

Living Labs – the user as co-creator

Jens Schumacher, Karin Feurstein

*Research Centre for Process- and Product-Engineering, University of Applied Sciences Vorarlberg,
Hochschulstraße 1, 6850 Dornbirn (Austria) {scj;fk}@fhv.at*

Abstract

The integration of users and other stakeholders into development projects has proved to reduce business risks such as the invention and acceptance of products, services and applications (which do not truly provide added value for customers). However the integration of the end-users remains a difficult task. Thus a new methodological approach is required to cope with this problem. Here the emerging European Living Labs offer an unique opportunity for the companies to include end-users in the new product development process. The Living Labs concept is a complete innovation approach which includes all stakeholders in the development process of a product, service or application.. It refers to an R&D methodology in which innovations, such as service, product or application enhancements, are created and validated in collaborative, multi-contextual, multi-cultural empirical real-world environments. The individual is in focus in his or her role of a citizen, user, consumer or worker. The main difference between traditional consumer research programs and the Living Labs approach is its involvement of the customer in their every day lives, encompassing all of their societal roles.

Keywords

Living Labs, methodology, user-centred, product development

1 Living Labs concept

The Living Lab concept originates from MIT, Boston, Prof William Mitchell, MediaLab and School of Architecture and city planning. Living Labs represents a research methodology for sensing, validating and refining complex solutions in multiple and evolving real life contexts. Here, innovations, such as new services, products or application enhancements, are validated in empirical environments within specific regional contexts. The individual is in focus in the role of a citizen, user, consumer, or worker. The **user experience** focus involves areas of user interface design and ergonomics as well as user acceptance, extending to user co-design process, finally leading to service or product creation. Value is captured on an individual level as well as on the organisation level. Emerging value distribution and changes of existing value chains are analysed. Culture and site specific features are identified when innovative applications are transferred across borders to different diverse contexts and cultures. Mass customisation models are planned in deployment and in European/global exploitation. The original concept is currently adapted to the information and communication technology area within the EU project CoreLabs CA. Besides there are initiatives which examine the possibilities to adapt the concept to other areas (e.g. logistics, ...).

2 User integration in Living Labs

The participation not only of the potential customers but also of all other stakeholders along the value-chain can be seen as the foremost required element for the successful operation of a Living Lab. According to [Niitamo et al. 2006] a Living Lab needs to bring access to state-of-the art technology not of only one kind but often of competing technologies delivered through different business models. The core advantage of the Living Lab concept over traditional user-centric methodologies is its multi-contextual sphere in which product and service development and

evaluation takes place. The ability to interact with the users in his private environment is what distinguishes the Living Lab approach from other supplier-customer partnerships, or previously seen cross-disciplinary approaches. The evaluation in the daily life context and the fact that users are involved in all stages of R&D and all stages of the product development lifecycle, not just at the end phases as, for example, in more classical field trials or user testing of products can be seen as one of the crucial novel aspect of the Living Lab approach [Ballon et al. 2005].

2.1 Methodology

Many different studies come to the result that one of the key aspects of a successful product development is to involve the user into the development process [Cooper 1980]. As argued by von Hippel and Thomke the users are actually more often than the manufacturers of technology the source of innovations [von Hippel and Thomke cited in Eriksson et al. 2005, p. 2]. The Living Lab concept is characterized by the “users as innovators” approach. This means that “the basic idea is not about using the users as ‘guinea pigs’ for experiments, it’s about getting access to their ideas and knowledge” [Eriksson et al. 2006]. Therefore a new method is required that allows an interaction or co-creative approach between the consumer and the researcher over the whole development process.

The Living Lab approach enables user involvement over the whole product and service development process [adapted from Reichart 2002 shown in Figure 3] evaluated in the every day life context. The evaluation in the daily life context and the fact that users are involved in all stages of the product development lifecycle, not just at the end phases ,(e.g in classical field trials or user tests), is another novel aspect of the Living Lab approach [Ballon et al. 2005]. In the Living Lab concept the user can therefore actively be involved as a source of new product/service ideas, testing and validating new product concepts, conduct usability tests with real or virtual prototypes and he can also be part of a real or virtual test market. With a sophisticate communication infrastructure in place all over Europe, the Living Lab approach takes the emerging opportunities given by Information and Communication Technologies (e.g. mobile technologies, behaviour logging of the consumer, etc.) into account, the methods used to involve the user are also more interactive and it becomes possible to reach a much bigger community than it is possible with the traditional market research methods.

