design is not just thinking or pure creativity but is 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 whatever way to make it understandable to others'(Knight 2012,p. 170). In our research, examples of practical communication skills were described as follows:

*First prototypes are scenarios that are sketched by professional visualizer who can manage them quickly. I have also produced concept videos, service concept videos in few days warning. You need to have quick storytelling skills.*

These kinds of comments in the interview data are submitted by engineers and managers as well as designers. The trend is that companies such as Intuit and Volkswagen are placing designers within the RDI team not isolating them in their own units anymore. A strategic level designer's role is to facilitate the transformational change in companies and governmental institutions. Service design is an outcome of this transformation process and is demonstrated in almost all of the interviews conducted during the research process. It is clear that service design and designers play a strategic role in the co-creation of value by using not only different service design methods but also a wider approach that integrates service thinking, understanding the user relative to service rationales, and constructing service propositions. Wetter-Edman (2012) discussed the service design discourse in which the relationships between users, designers, and design objects are important; however, in service management, the underlying rationales are present. There is an increasing interest in methods and tools used for understanding users in their context and in how to transfer this understanding to successful service propositions and profit. There is a need to identify and understand the rationales as well as the relations.

## **5. Prototyping as an emotionally engaging co-creation platform**

Prototyping sessions serve as platforms for co-creation. Through prototyping, simulation and empathizing methods the knowledge, which is perceived as value is either triggered or supplemented by the emotional experiences of the participants who attended the co-



creation sessions. Emotional value for a stakeholder is conveyed through personally experiencing the prototypes. Audio-visual simulation enables sampling both the conscious and subconscious signals affecting the experience (Shaw, 2007, p. 28-29).

In the service design cases for the Finnish companies, the process consisted of two to three workshops for each case. Prototyping and simulation served as a central platform for analysis, testing, ideation, and communication. Between the workshops, the service design teams either worked on mystery shopping and observing actual service situations or they developed concepts and prepared the next workshop at the prototyping lab. Some of the workshops were arranged at the company's site with a 'mobile' setup of the simulation devices and prototyping equipment. The prototyping methods used in the workshops included a customer journey walkthrough with audio-visual simulation, enacting, physical props, and idea mock-ups. Technological devices and applications were used in an innovative and creative way to achieve quick high-fidelity demonstrations of ideas and supplement drama and to help participants engage and empathize with various tasks, goals, and situational determinants. (Rontti et al, 2012.)

When analyzing the research data, the benefits, roles, and premises of prototyping sessions in co-creating emotional value were outlined through the place and time, facilitation, and the involvement of stakeholders.

### ***5.1. Place and time for development***

According to our research data, companies see prototyping workshops as a place, time, and a 'warrant' for development and co-creation. An interesting point of reference for this finding is the Japanese concept of 'Ba,' which is a word meaning 'a shared space and time opportune for the development of knowledge in the organization' (Nonaka & Konno, 1998). Similarly, in the Japanese Lean Management Philosophy the term 'gemba' denotes the 'place of action' or 'the real place'. 'Gemba walks', in turn, refers to the action of going to see the actual process, understanding the work, asking questions and learning instead of simply forming theories (Womack, 2011). Prototyping and simulation labs dedicated to experiential and creative working - or even a corresponding space arranged temporarily with relevant equipment - are important practical premises for co-creation sessions. Smart use of configurable space can also foster creative serendipity producing unexpected innovations (Kelley

2001, p. 122-129). The agile use of technological devices and digital content enrich the possibilities to modify the space and add to the dimension of virtual reality.

Each case company was able to figure out the potential role and location for a service prototyping environment through the conducted service design cases. The three SMEs preferred the use of prototyping and the simulation environment to be an outsourced service not only due to the investment costs but also because they valued the opportunity to physically leave company and concentrate on creative thinking. In these companies with no dedicated in-house service development department, the adoption of service design thinking and the participation in the sessions was the responsibility of active entrepreneurs or a person responsible for services marketing and sales. In the two larger global companies with in-house R&D departments, at least two functions were identified for the service prototyping environment: at the headquarters for service offering development and at national branch offices for localization and service staff training.

