Service co-design with the public sector – Challenges and opportunities in a healthcare context

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Abstract
Recently design competence has been applied for tackling complex societal challenges. In the context of healthcare service, design competence is especially appreciated in integrating multi-disciplinary professions, providing a solution-oriented platform, and placing everyday people’s experiences at the centre of the collaboration. As the co-design tools and mindsets have entered this emerging field of designing for public services, challenges are also reported due to unfamiliarity and cultural differences. In this paper, we present challenges and opportunities of co-designing services with public sector, focusing on two cases of a healthcare service in Finland. Our co-design approach in example cases is based on an empathic design tradition, which allows a human-scale and inclusive perspective towards various stakeholders in a service network.

Keywords
Co-design; services; public sector; healthcare; public service

Introduction
Design has been recognized as a potential discipline for dealing with current society’s complex problems, such as aging population or increased chronic illnesses. We see more and more cases in which groups of designers explore better future scenarios by applying design thinking and public organizations are motivated to apply design approaches for developing services. As Cottam and Leadbeater [5] emphasize, design competence in the context of complex societal challenges is valued for providing a solution-oriented platform for multidisciplinary professions’ collaboration and for creating an integrated perspective on social, economic, and ecological sustainability. Especially the emerging approaches of co-design and co-creation [14] start to suggest new ways for designing for public services.

In the meantime, however, challenges are reported when it comes to co-designing with public sector. Some of the fundamental barriers for applying co-design in the public sector include the fear of novelty and avoidance of risk-taking [2, 7]. The hesitation results from the lack of experience and skills in managing creative collaboration. The organizational culture in public sector hinders people from experimenting and seeking
innovative solutions. Healthcare and social services are subject to a conventional organizational culture that is unfamiliar to experimental and trial-and-error-type approaches. This is problematic since they are core components of contemporary innovation and design activities. Because of this, it is of great importance that designers pay more attention to the conventions of public sector [9].

In this paper, we present how co-design practices, tools and mindsets can be applied when designing for public healthcare and social services through two cases from Finland: Rethinking senior services with a municipality and Designing healthcare services in a regional hospital. Discussions in this paper focus on opportunities and challenges of co-designing services focusing in particular in two public sector representatives and lay out important issues to consider for future projects.

Co-designing with Public Sector

Co-design in this paper refers to a process of collaborative knowledge sharing and knowledge creation, driven by a belief that everybody is creative and can contribute to design when provided with proper tools and settings [14]. In this paper we focus on two main capabilities of co-design for a public service context: First, the co-design approach can facilitate creative collaboration among different partners within public sector, such as units and departments that influence the decision-making processes but had not necessarily encountered each other in their conventional practices; second, it can bring in citizens’ everyday experiences and ideas into the decision-making processes.

The co-design approach should encourage all participants, from designers to participating stakeholders who are co-designers, to be open and empathetic towards other people’s points of view and experiences. The co-design processes in this paper build on the empathic design tradition [10], which applies holistic and human-centred approaches for understanding end users and service providers in complex service networks. Empathic design initially started with designers’ need to better understand users’ experiences and to envision design opportunities through that understanding. More recently, principles of empathic design have been used in new contexts such as supporting collaboration in networks. Then the aim is to help various stakeholders to build empathic understanding of each other and ask “what if” questions [13]. The co-design and empathic design approaches, however, are not familiar to the decision-making culture of the public sector. This unfamiliarity causes confusion and uncertainty about the relevance and feasibility of design insights in the development and communication context of public services.

Bailey [1] has addressed the complexity of applying design approaches in a public organization. He calls an organisation's capacity to absorb design thinking and methods into their practices as design readiness: “Design readiness can be a measure of awareness and the potential to embed design, but design readiness also needs to become design practice and develop cumulatively within the organisation if it is to change the working behaviour in a sustainable manner.” Similarly, Bason [2] also emphasized that moving towards public sector innovation implies specific challenges and tasks for public leaders at all levels: from politicians, chief executives, mid-level managers to the heads of institutions. Bailey [1] also noticed that differences in
vocabulary are one of the barriers when trying to embed design thinking and processes into the public organization. He emphasizes that it is insufficient to introduce design tools and methods without equipping people with a common vocabulary that builds confidence when understanding and communicating the use, the process and the outcomes of these new tools.