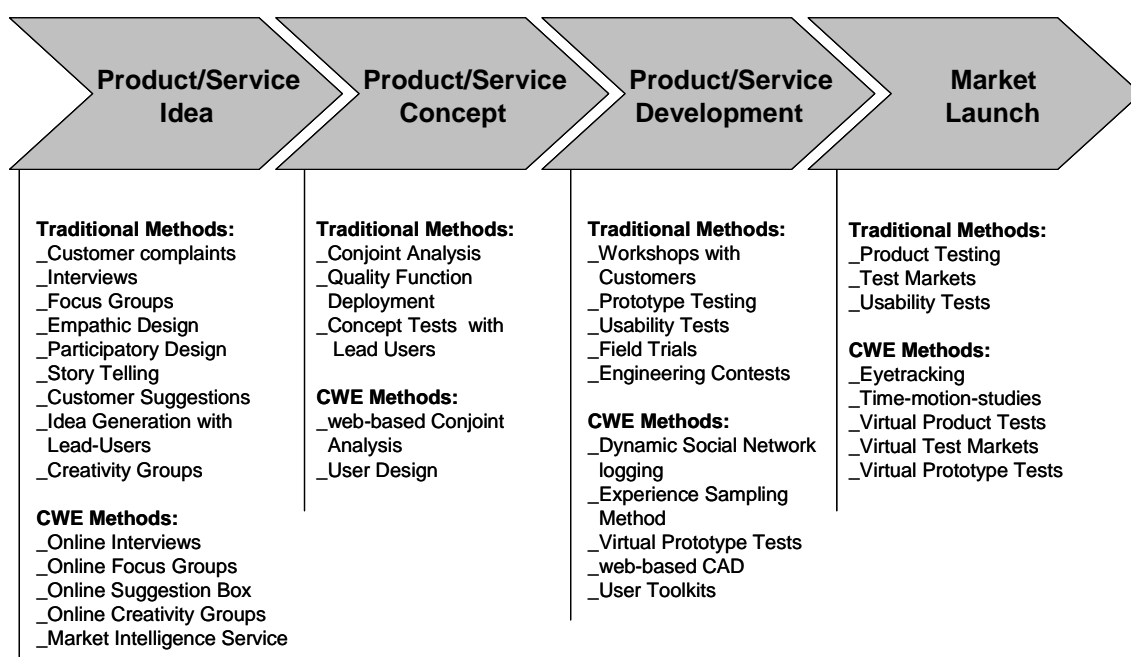


Figure 1: Customer Integration Methods

Figure 1 gives an overview of several methods that are used to integrate the customer into a new product development process. These methods are divided in traditional market research methods on the one hand and ICT enabled Collaborative Working Environment (CWE) methods such as online interviews, web-based conjoint analysis, virtual product testing and user toolkits on the other hand. The CWE methods compared to the traditional market research methods are strongly dominated by the new possibilities of the ambient ICT. Within the last years the importance of new technologies, such as the mobile internet, personal mobile devices, etc. increased considerably up to 20% of the whole market research in 2005 [Geißler 2006].

The Living Lab concept takes up the new possibilities to interact with the end-user that arises with new Communication and Information Technologies. Thus the arising CWE methods, e.g. user toolkits, logging, experience sampling method (ESM) seem to be highly appropriate methods for the existing and emerging Living Labs.

3 Methods used in existing Living Labs

The Coordination Action Corelabs: Co-Creative Living Labs (EP# 35065) has the primary goal to harmonize the upcoming and existing Living Labs in Europe. In this context the project conducted a survey in the existing Living Labs to identify the used methods & tools, in order to integrate their consumers into the product or service development process. The key results of the survey are the presented in the following sub-chapters.

3.1 Product/Service Idea

The Product/Service Idea generation phase comprises of several methods such as Interviews, Focus Groups, Empathic Design or Idea Generation with Lead Users. As shown in Figure 2 the traditional method of Interviewing users (orally, written, telephone) is the most widespread method within the Living Labs as it is used by ninety percent of the examined Living Labs. Besides Focus Groups, Customer Suggestions and Idea Generation with Lead Users are widely used as a source of new product or service ideas within the Living Lab initiatives. Customer complaints analysis and story telling methods have been implemented in 50% of the examined Living Labs.