### ***5.2. Facilitation – the designer’s new responsibilities***

Facilitation is a crucial activity in prototyping and in co-creation workshops. In the sessions using simulations, the facilitator’s role is divided into three parts: 1) directing the participation and the script of the physical experience of the customer journey, 2) a rapid building of mock-ups ‘on the fly’ (both tangible and digital ones), and 3) documenting the findings and results. One good practice is to have two facilitators with designated roles. Good preparation is emphasized for the workshops using technology. Engaging the participants and creating a relaxed and secure atmosphere are vital actions of the facilitator (Sibbet, 2005, p. 164). In addition to the facilitator’s personality and various collaborative warm-up techniques, prototyping methods and audio-visual simulation devices offer great tools for a warm-up (e.g., enacting an off-topic task in a relaxing place). An important finding in supporting the eliciting of emotional value is personalizing prototypes for the attendees (see Table 1.). The facilitator must be observant and continuously visualizing, concretizing, or co-building the participants’ ideas (Sibbet, 2005). In ensuring productive outcomes, the structure and rhythm of the workshop is important. The research on the meaning of pauses between prototyping sequences conducted by Blomkvist and Arvola (2014) shows that a walkthrough with pauses provided both more comments and more detailed feedback. Moreover, inviting the participants to summarize the workshop findings both individually and

collaboratively enhances the externalization of the participants' tacit knowledge, which has already been stimulated through prototyping.

Table 1 presents the features of prototyping and simulation that can help in understanding the emotional value in different phases of the service design process in more detail (Blomkvist, 2014; Buchenau & Suri, 2000; Kronqvist et al., 2013; Sibbet, 2005).

*Table 1. Features of prototyping and facilitation that support emotional engagement*

<b>Activity in the service design process</b>	<b>Specific features in prototyping for emotional engagement</b>	<b>Examples of the methods</b>
1. Gathering customer experience data	Emphatic methods,  testing the service with as authentic need and goal as possible	<i>mystery shopping, service safari, photographing customer views as a sequence of the service journey</i>
2. Studying customer insight findings	Enacting, Analogous role play, exaggerating  Pausing for documentation	<i>Servicescape simulation (images and sounds) e.g., for a Finn team to understand a foreign travellers feeling of contrast and exoticism when coming to Lapland, the team goes through a simulation of travelling from Finland to Africa.</i>
3. Teaching / learning customer insight	Experiencing a service journey with personal configuration  Personalized information in prototypes  Switching roles  Concretizing situational restrictions and exceptions as	<i>Servicescape simulation using images from the actual surroundings of the service place or otherwise similar to which the stakeholder can identify him/herself with. 'Matti recommends' rather than 'imagine your friend is recommending.' (Matti being the friends name)  e.g., a ticking-timer</i>

	a personalized setting	<i>mobile app running given to a participant in order get the 'in a hurry' feeling, virtual baby or dog with sound, simulate blindness with eye-patches, etc.</i>
4. Generating and testing ideas	<p>Concretizing 'what ifs' quickly, iteratively, and often Offering a personal trial for each participant</p> <p>Decreasing intervention while running</p> <p>Using high-fidelity emotional samples especially for ideas utilizing new technology or functional principles</p> <p>Involving participants with converging ideas as results</p>	<p><i>'Quick and dirty' mock-ups and props, inserting ideas live as overlay images or sounds on simulation,</i></p> <p><i>e.g., remote paper prototyping with mobile devices</i></p> <p><i>Using corresponding or analogous existing applications, combining multiple applications and devices or using them in a 'wrong' way to concretize idea functionally</i></p> <p><i>Co-building potential solutions</i></p> <p><i>Summarizing results both individually and together</i></p>
5. Communicating finished concepts	<p>Orientation to the desired mood</p> <p>Involving the audience by assigning roles</p> <p>Giving personalized tasks and goals</p>	<p><i>Storytelling, music, video</i></p> <p><i>Servicescape simulation</i></p>

