

# Three approaches to co-creating services with users

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## ABSTRACT

The role of users in service design is changing from passive research subjects to active co-designers and content creators. This new direction can be supported with inspiring physical or virtual spaces where users, designers and other actors can meet informally and participate in service design as equals. In this paper we describe three different approaches to co-creation spaces: web-based Owela, physical showroom Ihme, and Living Labs that combine both physical and web elements. We compare these approaches based on the innovation phase they are most suitable for, the methods as well as the strengths and challenges of the approaches. All the three co-creation spaces manage to bring co-creation close to the users' everyday life. Participation is quite independent of time and in Owela independent of place as well. Users can select their level of contribution, varying from short comments to long-term participation in development projects. Direct designer/user interaction supports turning the designer's mind-set from technical features to user experience. This facilitates the design of services that are accepted by and interesting to users.

**Keywords:** co-creation, user participation, service design, Owela, Ihme

## 1 INTRODUCTION

The role of users in service design is changing. Instead of passive research subjects, they are seen as active co-designers and content creators. Users are the best experts in their everyday lives and therefore have great potential as sources of innovation. User participation can affect the success of services directly by better quality, fit to needs and innovation speed. The effects can also be indirect such as

more customer-centered image, customer-driven organizational culture and increased motivation of employees.

Today, human-centered design is quite an established practice for designing products and services so that forthcoming users are represented in the design process (ISO, 2010). Human-centered design starts once the decision to design a certain kind of service has been made. To increase the users' role in design and innovation, we should increasingly involve them in deciding what is needed and what kinds of services should be designed for them and with them. Kanstrup and Christiansen (2006) describe this change as changing the user's role in design from a victim who needs support to a valuable source of inspiration.

Co-creation stresses the collective creativity of all stakeholders including end-users (Sanders and Stappers, 2008; Prahalad and Ramaswamy, 2000). A crucial factor for the success of service development is the performance in the early stages of the development process, that is, the 'fuzzy front-end' in which the targeted service has not yet been decided (Khurana and Rosenthal, 1998). User participation could be especially useful at this stage due to its high level of uncertainty and low formalization (Alam, 2006). In addition to ideation, user participation 'at the moment of decision' is attracting increasing interest (Sanders and Stappers, 2008).

In traditional human-centered design, only small numbers of users have been involved in the design activities. New methods are needed to reach the masses of potential innovators. Computer-supported methods for co-creation are promising (Sawhney, Verona and Prandelli, 2005; Schumacher and Feurstein, 2007) but also new kinds of face-to-face collaboration methods are needed.

Co-creation in service design is usually referred to as *value co-creation* (e.g., Lusch and Vargo, 2006; Vargo and Lusch, 2008), which is an integral part of the paradigm called service-dominant logic. In service-dominant logic, value is always determined by the beneficiary (e.g. customer) of the service. This means that companies can only offer value propositions to their customers and actual value is created collaboratively, making customers co-creators of value. Lusch and Vargo (2006) also acknowledge the customer participation in the development of the core offering itself and view it as a component of value co-creation; however they call this co-production. Kristensson et al. (2007) also suggest that co-creation includes two ways of collaboration: value co-creation and co-production, the latter also leading to value-in-use but in a more indirect way. In this paper we use the term co-creation similar to Kristensson et al. when referring to user-involving approach in the innovation of services. We use the term co-creation instead of co-production to emphasize the creative nature of end users' participation.

Co-creation of new services requires approaches that support collective creativity. As design has shifted from work to leisure and pleasurable engagements (Björgvinsson et al., 2010), easy and effortless participation has become increasingly important. The design should happen close to the use context in order to give the users a familiar context to act and the stakeholders a real life experience of use context (Buur and Bødker, 2000). According to Ainasoja et al. (2011), co-creation of services requires clear communication of the goals, open and informal atmosphere, high quality of inspirational and background materials as a basis for

innovation, concretizing of the service in situ, documentation and sharing of ideas and notes as well as feedback of the follow-up process of the user-generated ideas. The participants should have alternative ways to contribute depending on their individual interests and competencies. Informal and equal interaction between different actors encourages contributions (Ainasoja et al., 2011).

Our vision is that co-creation can be supported with inspiring physical or virtual spaces where users, designers and other actors can meet informally and as equals. Based on the above described findings from earlier research we have set requirements for our co-creation spaces regarding context, participants, motivation and activities as described in Table 1. The table also describes the requirements we set for data analysis.

