

Preliminary experiences with the online forum PATIO in a multi-contextual Living Lab environment

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ABSTRACT

Opportunities enabled by social media seem to be promising for facilitating interactions in a multi-contextual environment such as the Living Lab. The aim of this paper is to share the practical experience of OULLabs in using social media to involve test users, particularly the test user online forum PATIO. In all projects carried out in OULLabs, PATIO has been perceived as useful. To motivate users to participate, interesting test projects, incentives and feedback should be provided. However, more studies on users' motivation factors are needed to further develop PATIO.

Introduction

A relatively new Living Lab approach seems to be promising for information and communication technology (ICT) developers to meet the challenges of involving users in innovation processes (Følstad, 2008). Living Labs can be seen as a methodology, an organization, a system, an arena, environment, and/or a systemic innovation approach (Bergvall-Kåreborn, Eriksson, Ståhlbröst & Svensson, 2009). However, no coherent definition exists; Living Labs are driven by two ideas: involving users as co-creators on equal footing with the other participants and experiments in real-world settings (Almirall, Lee & Wareham, 2012). Thus, Living Labs are seen as separate from other innovation approaches due to two dimensions: a high degree of realism and a 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 R&D and all stages of the product development lifecycle (Ballon, Pierson & Delaere, 2005).

In Living Labs, users and other partners from academia, businesses, and the public sector work together creating products and services that match users' needs. However, Living Labs involving different partners as co-creators in the innovation processes face challenges arising from the actors' varying knowledge, expertise, and needs. Thus, the methods and tools used by Living Labs for co-creation, collaboration, and communication are substantial.

At present, social media allow an unprecedented opportunity for individuals—including entrepreneurs—to engage in social interaction on a scale, and in a way, that was not possible before social media became widely popularized (Fischer & Reuber, 2011). As social media services are built on user participation, content creation, and communication, they provide a promising means for involving users in software design and innovation (Näkki & Koskela-Huotari, 2012). Therefore, social media might facilitate interactions in a multi-contextual environment such as a Living Lab. An example of how social media can be used for Living Lab needs is Owela. Open Web Lab (Owela) is an online platform designed by VTT (Technical Research Centre of Finland) for co-creation among end-users, customers, developers, and other stakeholders (Kaasinen, Ikonen, Koskela-Huotari, Niemelä & Näkki, 2011).

The aim of this paper is to share practical experience of OULLabs in using social media, particularly PATIO for involving test users in Living Lab activities. OULLabs¹ (Oulu Urban Living Labs) is located in the Center for Internet Excellence (CIE) at the University of Oulu. More than 50 different test projects have been carried out in OULLabs thus far. The test project spectrum varies: from idea generation to evaluation and testing of, for instance, mobile applications, mobile device designs, 3D user interfaces, or public online services. OULLabs has been managing the test user online forum PATIO (www.patiolla.fi) since 2011. Currently, approximately 500 test users are registered at PATIO.

PATIO for involving users in Living Lab activities

PATIO aims to facilitate users' involvement in Living Lab activities, and bring together users and organizations for co-creation. In all projects carried out in OULLabs, PATIO has been used, and in practice has been perceived as useful (Table 1). First, PATIO has enabled companies, research groups, and public organizations to easily reach test users. Moreover, as test users have registered for PATIO on a voluntary basis, companies or other organizations can reach test users who are motivated and interested in the product or service development.

¹OULLabs has been further developed during the MAINIO project. MAINIO (Methods and Innovation Networks in OULLabs) is a two-year (January 1, 2012, through December 31, 2013) project financed by the Council of Oulu Region and the European Regional Development Fund, University of Oulu (Center for Internet Excellence and Media Team Oulu), Oulu University of Applied Sciences, City of Oulu, and VTT Technical Research Centre of Finland.

Positive features of PATIO	Organizations' perspective	Test users' perspective	Moderator's perspective
Ease of use	to recruit test users; to conduct test projects	to participate and involve in test projects	to moderate test projects and user database
Flexibility	to conduct test projects	to participate at any time	to conduct test projects
Diversity	to utilize test online forum PATIO in different ways	to participate in different kinds of test projects	to provide different ways to conduct test projects
Connectivity	to involve users in the test projects; to participate in and lead online discussions	to be involved in the test projects together with others	connectivity increases participation
Accessibility	to reach test users; data needed for surveys	to participate where the Internet is available	access to data also after the test project

Table 1: Positive features of PATIO.

