

Title: Open innovation systems for value creation and knowledge exchange: results from the Flemish LeYLab Living Lab

- Keywords (5): Living Labs, open innovation, innovation ecosystems, user innovation, knowledge spill-overs
- Problem: What specific problem does the submission focus on?

Living Labs are seen as facilitators of sustainable innovation practices with a user-centered approach (Schuurman et al., 2012), but academic research into the methodological building blocks of Living Labs is still lacking, resulting in a diversity of definitions, approaches and characteristics (Følstad, 2008; Almirall & Wareham, 2011; Leminen & Westerlund, 2012; Veeckman et al., 2012). In nowadays knowledge economy, no more general ‘best practice’ innovation management exists. Within this paper we investigate the potential of Living Labs as open innovation systems that foster different knowledge transfers amongst the actors participating in them. By means of an in-depth case study research of the LeYLab Living Lab we explore a variety of hypotheses abstracted from the open innovation literature on knowledge transfers and other variables influencing exchange and collaboration in open innovation systems. We conclude that given certain criteria are met, Living Labs can be a solution for sustainable innovation development.

- Current understanding: What is known about this problem?

For companies, it is necessary to attain an optimal level of ambidexterity, or the capability to explore external knowledge and valorize or exploit this knowledge for internal benefit (Andriopoulos and Lewis, 2009). Traditionally, Europe scored high in terms of research (exploration), but underperformed in terms of market success (exploitation), a phenomenon referred to as the ‘European Paradox’ (Almirall and Wareham, 2011). In order to overcome this paradox, several initiatives were kickstarted on the European policy level, such as the promotion and support of industry-university links and relationships (Perkmann and Walsh, 2007). A specific case of industry-university relationships are so-called Living Labs, which also received considerable support from the European level starting in 2006 (Dutilleul et al., 2011). Within this paper, we will explore the value of Living Labs as a possible solution for the ‘innovation paradox’, as they facilitate university-industry relationships, but also relationships between large companies and SME’s, start-ups, entrepreneurs, and, last but not least, involve the end-users themselves, commonly referred to as public-private-people partnerships (4P’s) (Westerlund and Leminen, 2011). Such collaboration between different types of actors in a structural way has the opportunity to unlock knowledge on several levels, create value and helps to obtain different goals which would not (as easily) be possible without the existence of such networks, which can be seen as a solution for the innovation management challenges companies have to deal with (Pyka and Küppers, 2002). In order to fully understand the dynamics and benefits of such ecosystems, Perkmann and Walsh (2007) argue that more attention needs to be paid to the specificities and roles of networked inter-organisational relations within these kinds of networks to help resolve the open questions in this area of research. Therefore we will use an open innovation perspective to analyze the roles of the various actors within the Living Lab and the knowledge and technology transfers that occur during the Living Lab operations and cases.

- Research question: What is the submission's goal?

To explore whether the open innovation processes of exploration, exploitation and retention (Lichtenthaler, 2011) occur in Living Labs and how these knowledge spill-overs generate value for the various stakeholders.

- Design/methodology/approach: How was the study/work executed?

We have used a case study design as case study research excels at bringing an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. Case studies are especially suited for investigating new and poorly understood processes, with their emphasis on detailed contextual analysis of a limited number of events or conditions and their relationships (Eisenhardt, 1989). Yin (1984) defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. Given the complexity of the studied phenomenon, the multiple levels of analysis (actors, knowledge flows,...) and the participation of the author team in the Living Lab itself, this research design seems most appropriate.

- Findings: What are the main outcomes?

The different roles that are assigned to the different actors are associated to certain open innovation activities, but during the Living Lab-operations, some actors may switch roles. One of the main findings was that the studied Living Lab clearly succeeded in attracting SMEs to engage in open innovation, a group that was lagging behind (van de Vrande et al., 2009). The role of utilizer seems to be most fitting to them as this allows them to benefit the Living Lab-infrastructure in order to explore their technology, with the potential to be noticed by a partner inside or outside the Living Lab which offers exploitation possibilities. The role of provider of the Living Lab infrastructure seems to be best suited for larger companies with more established and stable technologies, as the smaller providers from the case study failed to deliver. Besides exploitation of their infrastructure, Living Labs also facilitate the exploration of new ideas and technology through the multiple (external) Living Lab cases that take place in the Living Lab. The researchers in the Living Lab have an important mediating role between the utilizers and the users, as they make information regarding user needs ‘unsticky’ (von Hippel, 2005) by means of specific research methodologies. The enablers of the Living Lab play an essential role in supporting and facilitating the Living Lab. Therefore, Living Lab activities should be tailored towards the policy objectives of the enablers. A city appeared to be quite suited for this role. As general guidelines, the thematic focus of the Living Lab and the number of partners are of utmost importance in order to be able to align the goals of the different partners, something which did not fit well in the case study, but which was solved in a natural way through the actual degree of collaboration between the parties who did share common goals. Another important lesson is that the definition of internal use cases is of utmost importance in order to ‘headstart’ the Living Lab with cases that activate the users and generate research data and showcases to attract external utilizers.

- Contribution: What does the submission add to current understanding?

This paper approaches Living Labs from an open innovation-perspective and looks at the knowledge and technology transfers that are facilitated between the various stakeholders participating in the Living Lab and by external utilizers that initiate innovation cases in the Living Lab. This way it adds to the knowledge and theory-building regarding the Living Labs-

concept. It does so based on the findings of the LeYLab Living Lab, which ran over two years, involving in total more than hundred households and by looking at six concrete innovation cases that ran in the Living Lab.

- Practical implications: Who will gain why and in which way from the findings?

The findings and ideas presented within this paper will be of interest for researchers with interest in Living Labs, open innovation and user innovation, and more in general for anyone interested in user-centered innovation and in research regarding user experience.