We are sympathetic to the arguments of these authors. They imply that designers should remember that developing and applying design-based, human-centred approach in the public sector is a radical innovation as such, and requires a change in culture and behaviour, time, resources, and support from the management. Our cases described in the following sections illustrate this complexity of co-designing with public sector, and focus on healthcare and social service contexts. The first case introduces a setting in which design students applied empathic design and co-design to propose alternative solutions for senior services to a municipality. The second case is an example in which service design methods are introduced to a public unit for developing the organisation and services through collaborative learning as well as co-creating solutions and new designs.

Case 1: Rethinking Senior Services with a Municipality

‘Rethinking senior services’ was a one-year project (2012) between Aalto University School of Arts, Design and Architecture and the municipality of Kauniainen. This project was part of World Design Capital 2012 Helsinki, which aimed to promote design as part of people’s everyday life. The goal of the project was to design for services that address senior citizens’ wellbeing in the local region through the application of service co-design and concept design. In this paper, we focus on the diverse meanings of service co-design, for example as a way of framing problem areas, as a decision-making tool, and as a trigger for provoking discussion.

The project included three sub-projects that had a shared aim of developing ideas for senior services to be provided by the Villa Breda service centre in Kauniainen. The students were encouraged to explore what wellbeing means, and look beyond the traditional healthcare services into cultural services and social interaction, to give a few examples. Accordingly, the new services were not limited to elderly people only but could cater a wide rage of customers. While working on the project, the students were trained for empathic design and co-design approaches and skills. Empathy was considered as a helpful vehicle for project stakeholders to understand individuals’ wellbeing as personal experiences rather than a stereotypical or an average model.

Framing by co-designing

To identify relevant problem areas for design is especially challenging when working in a complex product-service system like the one of public services [17]. The students started to explore the topic from the given project outline and framed alternative interests based on their observations and empathic insights. The alternative interests were presented as design concepts [8]. In addition to the possible solutions, the design concepts also reflected on the different framings of the problem areas. In this way they directed
towards rethinking directions for the future development of the public services in Kauniainen.

To frame problem areas relevant to local residents, the students first did field observations and interviews by visiting various places, including different senior centres. Next they organised several co-design workshops with seniors, younger citizens, healthcare experts and local politicians. In these workshops, the students first introduced their interpretations and initial ideas based on the preliminary observations. Second, the participants were divided into small groups to give feedback and develop possible solutions together (Figure 1). Several co-design techniques were applied especially to bring senior people’s everyday experiences and perspectives in the collaboration setting: For example, generative tools [15] were applied to let seniors express their felt-experiences through image collages and design games [4, 16] for triggering and sharing stories and opinions of the participants.

The co-design workshops gave first-hand experiences of applying design thinking and methods for the participants from the municipality. They were very keen on participating in the co-design events to contribute their voices but also quite critical when the topics introduced were not considered relevant in their daily lives. Recognizing the responses from the participants led the students to reframe their focus on citizens as resources for the local society instead of mining problems to be solved on their behalf. An example of one of the proposed services, called *Heimo*, is a platform for senior citizens to initiate various activities and to open them for a wider audience.

As this case illustrates, an open-ended starting point of the future service development requires continuous and iterative reframing of problem areas, which differs from traditional problem specification. In this project, the co-design approach initiated this type of collaborative reframing of design opportunities.