### 5.3. Value through involvement

In the case projects of the Finnish companies, a variety of selected stakeholders were present at the prototyping workshops. According to the executives, the ideal line-up of co-creation sessions would consist of the following stakeholders:

- 1) Business development manager(s) with a decision making mandate in the development case
- 2) Sales and marketing representative

- 3) Real customers (in b2b cases this may consist of a decision maker, a purchase representative, a substance specialist, and an end-user)
- 4) Service staff member(s) who daily interact with customers
- 5) Stakeholder in charge of the development of the technical system and/or internal processes for the development case
- 6) Service designer(s) as facilitator(s) of the sessions

These roles were present in some way in all of the case projects but especially in the SMEs in which a participant from a company may occupy multiple roles; however, challenges arose in having all of the stakeholders attend the sessions. In addition to this practical scheduling issue of a relatively short and effective project, this may be related to the size of the organization and its hierarchies as well as to the unestablished strategic commitment to use service design and co-creation as a tool. The case projects also show that if higher management has an understanding and commitment to service design thinking, then the practical arrangements will be arranged more easily.

Different stakeholders suggested several benefits of co-creation sessions in the interviews and group discussions. One of the more valuable benefits appeared to be the 'emotional wake-up', which occurred several times not only for managers who are possibly more distant from the everyday customer interactions but also for the service staff. Through the personal experience of their everyday surroundings through the eyes of a customer, they were able to understand what customer-centred innovation strategy means in practice. The 'wake-up' happened often despite the possible prior explicit awareness of the issues. For instance, a customer servant of a tourism company explained the effects of servicescape simulation with a detailed example:

*Road signs were askew and even though you bypass it yourself like hundred times a year, you don't notice the post like it's askew. (--) And if you read it on paper (refers to mystery shopping reports), you still don't get it that it's askew (laughs). But when you see the image (the 1:1 photos used as simulation backgrounds), then you understand, damn it is askew!*

Chaw (2007) also suggests a similar experiential learning approach for capturing emotional insight: bringing decision makers on 'safaris' at actual service situations enables them to 'get it' – to personally feel the experience and the subsequent emotions in order

to understand 'the DNA of the customer experience' (Chaw 2007, p. 139).

In large companies, prototyping sessions bridge functional silos by bringing together representatives from different departments. The internal collaboration through experiential methods enable the appearing of the personnel's tacit knowledge about both the company's internal service delivery processes and important experiences with customer interactions (Konttinen et al., 2011, p. 67-68). Prototyping and simulation serve as a rich knowledge transfer mechanism between the service design team, the company management, and the service staff. The explicit customer insight findings brought forward by the design team together with the concretizing of the issues through prototyping triggered the externalization of the participants' tacit knowledge (Konttinen et al., 2011).

Prototyping sessions also helped in making the company's internal processes transparent. Ideally, the sessions helped the development management realize what is actually happening in the company regardless of formal guidelines or service manuals. On the other hand, the participants were able to identify and suggest good practices and successes worth spreading across the entire company. This was not limited to increasing customer satisfaction but also includes potentially increasing job satisfaction and helping employees achieve personal sales goals. Prototyping sessions also serve as an internal benchmarking and platform for analyzing and developing the customer experience of different existing business sites of the company (e.g., travel destinations). Using prototyping methods was also identified as a new education tool for training service staff's actions during interactions with customers. This is important because the mood of the customer servant impacts the customer's emotional experience.

