

Living Lab's One-Stop-Shop Services in the Development of Remote Services in Public Sector

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Abstract

This paper presents an example of a Living Lab, OULLabs' one-stop-shop service, the remote-enabled public service development project. The project, conducted in cooperation with the City of Oulu in 2013, brought citizens, employees and authorities together to identify development needs for remote-enabled public services in three different locations in the City of Oulu, and in three other municipalities nearby. OULLabs' one-stop-shop services were used to solve the challenges in the development of remote-enabled public services. The services provided by OULLabs during this development project were service design, user studies, two separate online discussions in the PATIO forum for citizens as well as employees and authorities, and a survey using public interactive displays (UBI hotspots). One hundred and eighty users (citizens, employees and authorities) in the City of Oulu and three municipalities (Ii, Muhos and Utajärvi) were involved in the activities of the development project. This achieved the result of a positive experience of testing the one-stop shop service. Furthermore, use of multiple methods ensured reliable and comprehensive results.

Keywords

Living Lab, one-stop-shop, user involvement, user-driven service development, user experience

Introduction

This paper presents an example of OULLabs' one-stop-shop services, the remote-enabled public service development project. Remote-enabled public services (hereafter remote services) as used in this study mean public services (e.g. unemployment registration) carried out through video meeting. These remote services replace services that are traditionally provided face-to-face. The new service is easier to reach, especially for people living far away from services. In the City of Oulu, the farthest residents live as far as 80

kilometres from the city centre and public services. Thus, there has been an enormous need for remote services. The development project, conducted in cooperation with the City of Oulu in 2013, brought citizens, employees and authorities together to identify development needs for remote services in three different locations in the City of Oulu and in three municipalities nearby.

Various challenges have been identified in the development of remote services in the City of Oulu.

One of those challenges has been the different needs of the players involved: service providers (authorities and municipalities) and employees. Another challenge has been the implementation of the physical remote service point in the existing premises of a municipality and merging the new service into existing processes. As the remote service is new to the City of Oulu, it has brought challenges to all parties involved: employees, authorities and users. Furthermore, the municipalities do not have the resources, skills or competence to involve users in the development process. However, the City of Oulu considered user involvement to be an important element in the development of the remote service. On the basis of their experience of previous cooperation projects regarding citizen involvement and the use of the Living Lab approach in city processes, OULLabs' (Oulu Urban Living Labs) one-stop-shop services were seen as a suitable way in which to solve the challenges in the development of remote services.

OULLabs, located in Oulu, Finland, provides companies, public sector and research institutes with a variety of services including users, test environments and specialist services. OULLabs provides all services in one place on a 'one-stop-shop principle' for the ideation, testing and development of products, services and applications. The services provided by OULLabs during this development project were user studies, service design, two separate online discussions on the PATIO forum (www.patiolla.fi) for citizens and employees and authorities, a survey using public interactive displays or UBI hotspots (www.ubioulu.fi), and project coordination for identifying the development needs of remote services.

Theoretical Framework

A Living Lab can be defined as a network that integrates both user-centred research and open innovation (Leminen et al., 2012). Living Labs are driven by two ideas: involving users as equal co-creators with the other participants, and experiments in real-world settings (Almirall et al., 2012). Living Labs are seen as separate from other innovation approaches because of two dimensions: their high degree of realism and their high degree of user involvement (Schuurman & De Marez, 2012). Compared to, for instance, field trials or user testing, a Living Lab involves users in all stages of

Research & Development (R&D) and the product development lifecycle (Ballon et al., 2005).

The aim of service design is to create services that are useful, usable and desirable from the user's perspective, and efficient, effective and different from the provider's perspective (Moritz, 2005; Mager & Sung, 2011). Service design concentrates on the full customer journey, taking into account experiences before and after the service encounters. In particular, co-creation has been seen as an important driving force, which means involving users, employees and other stakeholders in the design process. The aim is to integrate the service from the viewpoints of those parties that are at the heart of the service experience (Mager & Sung, 2011).