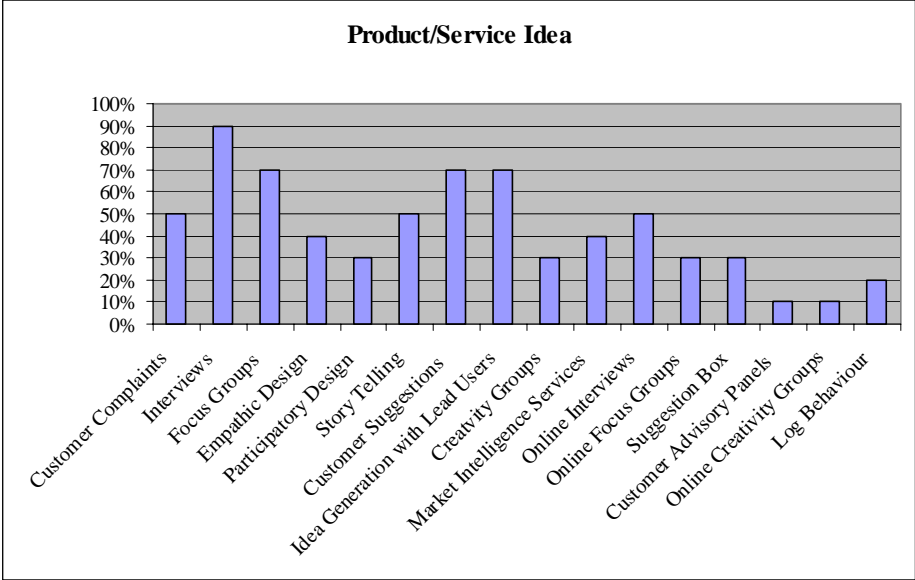


Figure 2: Methods used by the Living Labs within the Product Idea Generation Phase

3.2 Product/Service Concept

As shown in Figure 3 the user involvement of the Product/Service Concept generation phase within the Living Labs is characterized by User Design and Concept Tests with Lead Users as it is the most adopted method (up to 80% of the examined Living Labs). Ethnography identified as a good method to interact with the user or Quality Function Deployment is only used by 10% of the Living Labs so far.

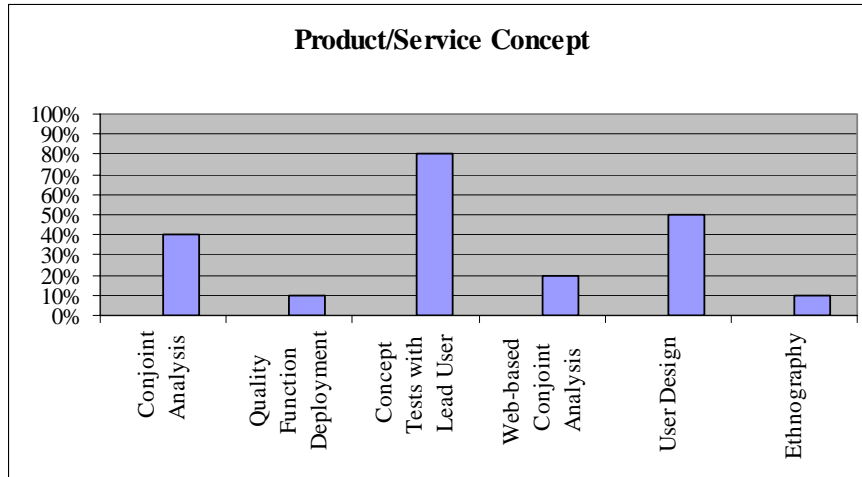


Figure 3: Methods used by the Living Labs within the Product Concept Phase

3.3 Product/Service Development

Within the Product/Service Development phase the most adopted methods are prototype and usability tests with the end-user as illustrated in Figure 4. Dynamic Social Network logging, workshops with customers as well as virtual prototype tests are adopted in 30% up to 40% of the Living Labs.