**Provoking discussion by concept design**

Some design activities and outcomes from the project do not only serve as suggestions of possible services but also can be seen as “provotypes” [3], aiming at evoking debates and challenging people’s preconceptions. In this project, some radical design ideas from the co-design workshops served to provoke discussions among the citizens and the
municipality people. For example, one design idea, called AVAdate, is a digital dating service, where seniors can meet people as avatars in a virtual game space and create new relationships. It was discussed in the co-design session that there is often resistance from family members if senior persons fall in love and start a new relationship, while one of the reasons for the high number of suicide is solitude. The design concept was visualized through several service evidences such as web pages, user scenarios, and marketing brochures when presented to local people and healthcare experts. It was, however, difficult to gain constructive feedback because the concept was so radical to people from the healthcare and social sector and clearly against a stereotypical image of seniors. First of all, it straightforwardly faces an implicit social taboo of seniors having a new love relationship in old age. Secondly, it is an online service with avatars, which can be considered ill-fitting for the elderly.

Although this kind of a radical concept is considered far from a feasible idea for implementation, we believe that it plays a crucial role in uncovering and breaking prejudices and in opening up new perspectives to senior services, thus possibly creating a bigger impact in the long run. It then requires a considerable effort to facilitate constructive conversations, because people from public sector can have difficulties in accepting ambiguous, experimental, and radical concepts.

**Visualizing alternatives for decision-making**

The design concepts created in the project diverged from practical and easy-to-implement ones, such as improving existing transportation services or building a new community kitchen for elderly, towards future-oriented concepts, such as a digital service for memory storing or an elderly village with activities and shops exclusively built for elderly. Communicating ideas that reflect alternative future scenarios can assist in the municipal decision-making process through provoking discussions on whether such directions are desirable or not. At the same time they might open new pathways towards alternative but desired futures. This role of and the reasons for concept design explorations have been already acknowledged in industrial context when developing new products [8]. However, in the public sector this type of innovation culture is still new [2].

In the municipality of Kauniainen, many decisions needed to be considered in relation to the ongoing development of the town, and especially for the rebuilding of the senior centre called Villa Bread taking place within the next couple of years. Through the concept design process, the students offered insights into possible themes to take further. They concretised the service design concepts to serve as tools for health experts and municipal politicians for envisioning and negotiating on ‘what a future service centre for the elderly should be like?’

Many of the design concepts focused on social interaction as a key value for seniors’ wellbeing. For most seniors, opportunities for building meaningful social interactions with others are rather limited because of their physical and mental capabilities. The students proposed various approaches for addressing this challenge. Some of them included supporting senior people to spend more time with younger generations or meeting people while taking care of daily tasks. Comparing these to the conventional services from Villa Breda, which are for example health check-up, care giving and various medical treatments, the alternative solutions that were suggested by the project question
whether the conventional services are enough. In other words, design concepts are tools for rethinking and decision-making for the city management through concretising different service ideas, points-of-view and critical topics.

Case 2: Designing healthcare services in a regional hospital

The second case, ‘Designing healthcare services’ was a collaboration between the Aalto University School of Arts, Design and Architecture and Tampere University Hospital (2011-2012) (discussed in more detail in [11, 12]). In the project, the aim was to utilize design methods to support the vision of placing patients in the centre of hospital activities. This vision followed the patient-centred care approach. During the project various design methods were introduced in the hospital environment and a few key persons were trained to use of service design methods. Through this case we discuss the challenges of embedding service design within the larger frame of healthcare service development and the importance of change agents that possess management support in large organizations.

The case consists of two pilot projects that were carried out in consecutive years. The first pilot introduced service design as a way of approaching the development of specialized sarcoma-type cancer treatment in the hospital. During the project, a staff member undertook service design training and worked as a pair with a design researcher. The case resulted in several strategic and tactic improvements to the treatment process as well as three larger concepts that were further developed and implemented in later projects. In addition, the first case built the capability base for continuing design work independently in the hospital. The second pilot case, ‘cardboard hospital’, was a prototyping exercise in which ideas for future hospital environments were created and tested in a specifically built prototyping environment. The focus of this case was to challenge established ideas of hospital design through rapid prototyping of ideas and a strong presence of patients in the planning activity. The case resulted in several ideas for patient-centred spaces and their uses that the new hospital could support.

