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Embodied Design Methods as Catalyst for Industrial Service Design

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All over the world manufacturing companies are moving towards service business. The service-dominated landscape of business is complex and the value of services is produced in networks combining products, services, different providers and actors. Services deeply influence the socio-economic systems we are living in, and, therefore, in the future all business will be service business one way or another. The article locates embodied design methods in the context of industrial service design processes and large-scale organisations. It connects embodied design to changing business landscape via industrial service design field where theatrical methods are used to understand, ideate and evaluate the impact of service concepts and to support transformation in an organisation. The article presents one design case done in SINCO service innovation laboratory with a large manufacturing company. Findings show that embodied design can speed up the industrial service design process by gaining a common understanding of the design challenge, by producing easily usable data and by earning the commitment of the stakeholders.

Keywords; embodied design methods, industrial service design, design process, applied theatre

1 Introduction

Many companies worldwide are repositioning themselves strategically towards service business. For over a decade the fact has been that economies exchange more services than physical goods (Vargo & Lusch, 2004, 10), which has had an effect on companies' production, strategies and structures. The term 'servitization' has been introduced to conceptualize the idea of manufacturers becoming service providers (Lay, 2014). In addition, terms such as 'servitising' (Gray, 2013) are used to declare that inventing and adding services onto existing products will increase the value of any related intervention. Multiple organisations have continuously increased their revenues coming from the service business and have started to expand their business by offering product-related services (Lightfoot, Baines & Smart, 2013).



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The transition to becoming successful in delivering services through product-service systems (PSS) (e.g. Guidat et al., 2014) is always unique for each company. Organisations need to change their business models, processes and procedures, relationships with the customer and the supplier as well as the mindset of employees to create value for their offerings (Roy & Baxter, 2009). Nevertheless, during this transition, as well as after it, new ways for understanding the design process, implementation and maintaining of the services are needed in different departments of the organisation. In a holistic and sustained service delivery process, all the involved teams should have an understanding of the provided result and its value for the end user and the organisation. In the environment where the focus of producing product-service offers is based on quantitative knowledge and information, the value of qualitative methods and data is often overlooked.

In the design of a PSS, cultural and social values, people and technology have the same relevance. Therefore, the designer is required to synthesize solutions emerging from the comparison of different points of view, different needs and socio-cultural models (Morelli, 2003). Several aspects of the development of PSSs are related to the discipline of design, namely, analysis of technological potentials, investigation of users' behaviour as well as contribution to the interpretation and translation of emerging cultural and social patterns into a set of requirements for the future PSS (Morelli, 2002). In this article, the focus is on embodied design methods as a way of understanding, ideating, developing and delivering services in an industrial context.

Even though the concept of services as performances and the use of theatre methods in service development are already recognized in several disciplines, such as marketing (e.g. Grönroos, 1985; Grove, Fisk & Dorsch, 1998) and design thinking (e.g. Weir, 2015), it still has novelty in industrial service design context. The article starts by making an overview of existing research and the connections between industrial service design and embodied methods. Next, the used research methods and data are presented briefly, before focusing on a Service Innovation Corner (SINCO) laboratory and a case study done in this surrounding. The research data generated through the presented use case and the outcomes of the analysis are described next. The article ends with conclusions discussing the findings of the research.

2 Service design and embodied theatre in an industrial context

The development topics of service design are often complex and abstract. This applies also to the industrial context, even though the services might be connected to a concrete product. Quantifying and tracking services that are experienced subjectively is challenging (e.g. Meyer & Schwager, 2007), and, therefore, methods that allow for understanding of user experiences in non-numeric ways can support the development and evaluation of the service offerings. To understand the possibilities of embodied methods in a multi-disciplinary industrial organisation, looking at services as performances unifies different perspectives.

In marketing literature, services themselves have been widely described as 'performances' (Berry, Zeithaml & Parasuraman, 1985; Grönroos, 1985), drawing a direct link to theatre. Service encounters can be thought to have theatrical components, such as a set, actors, audience and performance (Grove, Fisk & Dorsch, 1998). The performance is created when various drama elements of a service blend together over the duration of the service delivery. The customer experience is then based on how well an organisation can combine actor, audience, and setting to sustain a believable and enjoyable performance (Grove, Fisk & Bitner, 1992). Harris, Harris and Baron (2003) have demonstrated how the creation of a dramatic script within service organisations can help to define and clarify the 'experiential goal' or the intended effect of the performance.