**Table 1 Requirements for the co-creation spaces**

|              |  |
|--------------|--|
| Context      | Close to use context, intertwined with everyday life   |
| Participants | Low threshold to participate, for anyone   |
| Motivation   | Brings value to all stakeholders, fits personal goals, is fun  |
| Activities   | Alternative ways to contribute, depending on participants' interests, time limits and capabilities<br>Encourages creativity and informal interaction |
| Analysis     | Agile gathering and analyzing of data with restricted time and resources<br>Continuous applying of results, iterative development                    |

In the following sections we describe three different approaches to co-creation spaces that we have been developing and using. Open Web Lab (Owela) utilizes social media as co-creation space. Ihme innovation showroom facilitates co-creation in public everyday spaces. Living Labs combine both physical and web elements and interweave design and use. We describe our experiences of co-creation activities in the spaces. Our main focus is on user participation but we also touch the viewpoints of other co-creation actors. We compare the co-creation spaces according to their suitability to different innovation activities, the co-creation methods as well as their strengths and challenges. Finally we conclude with suggestions on the suitability of each co-creation space for different innovation activities.

## **2 SOCIAL MEDIA AS CO-CREATION SPACE: OWELA**

Open Web Lab (Owela, <http://owela.vtt.fi/>) is an online platform designed by VTT for co-creation between end-users, customers, developers and other stakeholders (Figure 1). Owela is built on social media-type interaction and thus enables user participation regardless of time and place. Owela provides tools and methods for understanding users' needs and experiences as well as innovating and designing new products and services together (Näkki and Antikainen, 2008).

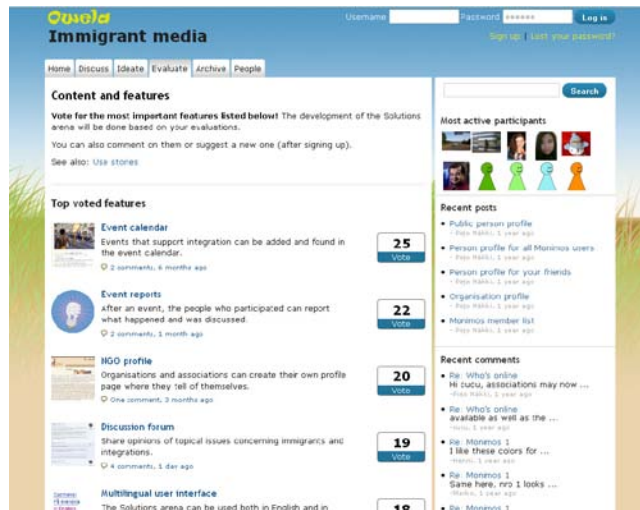


Figure 1 The Owela online co-creation platform

Over 40 different kinds of co-creation cases have been carried out in Owela. In most of the cases, ordinary consumers and citizens have had the chance to interact with companies and researchers in order to create new products and services. Most of the cases have been related to the early phases of the innovation process such as gathering information on needs, generating ideas and evaluating new product and service concepts. There have also been encouraging experiments to involve end-users in the later stages of new product and service development, especially in the software context. Table 2 illustrates some of the studies that have been carried out in Owela.

**Table 2 Selected cases of Owela co-creation**

| <i>Name of the study, length</i> | <i>Participants</i>                              | <i>Topic</i>                       | <i>Phase of the innovation process</i>                |
|----------------------------------|--|------------------------------------|---|
| Mobideas, 6 months               | 33 users, 4 developers, 2 researchers            | Social media service               | Idea generation, concept design, development, testing |
| Monimos, 1 year                  | 70 users, 5 researchers, 1 designer, 1 developer | Multicultural social media service | Idea generation, concept design, testing phase        |
| City Adventure, 1 month          | 36 users, 1 researcher                           | City adventure service             | Need capturing, ideas, concept evaluation             |
| Events, 1 month                  | 4 users, 3 developers, 3 researchers             | Mobile event management service    | Prototype testing                                     |

Users can participate in Owela studies from their own environment, whether it is at home or on the go. They only need access to internet and basic skills on social software. Owela makes participating in co-creation activities easy for users, regardless of the time and place. Owela encourages users to make micro-contributions, and thus enables contributions also from people who would not have the time to participate otherwise. Users are empowered to act as innovators, design partners and decision-makers as they are continuously connected in the innovation process. Open and transparent design processes have been achieved through Owela. With Owela, designers and developers can reach large numbers of users quickly and cost-efficiently. Owela has enabled companies to establish long-term interaction relationships with the users. The flexibility of the online co-creation platform has enabled ad hoc changes in the implementation of intensive development projects.

Owela enables different levels of participation based on users' own interest. Since most participants will not read long and complicated instructions online, Owela tasks are as short and simple as possible yet contain all the necessary information. Assigned tasks contain possibilities for micro-contributions. Most active users spend multiple hours per week in Owela co-creation and they contribute also to tasks that require more intensive participation (e.g. idea chats). The Owela tool itself does not guarantee success but experienced facilitators are needed. The goals and tasks must be defined beforehand and clearly communicated to the participants. Most of the communication in Owela is text-based, and this has to be taken into account when analyzing users' ideas and comments, as the text may lack some crucial information or be subject to misunderstanding for some other reason. The advantage of web-based co-creation is that all developers have real time access to user feedback without intermediates and are able to ask more questions directly from the users. This helps developers to better understand the users and vice versa.

