The Living Lab project; user centered sustainable design

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Living Lab

In January 2008 the Living Lab project had its kick-off meeting. In a two-year pilot project, Living Lab (which received a grand from the European Commission's seventh framework programme) will establish a European infrastructure for longitudinal research on the interactions of users with more sustainable and quality-of-life enhancing innovations[1]. In Living Labs user interactions with technologies in real or almost real-life contexts will be studied; the insights will be used to develop and design sustainable products and technologies, together with the users.
Many living lab environments already exist, some of which are quite well known, for example the Philips Homelab (NL), the Fraunhofer InHaus (Germany) and the MIT PlaceLab (USA). How can Living Lab take the next step, building on the work done in these excellent research environments? This paper focuses on the opportunities we see for Living Lab to advance the field of user centered sustainable design in a home context.

User first

An important starting point for Living Lab is the human focus. From a commercial angle this makes sense, as many businesses now feel that understanding consumers in context is a competitive necessity (Sanders, 2004). A user centered approach may seem quite logical, but many of the existing demo-homes, homelabs and 'houses of the future' are showcases of technology-push. Consequently, very few commercial applications have come out of these lab environments (Keyson, 2007).

In the field of sustainable design too, activities have predominantly focused on technological solutions to environmental problems (for instance a water-saving shower head). The lack of focus on the user context often resulted in unintended and unsustainable outcomes, a situation demonstrated by early examples of eco-design which often over-estimated the environmental motivations of users while under-estimating other user factors like compatibility with lifestyles, aesthetics, rebound effects, and others (Scott, 2008). A user centered sustainable design approach to Living Lab is seen as vital to enhance commercial uptake of sustainable products & technologies, and prevent unwanted rebound effects.

User centered sustainable design

In the paper we will be exploring several ways to advance the methodology of user centered sustainable design. One of the possible reseach topics of Living Lab will for instance be 'energy awareness in the home'. We'll study the most resource intensive practices in the home and try to develop ways to help people incorporate more energy efficient behaviour into their current practices.

Our thinking on user centred sustainable design involves the following elements (in random order), which we will elaborate in the paper:

- The development of a shared design space. A central tenet of user centered design is the direct involvement of people in the co-design of the things and technologies they use. We see the shared design space as a virtual and/or physical space where designers and users meet and share

[1] The Living Lab project is a joint project of the Delft University of Technology, Wuppertal Institute, the Swiss Federal Institute of Technology in Zurich, the Technical University of Madrid, BASF, Acciona, and Proctor & Gamble.

information and ideas. Inspired by concepts like ‘open innovation’ and ‘open source’, we will try to design an environment that stimulates creative interactions.

- The use of rapid prototyping and short iteration loops. Very early in the design process, ‘quick and dirty’ models are made to analyse and evaluate ideas together with users. There may be as many as a hundred prototypes before the product ‘comes together’. The designers work with users in very short iteration loops, i.e. they quickly get feedback. This process was explored by IDEO (Brown, 2006).

- The development of novel ways of observation. For instance, people generally resent being filmed. Consequently, putting cameras in Living Lab houses may not be the right way forward. Other, much less intrusive ways to observe activities are needed.

- The development of visualisation techniques for complex data sets. Monitoring people typically generates huge amounts of data. Designers can easily fall into ‘analysis swamps’ (Boess, et.al., 2006). Making sense of huge data sets without compromising the flow of producing design ideas is a challenge.
- The development of novel ways of looking at the use of products in households. The social practices theory of Elisabeth Shove has been inspiring in this sense (for instance Ingram, Shove, Watons, 2007).

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