Living Labs as a driver for change in regional television.

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Abstract

Traditional television production and distribution organizations are increasingly being challenged by a rapidly changing technological environment. These evolutions force the television industry to leave their comfort zone. This context in mind, regional television broadcasters often lack the resources, knowledge and organizational flexibility to cope with this external pressure. In this paper, we discuss the use of Living Labs as 'innovation intermediaries' and 'change facilitators' that foster and enable user-centric innovation development processes, both inside and outside the organization. This phenomenon is approached from both an open innovation and a user innovation point of view. This paper considers Living Labs as open innovation ecosystems, enabling organizations to reach out and collaborate with their (potential) audience and other external actors, but also as an open 'battle arena' for the organization itself. The Living Lab process governs different expectations and enables conflicting opinions to come together and to steadily grow towards a mutual solution. Moreover, the innovation development process in the Living Lab seems to have innovation spill-over effects on the organizational level, catalyzing a broader organizational change.

Introduction

■ Regional news and citizen journalism

It goes without saying that nowadays media environments face rapid technological evolutions. While the convergence of media technologies increasingly blurs borders between different formats, web2.0 technologies challenge traditional broadcasting mechanisms. Social media emerged as an alternative and hard to control distribution channel causing audiences to select, annotate and share the content they want. Also, connected multimedia devices provide access to media content virtually anytime, anywhere. Most newspapers, television broadcasters and new market entrants have now matured their online strategy. However, in order to survive in an increasingly competitive market (e.g. both newspapers and television broadcasters providing online video footage), media organizations need to constantly innovate in order to maintain or increase their audience reach and associated advertisement revenues. Besides the consumption of media, the production of media is changing as well. The creation potential of new media technologies and the democratization of media production hardware and software have led to an age of participation and 'prosumerism' (Kotler, 1986). Against this backdrop, in the context of news production, the concept of user generated content (UGC) is gaining importance (Singer et al, 2011), especially in regional journalism (Väätäjä, 2012). The omnipresence of mobile devices holds the opportunity to activate a network of citizen journalists, generating bottom-up content. Such strategy has potential benefits in terms of speed, gathering unique content, personal stories, recruiting potential talents and possibly in terms of cost. However, this context forces traditional producers of news to leave their comfort zone. Regional television broadcasters, however, often lack the resources, knowledge and organizational flexibility to cope with this external pressure (e.g. Paulussen et al, 2007). Therefore, the introduction and development of innovative formats and strategies, with a substantial influence on internal processes, encounter a lot of friction and resistance. This relative inertia of regional broadcasters is also caused by their newsroom structures which often inhibit collaboration (Paulussen & Ugille, 2008).

■ Living Labs

This paper discusses the use of Living Labs to act as an 'innovation intermediary' or 'change facilitator' in the context of regional television. Generally, Living Labs are considered a framework which enables user-centric innovation development processes, both inside and outside the organization. Therefore, most of the Living Labs literature approaches the phenomenon from a user-centered design angle (cf. Salminen et al., 2011). This paper follows the perspective taken by Schuurman et al. (2013) who approach Living Labs from both an open innovation (Chesbrough, 2003) and a user innovation (Von Hippel, 2005) point of view.

The roots of what was to be called 'open innovation' originated in the late 1970s to the early 1990s as a response to the traditional innovation paradigm, which prescribed an closed NPD process confined within the company walls. One of the central premises is that most knowledge resides outside the company, and that therefore external collaboration has the potential to develop better innovations (Chesbrough, 2003). Another line of literature focusses on the importance of end-user involvement in the NPD process. Traditionally, innovations were only presented to the public when they were fully developed and ready to be launched on the market (Griffin & Hauser, 1993; Ortt & Van Der Duin, 2008). Over the past decades, end-users have become ever more demanding and

empowered. This caused innovation development processes to become increasingly user-centric (Levén & Holmström, 2008). By involving end-users in early stages if the NPD process, the chance of failing can be reduced (Følstad, 2008). With the Lead User literature (e.g. Urban & von Hippel, 1988; von Hippel, 1976, 1986) as one of the earliest appearances of this line of thinking, user involvement now covers a broad range of applications in various literature streams.