## **6. Assessing the value of emotional experimentation**

Prototyping and simulation provide value to businesses through the information and insight revealed and communicated to different stakeholders. According to Hubbard (2007, p. 99) there are three reasons that information is valuable to businesses. First, it can reduce the uncertainty about decisions that have economic consequences. Second, information may affect the behaviour of stakeholders, which has economic consequences. Third, the information may have its own market value (ibid.). The breakdown of the value of information leads to the question: to what extent can emotions and feelings be considered to be reliable information? The question was also asked

by one of the development managers from a large case corporation, which according to the manager, attaches great importance to academic and theoretical recommendations as development triggers and decision making arguments. According to psycho-sociologist Schwarz (2012), people refer to their feelings as a source of information, and feelings also provide information that can serve as a basis of judgment and influence how people process information. In his Feelings-as-information Theory, Schwarz (ibid) further distinguishes emotions (e.g., being angry *about* something) from moods (e.g., being *in* a bad mood), cognitive feelings (e.g., surprise or boredom), and metacognitive experiences (e.g., feeling something is easy or hard). According to him, people use feelings as a source of information until it is attributed to an incidental source when it loses its informational value. He also proposes that changes in feelings are more informative than stable emotions.(ibid)

Another conclusion that the interdisciplinary theoretical examination of the research results lead to is the connection between emotions and learning. Moon (2004, p. 53) defines emotional insight as a 'common activity that becomes evident when we acknowledge and label it as relatively distinct'. According to Moon (ibid., p. 54), emotions influence the structure of knowledge and the process of learning. Emotions may arise in the process of learning and may also facilitate or block learning. Emotional insight occurs when the emotional orientation of the person changes. Blomqvist (2014) studies service prototyping using the theoretical framework of situated cognition that also connects with learning. He identifies the reasons for using an external representation in service design as articulation, learning, communication, collaboration, and maintaining empathy (Blomqvist 2014, p. 73). As a future research topic, he also suggests studying the kinds of learning that occur during prototyping (Blomqvist, 2014, p. 81).

Prototyping and simulation methods are experiential learning and teaching tools that enable the emotional engagement of participants (Kuure & Miettinen, 2013). Physical prototypes and co-building can support stakeholders' ability for expressing personal experiences (Kronqvist et al., 2013). Service design creates new art-based practices to express meanings. Computer-aided methods can enrich the ways in which art conveys meanings, and simulation becomes a language and a platform for communication (Kronqvist et al., 2013). Audio-visual simulation helps engage a participant's schema in service contexts and understand new ideas better through assimilating them in the existing contexts of a participant's experience (Blomqvist,

2014, p. 58). Service prototypes enable constructing both conscious and subconscious elements to be experienced.

## 7. Conclusion

Value co-creation models have changed. New models place the customers' needs in the focal point of the development process. There is more pressure to engage and involve the customer in the innovation process. This places the designer in a more central and strategic position in the company. This has also changed the role of the designer and added new skills and competencies to her or his professional portfolio.

Prototyping serves as a platform for co-creation, and it helps to convey the emotional components of service value. Prototyping and simulation methods are experiential learning and teaching tools that enable the emotional engagement of participants. Prototyping can provide emotional value to businesses through the conscious and subconscious information it can reveal and communicate to different stakeholders. A dedicated place and time for prototyping, a skilled facilitator, and the active participation of stakeholders are the practical premises for co-creation sessions. Personal experimentation and collaboration is emphasized in eliciting emotional insight in co-creation. Prototyping sessions can support decision making, help in bridge functional silos in big companies, and help in using tacit knowledge as a resource in these mutual learning sessions.