In order to create change in services as well as in daily life of organisations service designers need to understand, think through and support interactions, which are not only verbal but also complex and embodied. 'Thinking with hands' is a regularly used metaphor in design thinking (Lin, 2000). This points to something fundamental for designers, namely that the lived body is the ground of human thinking. The way people understand the world is largely based on bodily experiences that come

from having a body with various sensor motor capacities (Lakoff & Johnson, 1980; 1999). The lived body (as in Poulsen & Thøgersen, 2011 by Merleau-Ponty, 1945) is actively engaged in the sense making process and functions as the foundation for interaction and thinking on several connected levels. Poulsen and Thøgersen's (2011) findings show that the design interaction finds its meaning and the shared references through situated embodied participation related to the pre-linguistic engaged perspective of the lived body. Hence, we must recognize the inherent connection between bodily engagement and design of solutions and arrange our activities to support the connection.

Service designers use different kind of theatrical methods to enhance embodiment during design process, such as experience prototyping (e.g. Buchenau & Fulton Suri, 2000), role-playing (e.g. Iacucci, Kuutti & Ranta, 2000), bodystorming (e.g. Oulasvirta et al., 2002), and service prototyping (e.g. Blomkvist, 2014, Rontti et al., 2012, Miettinen et al., 2012). For example, through acting out different scenarios it is possible to experience the pros and cons of a service and the proposed changes. This way decisions can be based on embodied experiences, rather than on the effects we imagine the changes would create. Embodied knowing has also been studied in organisational context from a practice-based viewpoint (e.g. Gärtner, 2013; Styhre, 2004).

Formerly embodied design methods might have been seen as quite radical in a production oriented industrial context. But increasingly more corporations are aiming to adapt service design to make their development processes more user-centric and agile as well as their results more innovative (Merholz et al., 2008). New cues are needed to trigger action and support the creation of new routines in organisations (Eyal, 2014) and that is where novel methods with change potential come into the picture. Penin and Tonkinwise (2009) argue that human-centred service design enables improvisation in service roles rather than scripting them non-negotiable. Improvisation and spontaneity can also be seen as communicative activities in ordinary conversation inside the organisations (Larsen & Friis, 2005). Also, the environment where service design is done can have a significant role on how the methods are and can be used (Rontti, 2016).

For this case study, we use SINCO service innovation laboratory as an environment and context of use for the embodied design methods. Embodied design methods are defined as methods that require bodily involvement of the workshop participants in the given tasks and activities. In the design case used in this article, embodied design methods include bodystorming, role-play and enactment with video prototyping.

3 Research methods and data

The article draws to the long-term collaboration experience of the authors and organisations in service development and utilizes a workshop design case to highlight the practical level of using embodied design methods. The case was done in SINCO laboratory and in collaboration with a large international corporation (later case company) that had originally core business in industrial production, but is currently going through a servitization and digitalization reform. Due to the change in the business, the case company is establishing and evolving their internal competence in service design and innovation. To support development of the new competences, a four-day workshop was organized with a twofold aim: (1) to find new solutions, process and strategy for an existing internal service in the case company, and (2) to act as an educational event about service design process and methods for the employees of the case company.

After every workshop day, a group interview with the workshop participants (n=10) was conducted. The group interviews (n=4) focused on the methods used as well as learnings and experiences of the participants during the day. The workshop participants consisted of the team leader, team members from project management backgrounds in engineering, design and business, and the project owners of the service being developed in the workshop. The research looks at the co-design workshop as a case study and utilizes the collected interview data as primary research data for the article. As a secondary data source, the facilitators of the workshop (n=4) were asked to write a field diary text after the workshop focusing on the embodied design methods used during the workshop. In

addition, the personal experience of the authors using embodied design methods as a part of service design processes, as well as from collaborating with the case company come through as tacit knowledge in the analysis and results.

The research data has been analysed through qualitative analysis methods. The interview and field diary data were first coded, then the initial codes and insights were positioned on a chronological order of the workshop (Figure 1). The workshop process gave the analysis a structured context, and the linear positioning of the codes to the workshop process enabled the reflection of the outcomes in connection to the used workshop methods as well as authors' expertise. After the chronological analysis, the second cycle of coding followed in order to find the overall themes that answer to the question of how embodied design methods can support an industrial service design process.