One of the frameworks to govern and structure both open innovation processes and user involvement is the Living Lab approach (Almirall, 2008). Living Labs involve the stakeholder ecosystem in the development of an innovation over a longer period of time using a combination of different research methods, following an iterative process (Schuurman et al, 2012; Feurstein et al, 2008). Some characteristics include (1) experimentation in a real-life environment, (2) the implementation of the innovation in a familiar context, (3) conducted over a medium to long term timeframe, (4) on a large scale, (5) investigating the usage context, (6) with special attention for unexpected uses, (7) also including the technical testing of innovations in a realistic context (8) and, finally, facilitating an iterative co-creation of the innovation with all relevant stakeholders (Følstad, 2008).

■ **Transition management** ───────────────────────────────────

As defined above, experimentation in a real-life environment is one of the core characteristics of a Living Lab. By setting up such an experimental environment, the potential of ideas can be experienced by the full ecosystem, stimulating change on a higher level. In an urban context, Nevens et al. (2013) put forward the concept of the Urban Transition Lab which is described as "*the locus within a city where (global) persistent problems are translated to the specific characteristics of the city and where multiple transitions interact across domains, shift scales of operation and impact multiple domains simultaneously (e.g. energy, mobility, built environment, food, ecosystems). It is a hybrid, flexible and transdisciplinary platform that provides space and time for learning, reflection and development of alternative solutions that are not self-evident in a regime context.*" Although this concept is focused on an urban environment, the same principles can be applied on the firm level as well, which allows relating the Living Lab concept to principles of transition management literature (Schliwa, 2013). Transition management focusses on the (long term) governance of problem solving and improvements in societal systems and "[…] *shapes processes of co-evolution using visions, transition experiments and cycles of learning and adaptation*" (Kemp, Loorbach, & Rotmans, 2007). Within the context of this research, transition embodies change on the micro level (single, independent experiments), the meso level (broader enabling structures) and the macro level (e.g. policy, organizational culture or companywide processes).

Methodology

This paper elaborates on the implementation of a Living Lab as an open innovation ecosystem to co-create innovative bottom-up news generation services together with the audience, but also within the media organization itself. The data for this research was collected by means of an in-depth case study analysis, ethnographic observations (November 2012 – December 2013) and four adjuvant individual interviews with employees of AVS, the selected media company for this research. Because of the exploratory nature of this research, a multidimensional case-study analysis is the most suitable

approach (Yin, 1984). Case study research excels at bringing an understanding of a complex issue and can extend knowledge or add strength to what is already known through previous research. On top of that, case studies are most suited for processes which are poorly understood and lack a (solid) theoretical foundation (Eisenhardt, 1989) and allow analyzing the process open-ended and on multiple levels (Yin, 1984). Yin 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 and the multiple levels of analysis, a case-study design seems most appropriate.

In specific, this paper analyzes a Living Lab project on the development of a mobile application for citizen journalism, conducted together with AVS, a regional television company in Ghent, Belgium. As research partners in this project, the authors had access to all research documents, project proposals, project outcomes and reports of the steering committees. Besides these documents, a one year ethnographic observation and four adjuvant interviews with AVS employees were conducted to further broaden our knowledge.

First, the innovation development process itself is described and analyzed. Next, an analysis is made of open innovation processes and finally a conceptual model is proposed to make abstraction of these processes and to evaluate Living Labs as a driver for change both on the level of the product and at the level of the organization.

■ **Research context: AVS**

'AVS Oost-Vlaamse Televisie'[1] is a regional television broadcaster located in Ghent, Belgium. It was one of the successful (regional) media companies founded in the 80s and 90s. Nevertheless, the media sector as a whole, and regional news in specific has changed over the past decade. Cost-cutting measures and decreasing audience reach have made the financing of regional television very unstable. When investments in 'new media' were necessary, the company lacked the resources to innovate. While risks were avoided, the company increasingly lacked behind concerning the use and integration of internet and new media. With a steadily increasing age of the AVS audience, the media organization is now facing the challenge to attract young people.