PATIO can be used in various ways; however, it is especially appropriate for forum-type discussions, for instance, during the idea generation phase or in later stages of product or service development with the aim of collecting users' feedback. In the test user online forum, for example, several idea generation projects regarded as local public services have been conducted. User feedback, opinions, and ideas can be accessed quickly and easily. For example, in the test project of a mobile application designed for communication between children and adults, PATIO was used as a discussion and communication channel among test users (10 local families), the customer company and the application software provider. Instructions for using the application were also delivered in the forum.

PATIO offers an opportunity to recruit test users according to particular study criteria and conduct online surveys in a flexible manner. For instance, 35 users were recruited for a test project of a smart phone application aimed at transferring health data to mobile devices, data analysis, and dissemination. According to the customer organization's experiences, in discussion at PATIO after the user test, new issues came up that had not been revealed during the user tests.

From the test user's perspective, PATIO enables test users to participate in different projects at any time the Internet is available. At PATIO, test users can share their ideas, opinions, experiences, and give feedback, with others who are interested and motivated to participate in the same project. In addition, by participating, test users acquire knowledge and new information as well, for instance, about new technical solutions being developed in their region or local public services. Moreover, to increase users' willingness and motivation to

participate, a reward points system was implemented. In addition to incentives, test users receive feedback on how they influenced the product or service development.

Online discussion at PATIO can be led and structured by the OULLabs moderator and/or, for example, a company representative. An easy test project setting and test project moderation are enabled through the PATIO system.

Although PATIO has been perceived as useful in all the test projects carried out in OULLabs, the number of test users registered at PATIO may limit its applicability. As can be seen in Table 2, in the examples of OULLabs test projects and use of PATIO, the number of participants in the test projects varies from 10 to 40. Thus, the description of PATIO features has been based on experience gained during the test projects where the number of test users needed is no more than 40.

Test projects conducted by OULLabs	Number of test users and duration of the test project	Use of PATIO
New design ideas for mobile devices (Kansei Engineering)	40 test users, duration 42 days	test user recruitment for user tests
Mobile application for healthcare technology (Personal Chart)	35 test users, duration 51 days	test user recruitment for user test, online discussion
Healthcare product test (Electric door opener)	10 test users, duration 6 months	test user recruitment for user test, online discussion
Usability test (ViTest)	27 test users, duration 58 days	test user recruitment for user test, online discussion
Concept test for 3D user interface ideas	20 test users, duration 24 days	test user recruitment for user test, online discussion
Survey on public online service (Rummuttaja.fi)	29 test users, duration 45 days	online discussion
Mobile application for communication (WiseSteps®)	10 families, duration 24 days	channel for information sharing

Table 2: Examples of test projects carried out by OULLabs.

User involvement in developing PATIO

Aiming to facilitate users' involvement in product or service co-creation, PATIO has been developed and improved taking into account users' feedback, experiences, suggestions, and ideas. The users have been and continue to be the source of inspiration for further development of PATIO.

PATIO has been developed and its applicability adjusted. Recently, an online survey at PATIO was conducted to collect users' feedback on the following changes: redesigned layout, visual appearance (colors, pictures), improved navigation, informative parts for test users and organizations, appearance of information about ongoing test projects, and new reward points system. These changes were made based on previous studies conducted before PATIO was launched (2010) and in 2011. During these studies, different approaches were used, for instance, usability heuristics (Nielsen, 1994), user studies aiming to improve usability and user experience, and online surveys.

In a recent online survey at PATIO (January 1, 2012, through April 30, 2012), 49 test users participated, and 115 comments were posted. Test users perceived the discussion as active: *"I feel that the reward points system has proved its effectiveness since many online users have been participating in the discussion"* (test user A). Test users could participate in the discussion in Finnish and English. In the online survey open free form questions, for instance, *"How do you like/what do you think about/we would like to hear"* and more focused questions such as, *"For whom is the web page intended -more for test users or companies or both?"* were presented. Questions covered the following themes: layout, content, structure, purpose of the forum, features encouraging participation such as reward points system, and user Top 10. The majority of the comments (total 22 posts) were related to the reward points system and rewards per se (Figure 1). Questions regarding the new design and layout stirred extensive discussion. Some participants, for instance, liked the new design and layout while others would prefer more attractive ones. *"Colors can be always discussed because there are many tastes"* (test user B, translated into English by the authors). Based on the participants' feedback minor navigation problems, technical errors, and misspellings were corrected.