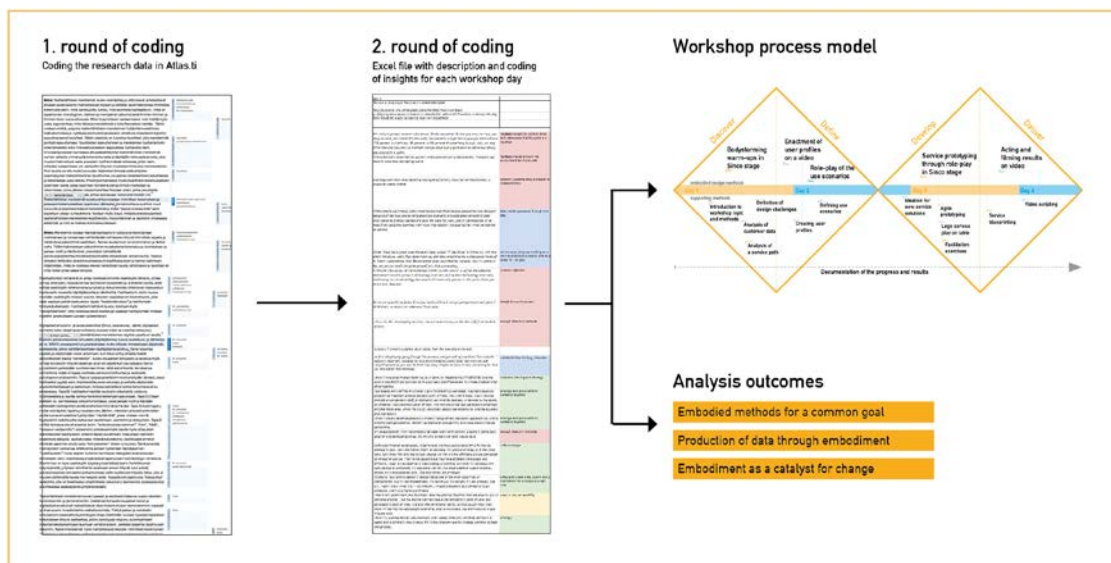


Figure 1: The analysis process from coding to research results.

4 SINCO lab as a workshop environment for embodied design methods

Studies indicate that the use of theatre in service designing is most common in relation to prototype testing (Penin & Tonkinwise, 2009). As designers are concerned about the quality of their designs, they want to test the use of the concepts in an appropriate setting, which might be a staged setting, such as a studio or laboratory. SINCO is a laboratory concept for service innovation, design and development. The laboratory has been developed at the University of Lapland and in collaboration with dozens of companies. The focus on embodied methods in SINCO has been mainly through service prototyping and laboratory approach.

Laboratory environment can be helpful in a number of circumstances, namely: (1) real life environments are in use or too far away from the development office, (2) service development has restricting confidentiality issues, and (3) when other settings that are 'too familiar' to service staff may blind them from issues that require attention (Rontti, 2016). As an environment, SINCO could be classified as a mini theatre where everyone can be an actor as well as a viewer. The laboratory aims to provide a rough but sufficient multi-sensual reference to the authentic environment where the service takes place. The workshop participants in SINCO can sense the service experience and bring out ideas and suggestions to improve the service, that otherwise might have been left uncovered (Miettinen et al., 2012).

A central part of understanding of a service experience is through acting out future scenarios. Role-playing has been recognized as a very powerful method for observing and discovering aspects and elements in the service prototype (Buchenau & Fulton Suri, 2000). There is a difference between

empathizing with someone else's role and experience prototyping intuitively for oneself (Rontti et al., 2012). Previous studies also show that it is beneficial to give a company representative a role in acting out the new service concept. This deepens their insight into the new idea and its user experience as well as gives them the means to evaluate the service experience from a user's point of view, rather than from an outsider's perspective (Miettinen et al., 2012; Rontti et al., 2012). The advantage of an environment such as SINCO has been recognized by local and global organisations. Even though SINCO is located quite remotely from the headquarters of big heavy industry companies, several of them have wanted to run their cases there. The advantages of a laboratory type of a setting are so significant.

4.1 A design case in SINCO lab

The article uses a four-day SINCO workshop with an international corporation as a design case for the analysis. The workshop followed a service design sprint process from discovery and definition to ideation and delivery (e.g. Design Council, 2007). Each workshop day had different focus and, therefore, also the utilized methods varied. The embodied design methods (Figure 2) were reinforced by other design methods such as service blueprinting and creating user profiles in order to support the workshop's twofold aim of developing a service and functioning as a service design training for the participants. In the analysis, the focus is solely on embodied design methods, but it needs to be recognized that they were used in combination and alongside other service design methods.