The position of regional television in Flanders (a region in Belgium) is relatively stable given the fact that every broadcaster has a broadcasting monopoly in its own territory. Despite this market position, regional television broadcasters in Flanders struggle to obtain the resources that are needed for long term strategic innovations. On top of that, the monopolistic position of regional broadcasters in Flanders is increasingly challenged by convergence processes and cross-media formats. Besides struggles with audience reach, this also threatens advertisement revenues as a whole. Against this economic backdrop, AVS is now forced to innovate in order to meet the described challenges and survive on the market.

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[1] http://www.avs.be/

■ **Research context: Mediatuin Living Lab**

The Living Lab project that is being analyzed in this paper is called "AVS – A mobile reporter app " and took place from November 2012 until December 2013 in the Living Lab called 'Mediatuin'[2] (Media garden), a Flemish Living Lab facilitated by iMinds-iLab.o focusing on the optimization, co-creation and validation of media and ICT innovations. This project followed a long-term panel-based iterative multi-method Living Lab approach (Schuurman et al., 2012). The basic idea of the project was to involve youngsters closely in news distribution and content production by means of an AVS mobile reporter application. The main objective was to reach more young people with the AVS news, which should lead to more advertisers (meaning more revenues) aimed at young people. A second objective was to capture user generated content (UGC) of youngsters, and create a 'pool' for journalistic talent: young people who produce news on a freelance base for AVS. One of the key elements in this research is the importance of multiple iterations and the triangulation of multiple methods. Besides the role of the Living Lab as an innovation intermediary which is connecting all relevant stakeholders, it also served as an incubator of ideas internally.

Analysis

■ **The Living Lab process**

Environmental scan. In the initial stage of the Living Lab project, AVS representatives (project leader and editor in chief) were confronted with the current state of the art concerning citizen journalism. Together with the project researchers (1) broader societal trends and evolutions were discussed, (2) knowledge was exchanged concerning the current academic insights on citizen journalism, (3) some prior analyses on youngster's media usage in Flanders were made, reusing existing data sources that were available to the researchers and (4) existing initiatives were analyzed and clustered. This phase is related to the *contextualization* phase as described by Pierson en Lievens (2005).

Intake and pre-assessment. When setting up a co-creative ecosystem with end-users, it is important to *select* the most valuable individuals. Although this is often overlooked, it is important to reflect on the desired end-user profiles to involve in the project. This allows, for example, the detection and activation of Lead Users (Schuurman & De Marez, 2012). For this project, a survey was distributed, both online and offline (schools), amongst youngsters (15 – 29 years old) in the Ghent region. Besides the selection of relevant end-users, knowledge was acquired on current media usage patterns and opinions towards regional broadcasting, and AVS in specific. Moreover, a first estimation was made of the adoption potential of a mobile reporter application and some crucial determinants for market success were identified.

Co-create. In the next phase, a co-creation workshop was organized with seven Lead Users, two AVS representatives, two researchers and two developers. The workshop focused on existing frustrations, habits, usage patterns and opportunities for all stakeholders. Besides some global discussions, pairs of respondents created paper mockups of possible mobile applications to overcome current barriers and harness opportunities. This phase is linked to what Pierson & Lievens (2005) describe as the *concretization* phase. These outcomes were presented and discussed in order to reach consensus

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[2] http://www.mediatuin.be/

and to reveal latent opinions. The confrontation of different stakeholders allowed obtaining other point of views, which is defined as *enhancing mutual understanding.*

Internal discussion group. While, due to practical concerns, previous phases only involved AVS representatives, a workshop was organized where the project was discussed internally. While innovation development processes increasingly focus on the end-user, employees of the organization are often overlooked. Nevertheless, it is important to include the organization members itself in the innovation ecosystem and consider employees as a distinct user group. For start-ups and small SMEs, this is rather easy, but the larger the company or organization, the more difficult this becomes. When discussing the results of the project so far with the company employees, interesting opinions, barriers and conflicts surfaced. These insights could be taken into account when developing the innovation and were proof of the importance of *internal and external resonance*, meaning that an innovation needs to be in line with internal factors (within the media organization) as well as external factors (concerning end-users and contextual elements).