## References

- Blomkvist, J. (2011). Conceptualising Prototypes in Service Design. Faculty of Arts and Sciences Thesis No. 101. Department of Computer and Information Science, Linköpings universitet. Retrieved June, 2011, from <http://liu.diva-portal.org/smash/record.jsf?pid=diva2:412916&rvn=2>.
- Blomkvist, J. (2012). Conceptualisations of Service Prototyping: Service Sketches, Walkthroughs and Live Service Prototypes. In Miettinen, Satu and Valtonen, Anu (eds.): Service Design with Theory. Discussion on Value, Societal Change and Methods. Lapland University Press 2012, 177–188.
- Blomkvist, J. (2014). Representing Future Situations of Service: Prototyping in Service Design. LinkLive Service Prototypes. In Miettinen, Satu and Valtonen, Anu (eds.):gs universitet. Retrieved June, 2011, from Th



- Blomkvist, J., Arvola, M., (2014). Pausing or not? Examining the Service Walkthrough Technique. Proceedings of the 28th British HCI Conference. (SUBMITTED). BCS Learning and Development Ltd, UK.
- Blomkvist, J. Segelström, F., (2014). External Representations in Service Design: a Distributed Cognition Perspective. *The design journal*, 17(3). New York, NY: Bloomsbury.
- Brown, T., & Katz, B. (2009). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. New York: Harper Business.
- Buchenau, M., & Fulton Suri, J. (2000). Experience Prototyping. Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques, DIS '00. Brooklyn, NY, USA.
- Cook, L.S., Bowen, D.E., Chase, R.B., Dasu,S., Steward, D.M. & Tansik, D.A. (2002). Human issues in service design. *Journal of Operations Management*. (20) 2002, 159-174
- Coughlan, P., Fulton Suri J., & Canales K. (2007). Prototypes as (Design) Tools for Behavioral and Organizational Change. A Design-Based Approach to Help Organizations Change Work Behaviors. *The Journal of Applied Behavioral Science*, 43(1), March 2007, 1–13.
- Hubbard, D. (2007). *How to Measure Anything: Finding the Value of Intangibles in Business*. John Wiley & Sons, 2007. ISBN 978-0-470-11012-6
- Grönroos, C. (2008). Service logic revisited: who creates value? And who co-creates? *European Business Review*. Vol. 20 Iss. 4, 298–314.
- Holmlid, S., & Evenson, S. (2007). Prototyping and enacting services: Lessons learned from human-centered methods. Paper presented at Quality in Services conference, QUIS 10, Orlando, Florida.
- Kelley, T. (2001). *The Art of Innovation Lessons in Creativity from IDEO, America's Leading Design Firm*. Doubleday. Random House Inc. New York, USA.
- Knight, J. (2012). The Experience Design Framework: Supporting Design Thinking in the Service Domain. In Miettinen, Satu and Valtonen, Anu (eds.): *Service Design with Theory. Discussion on Value, Societal Change and Methods*. Lapland University Press 2012, 169–176.
- Kontinen, J., Smedlund, A., Rilla, N., Kallio, K., & van der Have, R. (2011). Knowledge Transfer in Service Business Development - Transfer mechanisms and intermediaries in Finland. VTT