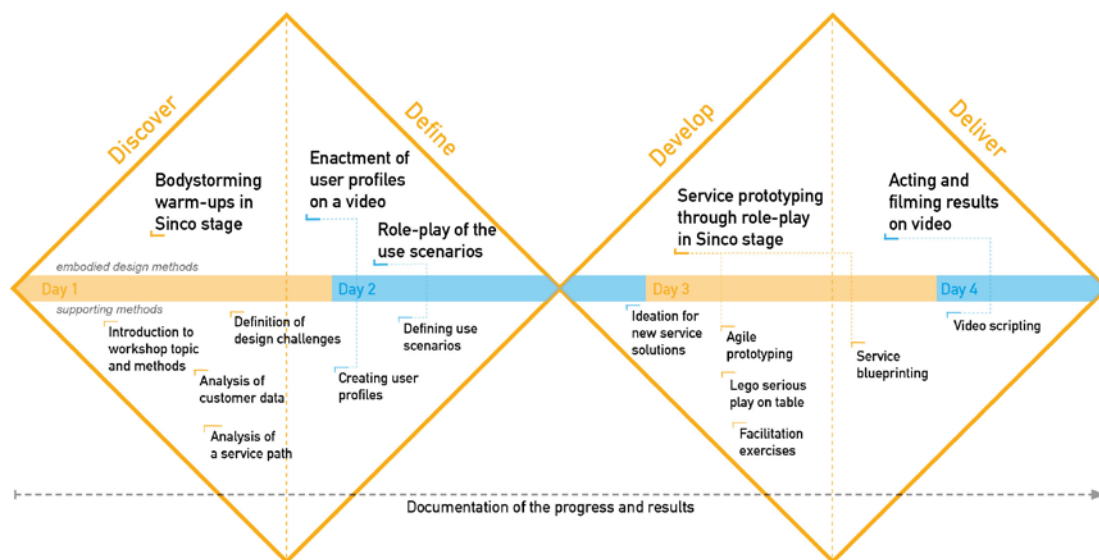


Figure 2: Embodied design methods and supporting service design methods used during the case workshop.

The first workshop day focused on forming of a shared understanding of the workshop goals, giving the participants information about service design and the service development case and analysing the pre-collected user insights as a reflection on the current state of the case service. The user insights had been collected in a form of a questionnaire from the current users of the case service, and the results were analysed through an affinity diagram on sticky notes and whiteboard. The user insights were then placed on a mapped service path of the current service. This exercise helped the participants to evaluate the status quo of the service, find the opportunity areas for improvements, and to set the goals for the service development.

On the second day, the participants focused on the user-centric view by creating user profiles that worked as a basis for user scenarios. The user profiles were based on the collected user insights and

were created first on paper with persona-like profile description. User profiles were then transformed into fast videos enacted by the participants in order to document and communicate the personalities and key features of the user profiles to other participants. User scenarios were then created around these user profiles and followed a service journey of the person. The scenarios were built first situation by situation on a paper. The developed scripts were then acted out by the participants through role-play in SINCO service stage (e.g. Ronitti et al., 2012). Through role-playing, the insights and ideas were collected on a board as post-it notes where they were used as new data points to depict the current situation of the existing service through the eyes of the users (Figure 3).