Figure 1. The Living Lab process for the AVS case
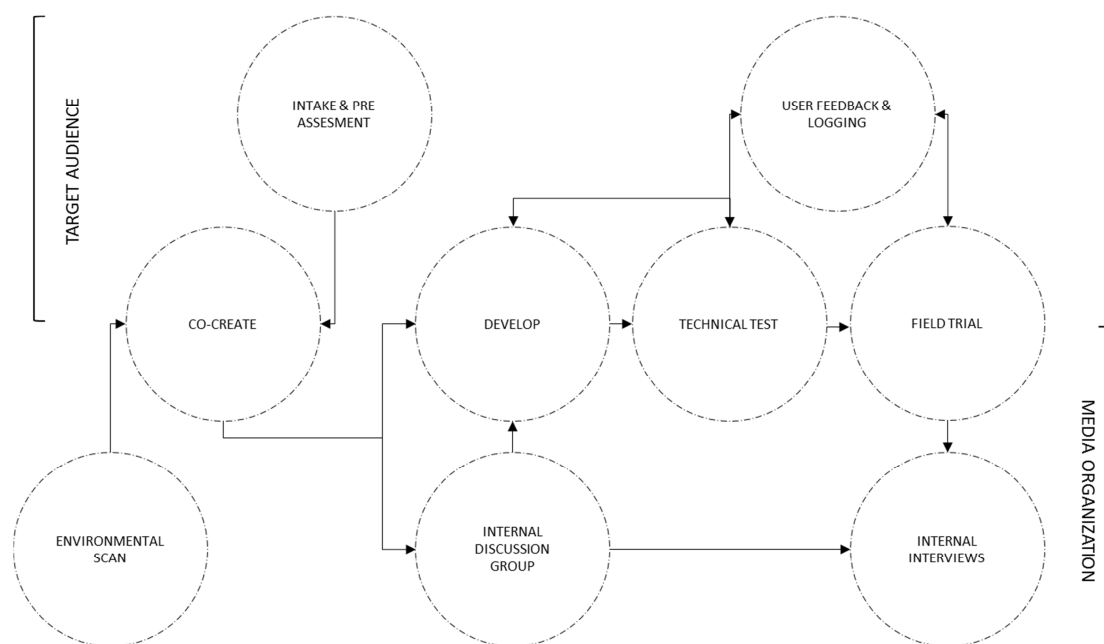
Develop. With the paper prototypes in mind, the developers started to develop a working prototype. In this case, the development was performed by students of Ghent University, who were also present at the co-creation workshop.

Technical test (including feedback & logging). Once developed, the working prototype was technically tested in a real-life context by a small selection (n=13) of end-users and AVS employees. The test focused on the technical aspects of the mobile application on the smartphone (including some rudimental usability parameters such as scaling and readability on different devices) and the implementation in the technical infrastructure at the media organization (e.g. databases, technical

redaction process, and implementation on the website). Feedback was gathered through e-mail by the project researchers and fed back to the developers and to AVS. This way, the acquired insights allowed for an iterative optimization of the mobile application.

Field trial (including user feedback & logging). After the technical fine tuning, the innovation was implemented on a larger scale (n=35), but still presented as a beta product. Nevertheless, the mobile application was embedded in a real-world ecosystem, meaning that it was actively governed by AVS and part of the redaction process. Research during this phase was mainly focused on the end-user. Feedback was gathered through three waves of online surveys, data logging and ten in depth-interviews. In order to stimulate full usage of the innovation, challenges were formulated every two days during the course of the field trial. Opposed to the technical test, the focus in this phase was on revealing motivational constructs, effects of the innovation on attitudes towards regional journalism, usage patterns and the adoption potential of the application.

Internal interviews. Although the innovation was fully implemented in the organization as well during the field trial, the perspective of the organization was only given attention once the field trial had ended. By means of four follow-up interviews with AVS employees, insights and attitudes from the news redaction towards the project were acquired. These insights included general attitudes such as the openness towards the innovation, perceived usefulness, future prospects and perceived influence on the organizational structure, policy and processes, but also technical issues such as the need for certain functions in the mobile application and the content management platform.