### **3 CO-CREATION IN PUBLIC EVERYDAY SPACES: IHME**

VTT's Ihme innovation showroom concept (Figure 2) was launched to test and further develop the idea of an open public co-creation environment. Ihme aims to fulfill the existing gap between laboratory research and a living lab approach. Ihme is an open, low threshold environment where ordinary people can visit easily according to their own schedules. People can experience, see and try physical proofs of concepts and other tangible illustrations of new technology and services. Visitors can freely just look and try pilot services, participate in co-creation sessions or just leave their ideas and comments. Presented technology and service pilots are designed so that they are entertaining and fun, e.g. set up in the form of a game. Ihme emphasizes direct designer/user interaction and encourages designers to come and introduce their ideas and discuss of them with potential users. Direct interaction enables agile, iterative development.

VTT's first Ihme environment was set up in the Ideapark shopping centre (Lempäälä, Finland) in a 61 square meter facility in summer 2010 for two months.

Besides the Ideapark Ihme Innovation Showroom, more temporary Ihme innovation showrooms have been set up in the contexts of fairs and exhibitions.



Figure 2 The Ihme innovation showroom

In Ihme, the ideation theme has to be such that it will tempt passers-by to take a closer look. Each user should be able to devote as much (or little) time to the ideation as (s)he happens to have. In Ihme, we have studied, e.g. a virtual travel service, games, augmented reality applications, Internet of things and mobile consumer services. As data gathering methods, we have used interviews as well as posters on which users can put their ideas and comments as post-it notes. The interviews and ideation sessions typically last from twenty minutes to one hour for each individual or group.

In Ihme the value proposals have to be presented in such ways that ordinary, less technology-oriented users can quickly understand them. Direct user/designer interaction has been fruitful and has produced concrete ideas. The dialogue not only foments ideas but also makes the designer understand the user's world.

The Ihme innovation showroom at the Ideapark shopping center reached a large number of visitors during the first opening period, summer 2010 (approx. 2500 visitors). In a visitor survey, interactivity, entertainment factor, innovative visual representation, presence of sound feedback, possibilities for further development and broad applicability were mentioned as reasons that made presented applications appealing. Of the survey respondents, 69% showed a positive response towards participating in the design of new technologies and services. Participation was seen as useful and important but also fun and interesting. Visiting the Ihme space was reported as a positive experience by all the survey respondents. The main positive aspects were the opportunity to participate, experiencing new technology trends, the public appearance of the research institute, the opportunity to meet experts, an easily approachable location and a low threshold to participate.

#### **4 INTERWEAVING DESIGN AND USE: LIVING LABS**

Living Labs are open innovation ecosystems that engage users in the co-creative process of new services, products and societal infrastructures in real-life settings (European Commission, 2010). A Living Lab offers services which enable the users to take active part in research and innovation as part of their everyday lives. As a development and innovation environment, a Living Lab is more participatory than traditional social pilot studies and ethnographic research, which focus on observing

rather than interacting. Living Labs can provide reliable information about the market behavior of users, further contributing to reduced risks for new business and technology (Näkki and Antikainen, 2008).

The Living Lab co-creation approach is based on our experiences of applying and developing co-creation methods in different field pilots. It is already an established practice to organize field tests in pilot services before they are launched on the market. Prototype services that are reliable enough for long-term use and include content valid for actual use are good candidates for field tests. Long-term field evaluations give user feedback beyond first impressions. Very often, user attitudes are only established after the first few weeks of a 'honeymoon' period.

The Living Lab approach changes the setting of a traditional field test so that in addition to actively gathering user feedback, users are also encouraged to propose improvement ideas. The best ideas are put into practice right away and thus the users can see immediately how their feedback influences the service. We call this 'design-in-use'. This motivates additional comments and development ideas and gradually creates a positive spin of continuous improvements based on everyone's contributions. Another motivating factor is positive experiences of the participation: to belong a Living Lab user community and give feedback can be simply fun.

As Living Labs require long term commitment, registration should be simple but still inform clearly the participants of the expectations. The Living Lab should provide different co-creation activities such as online contribution in Owela, focus groups, individual evaluations and face-to-face interviews. The possibility to choose the ways to participate motivates the users. The interaction between the users, researchers as well as other stakeholders should be continuous and informal to allow the design-in-use be part of everyday life and to encourage creativity of the users. The design-in-use idea actualizes best when methods to collect and analyze user feedback data are agile and carried out in appropriate intervals. Online methods complement field evaluation methods and these can be used in parallel.