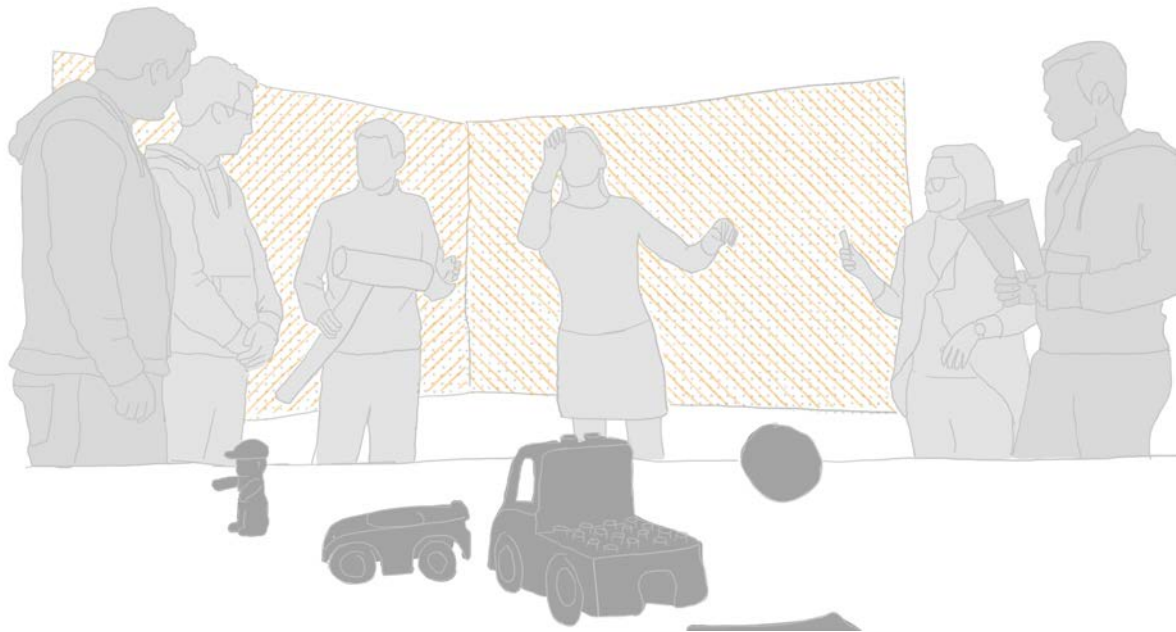


Figure 3: Role-play set-up for the service journey development.

The role-play continued on the third workshop day, but this time new service ideas were included in the enactment together with service prototyping with low-fidelity models. The prototypes were first ideated on a whiteboard table with Lego miniatures to easily demonstrate the interactions in the service situation. Prototyping was done in cycles between concretizing ideas on a table and continuing it as a role-play in the SINCO stage. During the role-play, the participants used any props available in the SINCO lab to fast prototype new solutions for the situations they noticed problematic or otherwise potential for new service solutions. Throughout the role-play each service situation was documented on a service blueprint by the team members observing the role-play. After going through all the service situations, the teams went through the service blueprints filled in during the role-play and completed the gaps that had been left out. During this exercise, the team members practiced facilitation of the teamwork by switching roles of facilitators one at a time.

On the last day of the workshop the core findings from the finished service blueprints were transformed into video storyboards. The storyboards were used to create short video stories about the core values of the new services solutions that were created during the workshop. In creating the videos, the participants took roles in filming, acting and editing the videos. They used smartphones and tablets as tools to shoot the videos, and iMovie as a tool to do fast editing of their video stories. The videos together with detailed service blueprints worked as the main deliverables from the workshop and supported the communication of the main results to the key stakeholders in their organisation.

5 Embodied design methods in industrial service design process

The analysis of the workshop data shows that there are different layers that can be identified when talking about the use of embodied design methods in an industrial context. The goals and purpose of the usage of embodied design methods can indicate what value and benefit the methods can provide for the service design sprint process. The following three sections focus on the opportunity areas of embodied design methods as a catalyst for an innovative industrial service design process in a large manufacturing organisation.

5.1 Embodied methods for a common goal

Embodied design methods may not be the most familiar methods in a rationally oriented industrial setting and, therefore, using such methods requires adjustment and pre-work. Some studies have been done in organisational context with professional actors (e.g. Larsen & Friis, 2005), but in the case of this article the organisation representatives wanted to test and learn embodied design methods themselves. The first day of the workshop was used to introduce the participants to the workshop topic and goals. According to the participant comments after the workshop day, it is important to have a common understanding and clear goals for the workshop. The methods used need to be in connection with the overall service design process and serve a purpose in each step where they are used. One of the participants concluded: *“we don't need a very detailed vision and mission, but we need a common goal, and a shared goal, what we want to reach--.”*

When the participants know, what are the desired outcomes of the workshop it is easier to understand also why such methods as embodied design can help to achieve those goals. The workshop facilitators commented that in order to use theatre and drama successfully in an industrial service design context, it is mandatory to have shared goals for the methods, but also the commitment of the participants. In industrial setting the workshop organizer and facilitators are not necessarily the same people. The workshop organizer's role becomes important when the setting of the workshop is created through understanding of the process, used methods, shared goals, and through the involvement of required stakeholders. These factors create a stable ground for using the embodied methods successfully.

One of the challenges with creative methods is that it might require a lot of convincing at first to get the participants involved in using the methods. In this case, the familiarity of the embodied design methods varied between the participants due to their backgrounds, and therefore the clear argumentation of methods' benefits was needed during the workshop. According to the workshop facilitators, the used terminology might have a significant influence on how the methods are perceived. Instead of saying 'theatre', the methods might need to be explained as 'co-design' or 'design thinking' in order to find a suitable response from the participants.

In an industrial environment where engineering and business are the most familiar sources of argumentation, the soft qualities and strong human-centred view that embodied design methods support, may cause resistance as they are not seen as relevant as, for example, numeric data. When choosing the methods for an industrial service design process, different variables such as used time, resources and costs, need to be considered, as well as whether the method will bring the most value in the given situation. This also means that embodied design methods might not be the right choice for all of the situations in the industrial service design process.