■ **Open Innovation and user involvement**

External pressure causes regional media organizations such as AVS to innovate in order to survive. While the company could have chosen the path of a closed internal R&D process, open innovation principles were embraced and the company reached out for external knowledge. Since AVS has no in-house expertise regarding end-user involvement in innovation development processes, iMinds, an organization funded by the Flemish government to stimulate innovation in Media and ICT, was involved to facilitate a Living Lab project. Besides bringing in expertise on user research and development skills (Ghent University), iMinds-iLab.o provided infrastructural assistance (e.g. panel management) and allowed reuse of existing data sources, an example of a retention process (Lichtenthaler & Lichtenthaler, 2009). The use of the Living Lab framework facilitated the interaction between AVS and the outside world, mediated and governed by the researchers. The project itself can be seen as an innovation ecosystem which allowed for different stakeholders to come together and collaborate. In this case, stakeholders included AVS, iMinds, Ghent University, developers and end-users (young inhabitants of the Ghent region). In line with literature on triple and quadruple helix-models (Arnkil, Järvensivu, Koski, & Piirainen, 2010; Etzkowitz, 2008), this Living Lab project contributed to the facilitation (reducing friction) of public-private-people partnerships (Leminen, Westerlund, & Nyström, 2012). Whereas AVS as a brand had a rather negative connotation for youngsters in the Ghent region, the Living Lab as an 'independent' entity allowed to approach the target population more easily and increased the potential for open debate. Therefore, the Living Lab could be considered as a 'neutral battle arena' which allowed for all stakeholders to speak, create and act in an unhampered way. While triple and quadruple helix models focus on the different actors and roles within the collaborative ecosystem, the AVS case illustrates that it is important to consider

the Living Lab itself as a distinct actor in the ecosystem, governing interaction through its neutrality and facilitating open collaboration by organizing different research activities.

On top of that, the Living Lab ecosystem acted as a platform for internal experiment and change as well. By implementing the innovation ecosystem in the organization, stakeholders within the company were involved in the research and development track from the early stages on. This companywide involvement allowed for 'intra-firm' open innovation on top of the involvement of external stakeholders. Not only did this generate additional insights, it also improved knowledge exchange and support throughout the company hierarchy. These processes increase the absorptive capacity of AVS as an organization. Cohen & Levinthal (1990, p.128) define absorptive capacity as '*the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial ends*'. In other words, facilitating internalization of external knowledge and internal knowledge transfers, which resonate with this external information, enhances the potential of the company to govern and translate knowledge to generate added value. The concept of absorptive capacity can be deconstructed in four components (Zahra & George, 2002): (1) knowledge *acquisition* (gathering external knowledge), (2) *assimilation* (govern, process and understand the gathered knowledge), (3) *transformation* (recognize opportunities and integration in the firms knowledge base) and (4) *exploitation* (applying acquired knowledge by developing and exploiting innovations). The AVS Living Lab project increased all four dimensions of absorptive capacity for the media company:

- ▪ *Acquisition*: The Living Lab methodology and infrastructure combined with the expertise of university researchers facilitated the generation of knowledge which would otherwise be hard for the media organization to obtain. By means of a multi-method approach, the nature of the generated knowledge was diverse and covered different domains.
- ▪ *Assimilation*: Knowledge was governed through the stage-gate nature of the Living Lab project, including stakeholder meetings between each research phase (summarizing, analyzing and discussing acquired knowledge). On top of that, confronting the different stakeholders in a co-creation session enhanced mutual understanding and contextualization.
- ▪ *Transformation*: Within the innovation ecosystem, the 'funnel process' of the innovation was (semi-)governed by all stakeholders. Especially the co-creation workshop played an important role in increasing transformative capacity. During this workshop, all stakeholders were challenged to translate previously acquired knowledge into an actual product. The internal discussions on the other hand fostered a companywide knowledge transfer.
- ▪ *Exploitation*: The development of the innovation was facilitated by the involvement of student developers. Since AVS has no in-house application developers, the internalization of external skills increased the exploitation capacity. The Living Lab ecosystem allowed the technical testing and the actual implementation of a working prototype in a real-world context (validation).