Our most recent Living Lab case was focused on the development of postal services. We applied co-creation efforts in several phases of the service development. We used different methods from household and individual interviews and questionnaires to co-design sessions with group dialogical methods. Owela was also in use as a method for collecting feedback and ideas and for informing participants. The co-creation process produced plenty of user ideas and opinions also on related services. The Living Lab community, part of a small village in southern Finland, benefited from the social agenda and the technical platforms set by the Living Lab, as the participants could meet each other and collaborate for the common goals of the Living Lab.

## **5 COMPARISON OF THE CO-CREATION APPROACHES**

In Table 3 we compare the co-creation spaces regarding setup, methods, participation as well as strengths and challenges.

**Table 3 Comparison of the three co-creation approaches**

|   | <b>Owela</b>   | <b>Ihme</b>   | <b>Living Lab</b>  |
|---|--|---|--|
| <b>Innovation phase</b>                   | All (needs, ideas, concepts, prototypes)   | All (needs, ideas, concepts, prototypes, even market research)                          | Design-in-use, ideating complementary services   |
| <b>Typical illustration material</b>      | Text, images, videos, slideshows   | Scenarios, demonstrators, proofs of concepts  | Actual or pilot service  |
| <b>Data gathering</b>                     | Online discussion, ideas, polls, surveys, votes, ratings                                   | Interviews, observation, questionnaires   | Household interviews and evaluations, group discussions, Owela   |
| <b>Participating users</b>                | Internet users (i.e. almost anyone)  | Visitors at the place where Ihme is set up, e.g. shopping mall                          | A focused user group of the service  |
| <b>Form of user interaction</b>           | Mostly text-based commenting, rating, voting, chatting                                     | Face to face  | Online, face-to face, group meetings, phone discussions  |
| <b>Role of service provider /designer</b> | The role can vary from active participant to observer                                      | Presenter, interviewer  | Leader and motivator of the Living Lab, observer   |
| <b>Strengths</b>                          | Easy to reach users; enables micro-contributions of masses; long-term collaboration        | Open to all in public space – low threshold to participate                              | Design feedback and ideas based on long-term actual use; user empowerment  |
| <b>Challenges</b>                         | No face-to-face contact; requires continuous facilitation; mainly text-based communication | Quite resource intensive; data gathering is challenging in ad-hoc face to face meetings | The service should be technically reliable and have real content; motivated and engaged long-term users may be hard to find and keep |

The main differences between the co-creation spaces are in participation space and participation role. Owela is an online approach and Ihme is a physical world approach whereas Living Labs can have both elements depending on the co-creation activity. Owela participation focuses on reflecting ideas and developing them further whereas Living Lab and Ihme focus on people experiencing themselves, and giving feedback based on actual experiences.

Owela is at its best in early ideation and concept design. Ihme is at its best when people can look, feel and experience physical demonstrations or proofs of concepts. Living Labs are needed when the service already exists as a working pilot or when



an existing service is further developed during use. These boundaries are not fixed however and the co-creation spaces can be used in parallel.

## **6 DISCUSSION AND CONCLUSIONS**

Owela, Ihme and Living Labs are all co-creation spaces that manage to go close to user's world and thus are able to reach masses and intertwine with the everyday lives of people. The threshold to participate is especially low in Ihme and Owela. All the co-creation spaces provide various ways to participate, and let the users choose the ways that they personally like. In Owela, users can participate in a web-based innovation community independent of time and space. Users can select their level of contribution, varying from short comments to long-term participation in development projects. In Ihme, designers can meet and interact with users in a physical environment that has been designed to encourage ideation. Living Lab environments enable 'design-in-use': long-term service development with users in parallel with using the service. Owela is at its best in early ideation, especially when the ideation theme is such that it tempts people to create ideas and comment on them based on their own experiences. Ihme is at its best when designing new interaction concepts or other tangible experiences. Future usage possibilities of Ihme include long term company specific Ihme spaces and short term pop-up Ihme spaces at public places. Living Labs enter the picture when co-creation extends to the actual use, and services are continuously improved in parallel with their use. At its best, a Living Lab enables firm and continuous connections to actual users and co-creation based on actual everyday experiences. Living Labs can be complemented with Owela and Ihme to facilitate online and face to face interaction between participants.

The co-creation spaces can also have indirect impacts on better company image and they can assist in marketing. With all three co-creation spaces, direct designer/user interaction supports turning the designer's mind-set from technical features to user experience. This facilitates the design of services that are better accepted by users and more interesting to them. All three approaches produce a lot of material to be analysed. Agile ways to analyse the feedback are needed and this is our main research focus for the future.

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