In the case workshop, as well as through previous cases in SINCO, it has been noticed that even though the methods might have been unfamiliar for the participants, being involved in the process through one's own body creates a new kind of relationship to the topic. In the case workshop, this was sometimes realized as emotionally heated discussions, but also as moments of discoveries when topics were transformed from paper into action and experiences. Going through the addressed topics as bodily experiences made the participants take ownership of the project, which is important for the success of the next phases of the service development in the organisation.

5.2 Production of data through embodiment

Throughout the workshop several embodied design methods were used to reflect on and learn about the customer's point of view in connection to the developed service. In the interviews, the participants expressed that they felt getting a better understanding of the customer's needs, experiences and expectations through embodiment. Getting an embodied experience of the user's world helps the participants to create empathy towards the user (e.g. Rontti et al., 2012). According to one of the workshop facilitators: *"theatre methods are a naturally suitable tool for learning about the human experience and the experience of a process."*

Based on the participant comments after the workshop, embodied design methods made it possible to reflect on the pre-collected user data, but also to generate new insights during workshop elaborating on the existing customer data and analysis. During the idea generation and conceptualization phases the workshop focused on simulation and role-play at SINCO stage. Simultaneously, the participants documented the outcomes such as ideas, requirements and raised questions on a service blueprint. In this way, the results of the experiments became concrete rapidly. The used role-play methodology supported the embodied experience of the services, and when aided by documentation, it gave simultaneous results that could then be used immediately for the next workshop steps such as building a new service blueprint. One of the case company's team members concluded: *"I think we were strongly bodystorming and transforming and generating new thoughts, because of the role-playing throughout the scenarios provided great amount of data."*

The combination of role-play and the generation of data by observation and reflection were seen as a powerful way for producing qualitative data for the service development. In this method, the perspective of the customer is coming alive through the pre-gathered user insights taken into the role-play, and by combining it with the personal experiences and expert knowledge of the workshop participation, a wide selection of insights can be generated and documented. Experience through the case workshop shows that generating a large amount of qualitative data for instant use is one of the core values of embodied design methods. To be successful in it requires the availability of customer insights and the involvement of right stakeholders to bring in the knowledge and expertise needed to develop the service further.

5.3 Embodiment as a catalyst for change

In industrial service design cases, the stakeholders may be various and from different backgrounds. Therefore, the challenge for the project owners is to get all the stakeholders involved, but also in a right way, and in the right stages of the process. It may not give the best benefit to have all the stakeholders in a co-creation workshop, but rather allows to keep everybody in the communication loop giving the stakeholders a chance to feel part of the process and of having a relevance in it. One of the team members described the situation: *"-- we have a lot of stakeholders, which means also a political layer, which is also customer-centric, but lots of them have ideas and opinions and aspirations. And I think in these terms, service design might have the next level to be taken to, how to connect these ideas and concepts."*

In this case, it was important that the used methods also supported the internal communication after the workshop. It is essential that the outcomes from the embodied methods are concrete and shareable, for example, in a format of a video or a visual documentation, so that they can be communicated also inside the organisation and for people who have not participated in the design process. The internal visibility and commitment from the stakeholders are crucial for the success of an industrial service design process as it gives the project owners the power of advancing the process. Project owner said: *"we have to somehow find a way to explain it (results) to them (stakeholders), to make them feel being part of the change process, and see the good about it, and get the feeling, hey we are part of a good story--."*

In the workshop case, it was evident that embodied design methods can help concretizing the complexity of the case and therefore form a base for a shared understanding. In order to create

valuable services, it is important to understand the needs of the customer, but it is equally important to have an extensive understanding of the organisational landscape around the developed service. *"It is also about strategic positioning within the company, how do we position ourselves..."*, said the team leader of the workshop case project. By having a clear vision of the project strategy and of the involved stakeholders and their needs, the project team is able to generate change that is needed to get the industrial services developed for the customers. Through a shared and embodied understanding, embodied design methods can support this change. The workshop participants saw that service design and embodied methods can help them to gain a more holistic understanding of the customers as well as stakeholders and to position themselves in the organisation strategically. Therefore, they have also been able to take the next steps and make decisions that are needed for the success of the planned service.

The workshop case was part of an industrial service design process in a large organisation, and due to the size of the organisation achieving change might be rigid and time consuming. One of the workshop goals was to provide new tools and ways of working by utilizing service design and embodied design methods inside the organisation. Giving perspectives for more human-centred view by emphasizing the embodied experiences, the learned methods in the workshop were showing change in communication within the team and in the models of collaboration. By focusing on action instead of discussions, the participants were able to get into a mode of teamwork that involves a lot of engagement and the exchange based on pre-collected user insights rather than personal opinions. Embodied design methods can help an industrial service design project teams to humanize the process with the strong customer focus and the utilization of so-called soft data that is produced through the embodied engagement in the design process.