■ **Transition management**

As argued before, Living Lab projects do not only govern interactions with end-users, but also facilitate change at the organizational level. When SMEs are involved in innovation development processes, the company size allows for a relative frictionless internal knowledge exchange. Such organizations often have no extensive hierarchy and responsibilities are mostly interconnected. In a

large company with a strong hierarchy, however, fluid collaboration and involvement throughout the company is more complicated. For innovations to be successful in such context, focusing on internal processes of knowledge exchange and support is of major importance, especially in sectors that have a relatively high resistance to innovation, such as the news sector (as discussed in the introduction). Figure 2 presents a conceptual framework to describe transition and innovation within a company on the micro level (individual projects and actions), the meso level (supporting structures and dimensions) and the macro level (companywide, latent dimension).

Setting up a Living Lab project was important for the company to innovate. More specifically, what happened was that the AVS Living Lab empowered innovative individuals and innovative ideas within the organization. It provided them with a powerful tool to get things done, which would otherwise be hard or impossible, due to the strong hierarchy and the relative innovation resistance of the organization (see research context). The Living Lab deployed an innovation ecosystem which was, to some extent, considered as external to the organization, which meant that it was subject to other 'rules' and processes. Nevertheless, the role of the individual *change agents* within the organization cannot be underestimated. Although a Living Lab has the potential to empower individuals within the organization, Living Labs are not able to create successful innovations without the presence of such internal change agents.

Figure 2. Conceptual model for organizational transition through Living Labs
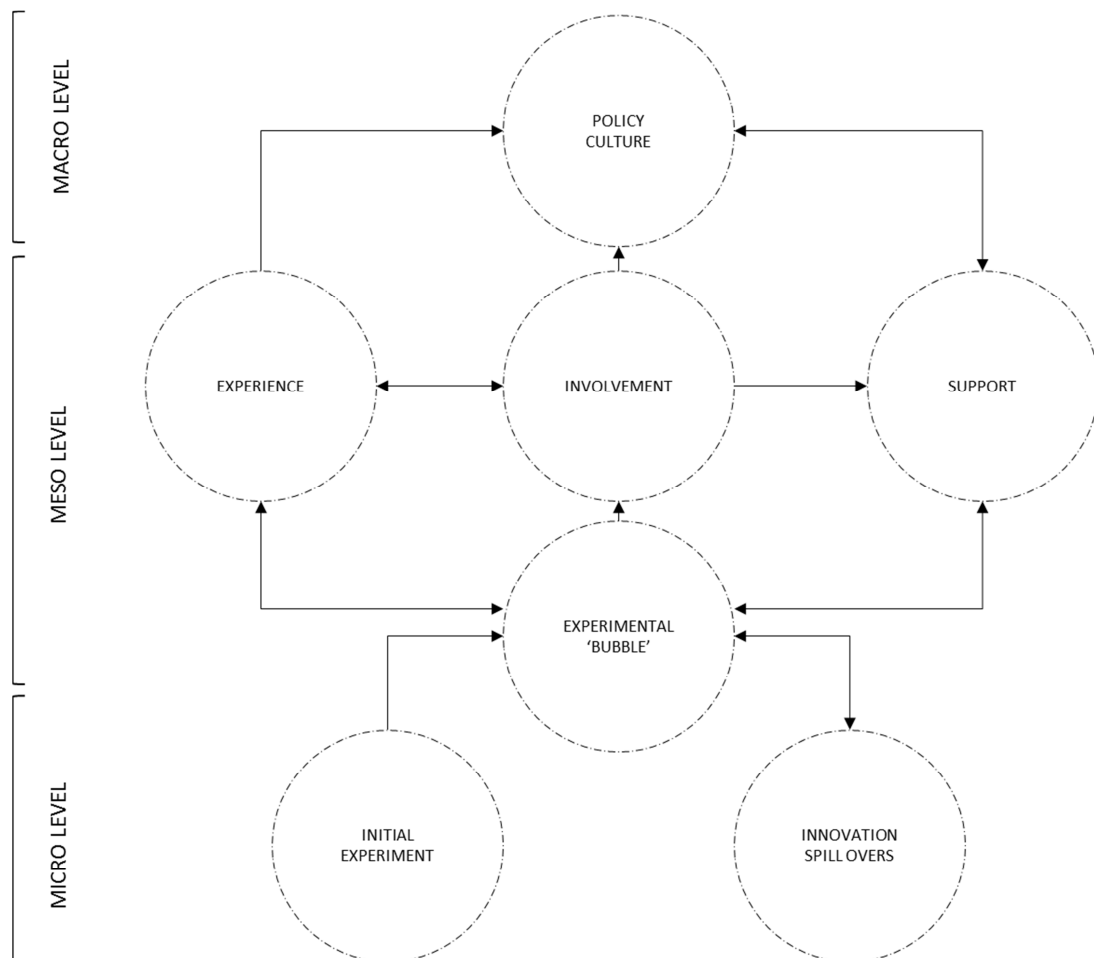
When it comes to broader organizational change, Living Labs allow for the development and implementation of a single experiment. However, because this experiment is part of an innovation ecosystem, rather than the organization itself, existing company processes and rules can be stretched. The innovation and everything that surrounds it is, within a limited timeframe, allowed to explore new dimensions. This creates an *experimental bubble* which can be defined as a set of parameters that is, for a certain moment in time and within certain boundaries, allowed to be subject of experiment and temporarily relieved from binding structures. Such 'void' also has innovative *spillover effects* on other dimensions related to the innovation. In the case of AVS, the mobile application project stimulated the development of a new website and a social media strategy for the company. Both elements were caused by (1) acquired and internalized knowledge during the Living Lab project, (2) necessary changes on interrelated domains for the implementation of the working prototype and (3) the slipstream of 'getting things done' (momentum).