Pilot cases prove the value of design

Hospitals as working environments can hardly be described as agile or opening up to new ideas beyond medical competence. They operate in a vertical decision-making structure in which decisions that are made high up in the command chain are trickling down to the operational level. Resources are tight so decisions on resource spending are subject to close scrutiny. Suggested changes are expected to be scientifically or otherwise proven to work before they are given permission. While this might seem to ensure a rigid and fail-safe operation, in practice this approach often stifles innovation and creates a heavy bureaucracy which demotivates employees.

In this light, a design-based approach can seem a risky but refreshing way of creating something new. Even though the aim in this case was to introduce new ways for developing care, the starting point had to be something that was limited in scope and where results could be evaluated quickly. Early success stories can be communicated within the organization where they build more momentum for expanding the scope.
When finalized, the pilot cases are used as a model onto which further cases can be based and which can be adjusted and further developed later on. In this case, the work done in the sarcoma case was received well in the organization and the results, one of them being a specifically designed process game board (Figure 2), were quickly disseminated within the organization.

Figure 2: (left) patient game board; (right) cardboard hospital

During the process, many stereotypes about patients were changed when the staff and patients were placed on the same side of the table instead of opposing each other. In our follow-up interviews a few nurses mentioned that they were surprised to find that the patients often wanted the same things as the staff did. Being in direct contact with patients who are describing their views, which often relate to basic human needs, builds empathy within the staff and helps them adopt a more encompassing approach to their work. Following these early successes, similar design processes have already been started within other treatment lines while several ones are queuing for their chance.

**Physicality and playfulness for creative collaboration**

Even though the act of health care is a highly physical and emotional activity, often the planning of healthcare processes is disembodied and highly rational. Due to non-participation of patients, the focus of development discussions is often on issues such as process efficiency, patient safety or internal collaboration. Co-design can offer an opportunity to develop patient-centred care in a way that starts from the experience of patients and works form there down to the processes, methods and practices that make this experience possible.

Through embodied practices of design such as utilizing physical props, drawing or enacting avoids abstractions and keeps the discussion at a concrete level from which the decisions on what to change are easier to derive. At the same time, the focus on the patient experience makes it possible to discuss ‘serious’ and ‘playful’ solutions without overriding either one. For example, the patient game board describes the patient process of going through cancer diagnostics and treatment, while managing to show it using a playful and aesthetic game metaphor.

The ‘cardboard hospital’ was designed in collaboration with a set designer to provide an environment in which participants could engage in discussions that cross over from playful issues such as how to have fun in a hospital environment to questions on how to arrange the delivery of care as efficiently as possible (Figure 2). During the workshops we observed very few polarizing arguments, which we attributed partly to the ability to try ideas out in action. An example of such situation happened in one of the workshops that dealt with a new concept for operating theatres in which one large hall would combine
several operating tables, earlier situated in separate rooms. One of the key concerns was the question of noise created in staff interactions around the operating tables. The debate was resolved when the participants in one group noticed during prototyping activities that they were not paying attention on the other groups’ discussions at all. Similarly, hospital staff or other professionals often interpret the needs of patients as something ‘extra’ that needs to be added on top of the designs. Instead, prototyping proved that many of the ideas coming from patients could be incorporated into the designs of the hospitals when they are discussed and prototyped early enough together with other stakeholders.

Building capability in the organization for sustaining activities
The key hospital members in the design process are currently working semi-independently with new development cases, while the role of the designers has moved from a driver to that of a supporter. This is done to assist the organization to scale up their activities from individual cases towards processes of engaging in continuous innovation. Patient workshops, contextual research and co-creation workshops have been successfully led by hospital members who have previously participated in the design activities. Thus it is important for professional designers to realize when working with the public sector that, in addition to the design results, they are also building capabilities in the organization for the future. Good documentation of the work, close working partnerships with the staff and talks or training held within the organization all build towards the capability of a design-led organization. Nevertheless, the organizations still need support in traditional design skills such as visualizing or modelling and the insight into their organization through involving outside partners.