6 Conclusions

Based on the experiences from the design case and previous SINCO cases, if embodied design methods are chosen as a part of industrial service design process, they need to be in a strong connection to the service design sprint process. The methods support shared understanding through embodied experiences, and therefore it was seen that a strategic positioning and the steering of change can be facilitated with these methods. Embodied design methods emphasize the human-centeredness in a process that in other parts might be heavily influenced by the industrial context and traditional views on quantitative evidencing for project decisions. The design case shows an example how embodied design methods can be utilized as catalysts for an industrial service design process by producing large amounts of qualitative data. This data can then be used in the service development, but also by getting key stakeholders emotionally engaged in the process and to promote the new way of working inside the organisation. A large and layered group of project stakeholders can be involved in the process by sharing the experiential insights and solutions, which can make the commitment of stakeholders stronger.

In industrial context, embodied design methods still play a role of a stranger, and convincing the project stakeholders to adapt those methods might need time and effort. The findings of this case are not radically new, but rather they describe the current situation in the manufacturing organisations and how embodied ways of working can be catalysed in them. It was shown, in the workshop and in the continuity of case project, that the embodied methods make the *understanding* of service context more experiential and therefore allow the project team and stakeholders to form a shared vision and goals for the service. The methods also support the *generation of qualitative and human-centric insights* that reflect the collected qualitative and/or quantitative user data. This way, the introduction of embodied methods also spark new ways of using existing data as well as new ways of working together. This means moving from meeting rooms to workshop environments. The methods help to embody 'second hand' user insights produced in the workshop and make them come alive through the enactment of the participants. By role-playing the user experiences, the workshop participants in the design case, took ownership of the presented topic, started

transforming the insights and built their own knowledge about the user. On top of that, the design case showed that embodied design methods can help the project team to *position themselves and the project strategically inside the organisation* by reflecting on the gained insights and understanding of the organisational context and culture. The strategic positioning can support the steering of change, and the ability to use the power in the organisational politics so that the project will proceed successfully.

The implementation of embodied theatre methods in an industrial context requires a setting of a solid ground. It starts by ensuring that the methods are replicable in the organisation and that there is sufficient facilitation knowhow as well as the required commitment for the use of the methods. It was evident during the case that an environment that provides support for creativity and embodiment, for example, in a form of a laboratory or a stage, can be helpful in the adaptation and utilization of the methods. An open attitude and the ability to see a big picture with a strategic vision, allow project teams to locate the embodied design methods in their design process. This way, it is possible to plan and develop meaningful steps of progress in order to bring the biggest value to the project. Finding the right way of integrating embodied design methods in and with the organisation may be constrained by the organisational bureaucracy, but concrete outcomes and real examples make the argumentation for the needed changes easier.

7 References

- Berry, L., Zeithaml, V., & Parasuraman, A. (1985). Quality Counts in Services too. *Business Horizons*, Vol 28, May-June, pp. 44-52.
- Blomkvist, J. (2014). *Representing future situations of service: prototyping in service design*. Doctoral dissertation. Linköping: Linköping University Electronic Press. Available at: <https://liu.diva-portal.org/smash/get/diva2:712357/FULLTEXT02.pdf> [Accessed 7 Apr. 2017].
- Buchenaus, 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.
- Design Council (2007). 11 Lessons: Managing Design in Global Brands. *Design Council*. Available at: <http://www.designcouncil.org.uk/resources/report/11-lessons-managing-design-global-brands> [Accessed 7 Apr. 2017].
- Eyal, N. (2014). *Hooked: How to Build Habit-Forming Products*. New York: Penguin.
- Gray, J. (2013). Servial: The servitisation of manufacturing. *The Manufacturer*. Available at: <http://www.themanufacturer.com/articles/servial-the-servitisation-of-manufacturing/> [Accessed at 8 Mar. 2017].
- Grove S., Fisk, R., & Dorsch, M. (1998). Assessing the Theatrical Components of the Service Encounter: A Cluster Analysis Examination. *The Service Industries Journal*, 18(3), pp. 116-134.
- Grove, S., Fisk, R., & Bitner M. (1992). Dramatizing the Service Experience: A Managerial Approach. In: T. Swartz, D. Bowen & W. Brown (Eds.), *Advances in Services Marketing and Management*, Vol. 1, pp. 91-121.
- Grönroos, C. (1985). Internal Marketing - Theory and Practice. In: T. Bloch, G. Upah & V. Zeithaml (Eds.), *Services Marketing in a changing environment*. Chicago: American Marketing Association, pp. 41-47.
- Guidat T., Barquet, A., Widera, H., Rozenfeld, H., & Seliger, G. (2014). Guidelines for the Definition of Innovative Industrial Product-service Systems (PSS) Business Models for Remanufacturing. *Procedia CIRP*, 16 (2014), pp. 193-198.
- Gärtner, C. (2013). Cognition, knowing and learning in the flesh: Six views on embodied knowing in organisation studies. *Scandinavian Journal of Management*, 29(4), pp. 338-352.
- Harris R., Harris K., & Baron, S. (2003). Theatrical service experiences Dramatic script development with employees. *International Journal of Service Industry Management*, 14(2), pp. 184 - 199. Available at: <http://dx.doi.org/10.1108/09564230310474156> [Accessed 8 Mar. 2017].
- Iacucci, G., Kuutti, K., & Ranta, M. (2000). On the Move with a Magic Thing: Role Playing in Concept Design of Mobile Services and Devices. *Proceedings of the DIS2000, Designing Interactive Systems*. New York City, USA: ACM Press, pp. 193-202.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: Chicago University Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. New York: Basic Books.