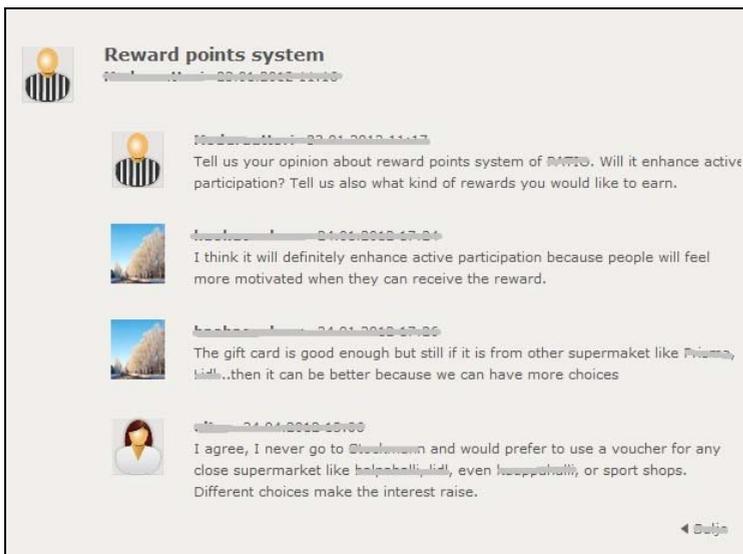


Figure 1: Discussion about reward points system at PATIO.

Key lessons learned

Based on practical experience with the use of PATIO and feedback provided by test users during the previously mentioned studies, particularly, the online survey conducted recently, the following lessons can be learned. As users participate in PATIO voluntarily, to motivate users to participate in test projects, OULLabs should:

- provide interesting test projects;
- provide incentives for test users;
- give feedback.

The majority of participants liked the purpose and idea behind PATIO: to participate in and influence product or service development. However, there should be projects in which the test users are interested in and are suitable for their profiles. *“Reward points have been encouraging, but, of course, suitable projects for one’s profile should be provided often”* (test user C, translated into English by the authors). Hence, more studies on users’ segmentation and users’ motivation factors should be carried out.

The reward points system, according to users’ feedback, has encouraged test users to participate in PATIO. *“I think it will definitely enhance active participation because people will feel more motivated when they can receive a reward”* (test user D). However, different types of test users have been perceived at PATIO. Although some test users participate in the test projects because they are enthusiastic to try out, for example, new technologies, others do it to receive a gift card. Thus, incentives should be provided taking into account different types of people and their motivations.

To demonstrate the meaningfulness of participants’ contribution, feedback about their contribution in the test project, and how their contribution has affected the product or service development should be provided. However, more studies on providing feedback should be conducted.

Discussion and conclusion

Social media seem to be promising for establishing sustainable relationships among Living Lab partners with varied knowledge, expertise, and needs. In all the projects carried out in OULLabs, PATIO has been used, and in practice has been perceived as useful. However, the number of test users registered at PATIO limits its applicability. Based on the experience gained during the test projects in which the number of test users needed varies from 10 to 40, PATIO can be characterized by the following positive features: ease of use, flexibility, diversity, connectivity, and accessibility. Nevertheless, aiming to facilitate users’ involvement in product or service co-creation, PATIO continuously has been developed and improved taking into account users’ feedback, experiences, suggestions, and ideas.

Based on practical experience using PATIO and previously conducted studies aiming to adjust and further develop PATIO, the following key lessons were learned. To motivate users to participate in test projects, interesting test projects, incentives for test users, and feedback should be provided.

As private persons become sources of ideas and innovations, an appropriate reward and incentive system should be in place that secures payback for all the actors involved (Eriksson, Niitamo & Kulkki, 2005). Findings of a study conducted at the Botnia Living Lab illustrate that the most important factors motivating users to participate in an innovation intermediary community are intrinsic motivators such as learning, stimulating curiosity, and being entertained (Ståhlbröst & Bergvall-Kåreborn, 2011). However, according to Antikainen (2011), new viewpoints, a sense of efficacy, a sense of community, and fun are the most important factors affecting users' participation in online innovation communities. Thus, more studies on users' motivation factors are needed to further develop PATIO. Different communities fulfill different goals for diverse types of users, and users have different expectations, engagement, and intentions when participating in different communities (Ståhlbröst & Bergvall-Kåreborn, 2011).

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