The customer journey depicts how the customer perceives and experiences the service along a period of time, taking into account the phases before and after actual interaction with the service. The first step in creating a customer journey is to identify and decide its starting and stopping points (Mager 2009). It is critical to understand the meaning and importance of the user experience during the customer journey. As ISO standard 9241-210 (2010) defines user experience (UX) as, "a person's perceptions and responses that results from the use and/or anticipated use of a product, system or service", it is important to study user experiences before, during and after the use of a service or product (Vermeeren et al., 2010). When a customer interacts with a service provider (e.g. city, company, etc.) they have an experience, and the context of the use to a large extent contributes to that experience, including people, technologies and interfaces encountered throughout the customer journey. Therefore, it is important to take a multidisciplinary approach in order to achieve a rich, comprehensive and integrated view of the service experience by the customer (Teixeira, 2010).

Empirical studies

In this study, multiple user involvement methods were used to ensure a comprehensive view of the service. One hundred and eighty users (citizens, employees and authorities) and four municipalities including the City of Oulu were involved in the activities of the development project. Four different methods were used in this study: user experience

studies, service design, in-depth online discussions and a survey on large public interactive displays.

Service Design

Service design as a method enables the identification of the key elements of a service as well as links between the elements. Moreover, improvement needs for the service can be identified in order to create the service desired by its users.

In this study, service design was carried out by creating customer journey and improvement recommendations for remote services at six

different service points. Before the creation of the customer journey, 14 employees were interviewed and the existing customer journey was observed in all locations. Observation was organised so that the UX researcher acted as a customer and walked through the customer journey with the employee of the service point in as authentic a setting as possible. During the journey, the service designer observed and photographed the session. The UX researcher and the service designer analysed the collected materials. Based on the results, a common customer journey (Figure 1) and improvement recommendations for each service point were created.

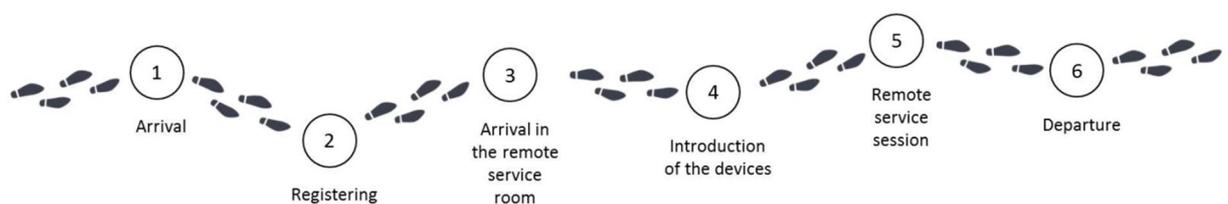


Figure 1. The common customer journey.

All six service points varied by the use and suitability of the premises, the video meeting equipment and the number of assisting personnel at the service point. The two service points in Kiiminki (Figure 2) and Ylikiiiminki (Figure 3) are presented in the figures below. These two locations are used for different purposes: the Kiiminki service

point is located in a public bureau (Figure 2) and Ylikiiiminki is mainly used as a free-time meeting point but also acts as a municipal service point for residents (Figure 3). Phases 1, 2 and 5 of the customer journey (Figure 1) can be seen in both figures (Figures 2 and 3).



Figure 2. The Kiiminki service point.



Figure 3. The Ylikiiiminki service point.

User Experience Research

User experience studies were conducted in four different locations (Ii, Kiiminki, Yli-Ii and Ylikiiminki) with 12 test users to gather more specific information about usability and the user experience of remote service, and to find out whether the users would use the service in the future. The participants' age varied from 35 to 70 years, and 58% of them were female. The participants were interviewed before and after the use of the remote service and observed during their use. All sessions were video recorded.

The test procedure followed pre-defined scenarios relating to the provided services (e.g. local register offices and building control). Each participant had a unique and as authentic as possible use case. The technology used in the test sessions varied according to the remote service points. However, in each session a video connection, a monitor and a microphone were used (Figure 4A). In addition, some participants used a document camera to show certain documents (e.g., town plan, receipts) to the service provider (Figure 4B).