On a meso level, the Living Lab experiment and the related experimental bubble involved the whole company ecosystem. As discussed in the open innovation section, this caused every employee in the company to participate in the innovation development process, thereby increasing *involvement* and *support* for innovative ideas and concepts within the company. What is more, micro level experiments that are implemented companywide make it possible for every employee to experience innovative concepts. The experimental bubble within the company therefore allows transcending discussions and possible idea blockers (related to innovation resistance) and, within a certain timeframe, to actually implement (radical) innovations. Such experience based knowledge is different in nature, as opposed to 'hypothetical' knowledge, and improves discussions on future policy and broader organizational change. This brings us to the macro level, where different experiments within a single experimental bubble or more experimental bubbles come together to influence policy and company culture. Internalization of knowledge on this level is also related to absorptive capacity. Because of the limited timeframe(s) of the experiment(s), a media company can acquire valuable knowledge that can be transformed in policy changes with relatively low risks. At the same time it allows for individuals within the organization to explore innovative ideas and increase support throughout the company, thus changing the company culture by stimulating an innovative mindset.

Conclusion

This paper describes Living Labs as open innovation ecosystems, enabling (media) organizations to reach out and collaborate with their (potential) audience and other external actors, but also as an open, innovative 'battle arena' for the organization itself. It governs different expectations, enables conflicting opinions to come together and steadily grow towards a central concept. Moreover, the innovation development process within the Living Lab has interesting spill-over effects on the organizational level, catalyzing a broader organizational change. This allows coping with the rapidly changing environment more quickly and more efficiently, as it increases the absorptive capacity (Löwik, 2013) of the organization by facilitating exploration, creation and experimentation. As for the role of user research in this process, this paper sees the Living Lab as an enabling infrastructure and user research as one of the roles within the ecosystem. In this respect, analogies can be made with

triple or quadruple helix literature (Etzkowitz, 2008; Arnkil, et al., 2010), with the main difference that the Living Lab itself has a distinct role in the ecosystem, allowing for neutrality and open collaboration. The presented conceptual model and the analysis of the studied dimensions provide insights into the added value of neutrally governed user-centric innovation development ecosystems, such as Living Labs, for both organizational and service innovation.

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