- Larsen, H., & Friis, P. (2005). Theatre and Social Change. In: P. Shaw and R. Stacey (Eds.), *Experiencing Risk, Spontaneity and Improvisation in Organisational Change*. London: Routledge.
- Lay, G., ed., (2014). *Servitization in industry*. Zurich, Switzerland: Springer.
- Lightfoot H., Baines, T., & Smart P. (2013). The Servitization of Manufacturing: A Systematic Literature Review of Interdependent Trends. *International Journal of Operations & Production Management*, 33 (2013), pp. 1408-1434.
- Lin, M. (2000). *Boundaries*. New York, NY: Simon & Schuster.
- Merholz, P., Schauer, B., Verba D., & Wilkens, T. (2008). *Subject to Change: Creating Great Products and Services for an Uncertain World*. Sebastopol, CA: O'Reilly Media.
- Meyer, C., & Schwager, A. (2007). Understanding customer experience. *Harvard Business Review*, 85(2), pp. 117–126.
- Miettinen, S., Rontti S., Kuure, E., & Lindström, A. (2012). Realizing Design Thinking through a Service Design Process and an Innovative Prototyping Laboratory – Introducing Service Innovation Corner (SINCO). In: Israsena, P., Tangantikul, J., & Durling, D., eds., *Design Research Society 2012: Bangkok. Conference Proceedings: Volume 3*, pp. 1202-1214.
- Morelli, N. (2002). Designing product/service systems: A methodological exploration. *Design issues*, 18(3), pp. 3-17.
- Morelli, N. (2003). Product-service systems, a perspective shift for designers: A case study: the design of a telecentre. *Design Studies*, 24(1), pp. 73-99.
- Oulasvirta, A., Kurvinen, E., & Kankainen, T. (2002). Understanding the context by being there: case studies in bodystorming. *Personal Ubiquitous Computing*, 7, pp. 125–134.
- Penin, L., & Tonkinwise, C. (2009). The Politics and Theatre of Service Design. *Proceedings of IASDR 2009, Rigor and Relevance in Design*, 19-22 October, Seoul.
- Poulsen, S., & Thøgersen, U. (2011). Embodied design thinking: a phenomenological perspective. *CoDesign*, 7(1), pp. 29-44.
- Rontti, S. (2016). The SINCO lab concept - Agile technology-aided experience prototyping toolkit. In: S. Miettinen (Ed.), *An Introduction to Industrial Service Design*. Oxon and New York: Routledge, pp. 124-129.
- Rontti, S., Miettinen, S., Kuure, E., & Lindström, A. (2012). A Laboratory Concept for Service Prototyping – Service Innovation Corner (SINCO). *Proceedings of SERVDES2012, Service Design and Innovation Conference*, 8-10 February 2012, Laurea University of Applied Sciences, Espoo, Finland.
- Roy, R., & Baxter, D. (2009). Product-service systems. *Journal of Engineering Design*, 20(4), pp. 327-328.
- Styhre, A. (2004). The (re)embodied organisation: Four perspectives on the body in organisations. *Human Resource Development International*, 7(1), pp. 101-116.
- Vargo, S., & Lusch, R. (2004). Evolving to a new dominant logic for marketing. *Journal of marketing*, 68(1), pp. 1-17.
- Weir, T. (2015). The theatre of designing within organisations. *Proceedings of the Participatory Innovation Conference 2015*, The Hague, The Netherlands, pp. 60-65.

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