Figure 4 A) The participant is discussing with the service provider using the video connection.

B) Another participant is showing a city plan by using a document camera and asking questions of the service provider (in this case the city's building control).

After they had used the remote service, the participants' experiences were collected by using the adjective selection method and the 5-point Likert Scale questionnaire (19 statements). The first version of the adjective selection method is presented by Sunnari et al. (2012) and the idea of using adjectives came from the literature (Benedek & Miner, 2002; Barnum & Palmer, 2010). In this study, the participants were asked to express their experiences by selecting three (3) out of 16 adjectives, which depict their experiences relating to the use of the service. In addition, participants were asked to write down one word or sentence about how they had experienced the service. Afterwards, the researcher discussed the experiences with the participant.

PATIO online discussions and UBI survey

The user involvement online tool PATIO (www.patiolla.fi) offers companies, organisations and research groups an easy way in which to involve users in the development of products and services. PATIO enables the recruitment of users according

to particular criteria and the collection of user experiences through online discussions, surveys and diaries, among other methods, in a flexible manner. PATIO users can participate in various development activities anytime and anywhere, and share their ideas, opinions and experiences, as well as give feedback. In addition, by participating, users also acquire knowledge and new information, for instance, about new products or local public services. PATIO has a reward points system to increase users' willingness and motivation to participate. Furthermore, users receive feedback on how they have influenced product or service development. In this study, PATIO was used for collecting the opinions and ideas of citizens, employees and authorities on remote services. Two separate online discussions were organised on the forum for two weeks: one for citizens and another for employees and authorities working with remote services. Forum moderator services were also provided by OULLabs. The first online discussion was open for everyone, for ideation and sharing opinions on remote services for public. Thirty participants were involved in the online discussion. In the second online discussion, targeted at

employees and authorities working with remote services, 10 employees and authorities shared their experiences and ideas regarding remote services.

The Open UBI Oulu

(<http://www.ubioulu.fi/en/node/91>) is a unique public city laboratory for studying human-city interactions in the real environment. Citizens use the infrastructure and services in authentic urban settings on their own. UBI hotspots, large interactive touch screen displays placed in 15 public locations around the City of Oulu, were used in this study. A public interactive quick multiple choice survey was published on UBI hotspots for two weeks in order to collect opinions on remote services from citizens who were walking by. Additionally, as UBI hotspots are commonly better known as an advertisement channel, visibility for the new service was achieved by placing an advertisement for remote services on all of the UBI hotspots around the city. One hundred and twenty-two citizens responded to the UBI survey.

Results and conclusions

Multilateral benefits were achieved as a result of the development project. The municipalities gathered recommendations and improvement ideas for further development of remote services, as well as the knowledge that there is a need for remote services. The authorities were able to pilot their remote service in an authentic setting with real users. Furthermore, they gathered experience and were able to improve the service on the basis of feedback. From the perspective of Living Lab, positive experience of providing one-stop shop service was achieved.

The service design and user experience research gave valuable information for the customer on how to develop remote services while taking into account users' perspectives. As a result, a customer journey was created in order to provide a user-friendly remote service in different locations. According to the user experience studies, participants had very positive experiences about the service and were willing to use remote services in the future as well. The online forum PATIO was perceived to be useful in increasing discussion and the commitment of employees working with remote services. Employees and authorities providing remote services were able to meet each other virtually and change their opinions as well as ask for advice in the private discussion. In another discussion aimed at citizens, residents of Oulu were able to share their opinions and needs regarding remote services. In addition to the qualitative data collected during the online discussions, quantitative data was collected through the survey using UBI hotspots. The use of multiple methods ensured the reliability of the results, as the same types of questions were placed in several channels for the citizens to view.

From the Living Lab point of view, valuable experience of successful one-stop-shop service deployment, including the use of ICT-based user involvement tools and specialist services, was achieved. We will utilise and evaluate this one-stop-shop approach in future projects as well. The results of this project may act as a reference when forming processes to involve citizens in development activities. By involving citizens in development activities, future services can better meet the needs of their users.

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