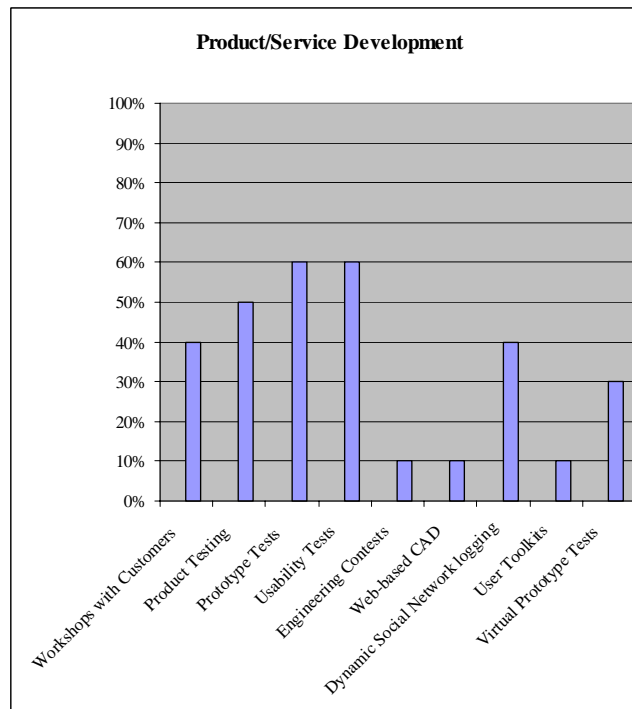


Figure 4: Methods used by the Living Labs within the Product Development Phase

3.4 Market Launch

As illustrated in Figure 5 60% of the examined Living Labs use Test Markets to validate their products before they launch it. Also half of the examined Living Labs conduct Product Tests with users before the final launch of new products or services. Almost half of the Living Labs stated that they are conducting usability tests in the Market Launch phase. The relatively new methods such as eye tracking, augmented reality or time motion studies are only adopted by 10% up to 20% of the existing Living Labs.

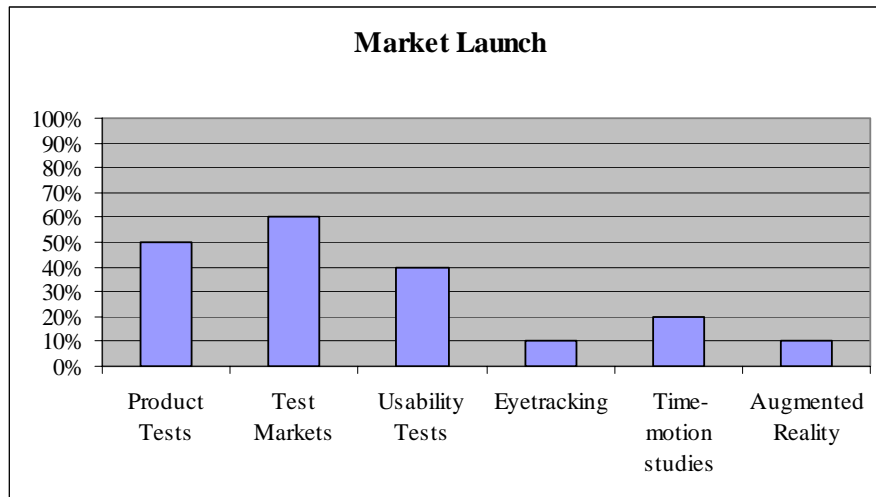


Figure 5: Methods used by the Living Labs within the Market Launch Phase

On the basis of the analysis of the Living Labs, the following key observations were made:

- All of the examined Living Labs currently employ specific methods and tools to integrate and interact with their stakeholders across the entire new product and service innovation process.
- Especially traditional methods are widespread within the existing Living Labs.
- The Living Labs are currently developing new methods & tools to interact with their stakeholders.
- The methods used within the Living Labs are supported by new Information and Communication Technologies (ICT) which helps reduce innovation time and cost. [Feurstein et al. 2006]

4 Conclusions and Outlook

Living Labs will allow the better and faster development of new services and products. By utilizing the creation and innovation potential of the end-users companies will gain a better insight into the possibilities and restrictions of their products. Many well-known and emerging methods and tools for customer integration facilitate this process. However, significant research effort must be allocated to the development of both methodologies and supporting tools which enable such integration in the most unobtrusive fashion possible. Natural, effective and timely interaction with the users must be made possible throughout the sites of a Network of Living Labs. Especially research regarding the use of technological platforms such as Collaborative Working Environments for the support of co-creative processes must receive a high priority.

A first step in this direction has already taken place when the European Network of Living Labs was launched in November 2006 under the Finish presidency. Currently the network comprises

20 1st wave Living Labs. Under the Portuguese presidency the network will be extended to another 20 Living Labs, the so called 2nd wave Living Labs. The CoreLabs project is currently working on a standardization of the different methods & tools so that the European Network of Living Labs can make benefit from the synergy potential that lies in the different Living Lab sites.

Acknowledgement

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