- Publications. Retrieved 22 05, 2014, from  
<http://www.vtt.fi/inf/pdf/publications/2011/P776.pdf> , pp. 61-68.
- Kronqvist, J. Erving, H. & Leinonen, T. (2013). Cardboard hospital - Prototyping Patient-centric Environments and Services. Proceedings of the Nordes 2013 conference.
- Kuure, E. & Miettinen, S. (2013). Learning through Action: Introducing the Innovative Simulation and Learning Environment Service Innovation Corner (SINCO). World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education Vol. 2013, No. 1 (Oct 21, 2013) pp. 153611545
- Mahmood 2011: Sector Dynamics, Productivity and Economic Growth in Europe: A Panel Data Analysis. Publications of the University of Eastern Finland. Dissertations in Social Sciences and Business Studies. No 23.
- Miettinen (toim.) 2011: Palvelumuotoilu – uusia menetelmiä käyttäjätiedon hankintaan ja hyödyntämiseen. Helsinki: Teknologiainfo Teknova.
- Miettinen & Koivisto (toim.) 2009: Designing Services with Innovative Methods. Kuopio: Kuopion Muotoiluakatemia.
- Miettinen & Valtonen (toim.) 2012: Service Design with Theory. Discussions on Change, Value and Methods. Rovaniemi: Lapland University Press.
- Moggridge, B. (2006). Competitiveness Summit '06 [Roundtable discussion]. Design Council UK. Retrieved from  
<http://www.creative-net.co.uk/Design-Council/Files/Podcast-Transcripts/Bill-Moggridge-Co-Founder-IDEO-Consulting-Associate/>.
- Nonaka, I. & Konno, N. 1998. The Concept of 'Ba': building a Foundation for Knowledge Creation. California Management Review 40 (3), 40-54
- Pullman, M., & Gross, M. (2004). Ability of Experience Design Elements to Elicit Emotions and Loyalty Behaviors. Decision Sciences, 35 (3), 551-578.
- Reason, B., Downs, C., & Lovlie, L. (2009). Service Thinking. live|work. Available at <http://www.livework.co.uk/articles/service-thinking>
- Rintamäki, Kuusela & Mitronen 2007: Identifying competitive customer value propositions in retailing. Managing Service Quality, Vol. 17, No. 6, pp. 621-634.
- Rhea, Darrel 2003: Bringing Clarity to the 'Fuzzy Front End' A Predictable Process for innovation. Teoksessa Design Research Methods and Perspectives (edited by Brenda Laurel). pp. 145 – 154. Massachusetts Institute of Technology, London, England.

- Rontti S., Miettinen, S., Kuure, E., & Lindström, A. (2012). A Laboratory Concept for Service Prototyping – Service Innovation Corner (SINCO). SERVDES2012, Service Design and Innovation Conference, 2012, Laurea University of Applied Sciences, Finland.
- Sangiorgi, D. (2012). Value co-creation in Design for Services. In S. Miettinen & A. Valtonen (Eds.): *Service Design with Theory. Discussion on Value, Societal Change and Methods* (pp. 95-104). Rovaniemi: Lapland University Press.
- Schwarz, N. (2012). Feelings-as-information theory. In P. A. M. Van Lange, A. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 289–308). Thousand Oaks, CA: Sage.
- Shaw, C. (2007). *The DNA of Customer Experience. How Emotions Drive Value*. New York: Palgrave Macmillan.
- Sibbet, D. (2005). *Graphic Facilitation. The Art of drawing Out the Best in People*. in Sandor P. Schuman (Editor) (2005), *The IAF Handbook of Group Facilitation: Best Practices from the Leading Organization in Facilitation*, Jossey-Bass.
- Srivastava, R.M. and Verma, S. (2012). *Strategic Management. Concepts, Skills and Practices*. PHI Learning Pvt Ltd, New Delhi.
- Stickdorn & Schneider 2010: *This is Service Design Thinking. Basics – Tools – Cases*. Amsterdam: BIS.
- Tassi 2009: *Service Design Tools – Communication Methods Supporting Design Processes*. [www.servicedesigntools.org](http://www.servicedesigntools.org) (accessed 10.5.2014)
- Vargo, S. L. and Lusch. R. (eds.) (2006). *The Service-Dominant Logic of Marketing: Dialog, Debate and Directions*, M.E. Sharpe Inc., Armonk, 43–56.
- Vargo, S. L. and Lusch, R. (2008). Why ‘service’? *Journal of the Academy of Marketing Science*, 36, 25–38.
- Vargo, S. L., Maglio, P.P. and Akaka, A. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal* (2008) 26, 145–152
- Wetter-Edman, K. (2012). Relations and rationales of user’s involvement in service design and service management. In Miettinen, Satu and Valtonen, Anu (eds.): *Service Design with Theory. Discussion on Value, Societal Change and Methods*. Lapland University Press 2012, 105–114.
- Womack, J. (2011). *Gemba Walks*. Cambridge, MA: Lean Enterprise Institute, Inc. ISBN 978-1-934109-15-1.