Discussion
Empathic approaches in design aim at searching and considering the topic of scrutiny from different viewpoints, and at the same time emphasizing experiential and human-scale perspectives. In both cases, the participants appreciated that everyone had an equal voice and different standpoints are valued and taken into consideration. Reflecting on the cases, five opportunities can be discussed for applying co-design in the public service development:

First, explorative thinking and making in design can trigger decision-makers in public sector to rethink their current viewpoints and practices. Design concepts and scenarios can serve as decision-making vehicles that propose alternative focus areas and new service opportunities. The solutions can be provocative and cause confusion, but in such confusion, they might be able to resonate and reveal meaningful perspectives that have not been considered. However, as mentioned earlier, the success of this approach depends on design maturity and the role of the change agents in the organisation.

Second, the co-design approach offers a platform for public sector representatives and citizens to physically meet, share and negotiate their perspectives. In the first case, co-design events allowed seniors, other citizens, healthcare experts and local politicians to meet together and build a discussion triggered by students’ ideas. In the second case, the co-design setting was carefully designed to provide a playful and creative environment where doctors, service providers, and patients have equal power and opportunities for dialogue.
Third, empathic design tools used in the collaboration context, such as image collages, narratives, and a customer journey board, help bringing personal experiences of citizens into a public service development. The stories and opinions shared by the seniors in Kauniainen were resources for design concepts that were delivered to the municipality. In the hospital design case, the patients’ experiences pinpointed the meaningful elements for the patient-centred development.

Fourth, tangible tools and props used in the co-design setting provided non-designers and people from the public sector with things-to-think-with and helped them envision and articulate what could be desirable in the future. The physical setting and tangible elements in the cardboard hospital are good examples.

Lastly, through the considerations above, the co-design approach can help building trust among various stakeholders by bringing them face-to-face in co-design events that have carefully designed structure and materials.

While the approaches of empathic design and co-design have opportunities for public service design, a mindset that is experiential, human-scale, experimental and iterative is still foreign to most people working at public sector. This unfamiliarity could hinder decision-makers in the public sector from having an open, flexible mind and recognizing meanings of the design concepts for the future. In the hospital design case, there was an initial conflict from healthcare professionals towards designers. Professionals working in a specialized field, such as healthcare, were concerned that designers would intervene their practices and ideas without having deep knowledge about the field. After participating in the co-design process, however, they realized how designers actually work as a bridge between different perspectives and a facilitator for the participants to create ideas instead of giving ready-made solutions. To recognize the actual roles of designers in the co-design process also requires experiences and time.

How to take co-design project outcomes into further discussion and even to implementation in an organization is another complex issue. The two above-presented cases addressed this issue differently. In the first case, the project was set aside organisations’ everyday practices. The design students were allowed to explore solution spaces with a wide perspective and to create diverse outcomes that pinpoint many important topics for citizen-centred services. However, there was no agent from the organization committed to take the ownership or responsibility of further developing the ideas. On the contrary, in the second case, there was a ‘change agent’ from the hospital who was motivated to bring changes and committed throughout the project. The role of an internal agent in the organization is of great importance when developing the service ideas in a sustainable manner.

**Conclusion**

Every transformation process demands time and resources. Embedding a human-centred, creative collaboration culture in public organisations is not different. Service co-design with public sector is a new and actively growing area. Gaining insights and disseminating knowledge through participatory action research [6] will nurture, on one hand designers to shape their approach and tools to better collaborate with public sector, and on the other hand people in the public sector to have a more flexible mindset.
to recognize the value of citizens’ knowledge and the experimental approach. As the two different cases in this paper depict, strategies, tools, and outcomes differ according to different contingencies of the project. Based on our findings in this paper, we will continue with mapping challenges and corresponding approaches according to different project contingencies as our further work.

References

2. Bason, C (2010). Co-creation is Key to Innovation in Government. Ipsos MORI Understanding Society/winter 2010, 14-17