How Can City Labs Enhance the Citizens' Motivation in Different Types of Innovation Activities?

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Abstract. There is a wide diversity of city labs for collaborative innovation. However, in all cases their success depends on motivating citizens to participate in their activities. This article builds on the literature on innovation dynamics in Living Labs to link them with other kinds of City Labs. The contribution of this article consists on building on the types of innovation mechanisms in Living Lab networks (Leminen, Westerlund, & Nyström, 2012; Leminen, 2013) by relating each type to a different theoretical innovation logic (methods for creativity; social innovation; open innovation; user innovation). Each logic is related to a different type of localized space of collective innovation (Fab Labs, co-creation spaces, Living Labs, coworking spaces and hackerspaces) and participants' motivation to collaborate. The literature review on the main characteristics of each logic provide some guidelines for City Labs practitioners about how to motivate citizens.

Keywords: Motivation to collaborate · Hackerspaces · Coworking spaces · Fab Labs · Open innovation · Social innovation · User innovation · Living Labs · City labs

1   Introduction

There is still a lack of common understanding about how to increase the citizens' involvement, in part due to the heterogeneity of practices and concepts behind City Labs.

The term City Lab can be used as an umbrella term under which a large diversity of projects and activities can be included. Often, definitions of the concept are close to the ones of other kinds of localized spaces of collective innovation (LSCI) like makerspaces, hackerspaces, Living Labs, Fab Labs, co-creation spaces or coworking spaces. Different denominations are related to different types of innovation logics and to different participants' motivations dynamics. Thus, the study of the innovation dynamics of other types of LSCI will contribute to understand the diversity of practices within Living Labs and the most efficient ways to motivate and engage participants. By analyzing the motivation of participants in the innovation dynamics of different LSCI, the article aims to provide some guides to city labs practitioners to increase the engagement of citizens.

2   Different Approaches to City Labs

The typology based on the coordination and participation approaches in Living Lab networks (Leminen et al., 2012; Leminen, 2013) is especially convenient for disentangling the different citizens' motivations in City Labs as it focuses on the stakeholders' role in the innovation processes rather than on the processes, methodologies or systems.

According to this view, four approaches are identified, based on the different roles of Living Labs as providers, users, utilizers, and enablers (Westerlund & Leminen, 2011):

1. Provider-driven mechanism: The innovation activities of the Living lab aim to develop a solution for participants or other stakeholders, or have an educational purpose.
2. Enabler-driven mechanism: Taking a bottom-up approach, the activities focus on fulfilling the needs of a local community or association like improving the local social development where the Living Lab is located.
3. Utilizer-driven mechanism: The participants' activities are designed to develop or improve the product or service of a third-party (the utilizer).
4. User-driven mechanism: The participants collaborate to develop their own personal ideas or projects. Living labs activities focus on fulfilling the needs of individual users or user communities.

3   Enhancing Motivation in Different Localized Spaces of Collective Innovation

3.1   Methods and Techniques to Channel Collective Creativity (Provider-Driven Activities)

Innovation through collective participation is facilitated by the use of methodologies that guide participants' creativity to reach innovative solutions to current problems. There are a multiple methods, techniques and approaches that have been developed by academics and practitioners to ignite and channel the participants' creativity and imagination like TRIZ, C-K, Creative problem solving (CPS) or design thinking.
Co-creation activities following a given method can take place in virtual or localized environments. Localized spaces offer the advantage of facilitating the sharing of tacit knowledge and face-to-face interaction. They also allow the use of physical objects and the construction of prototypes that support the creation process (T. Brown, 2008). Consequently, Design Thinking and other similar innovation methodologies will benefit from taking place in spaces optimized for the construction of prototypes and models (Kelley, 2001), like Fab Labs.

The Fab Lab concept originated in MIT's interdisciplinary Center for Bits and Atoms where a first lab was put in place empowering students to make (almost) anything (Gershenfeld, 2005) by the use of new technological tools for rapid prototyping like 3D printers, laser cutters, and programmable sewing machines that allow

small-scale production. They serve a wide spectrum of users, from youth, inventors as well as companies and students. They also serve multiple uses like teaching, professional development, applied research and research services.

3.2   Social Innovation Focus (Enabler-Driven Activities)

Social innovation can be defined as "innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organizations whose primary purposes are social." (Mulgan, Tucker, Ali, & Sanders, 2007). Thus social innovation is differentiated from traditional business innovation as the latter is characterized by the profit maximization and the commercial exploitation of innovative endeavors. Between these two extremes, there is a large gray zone that includes other types of innovation that have both an economic and social goal, for instance, like innovation in social entrepreneurship.

The mere social collective benefit of the resulting social innovation is not sufficient to engage participation. The successful evolution of a social innovation, as in the case of any type of innovation, requires convincing new followers to adopt it. In the case of social innovation, the main types of resistance to people's participation are related to the short/term efficiency loss, the fear of risks and the loss of the current status quo, the resistance to change and the strong social ties (Mulgan et al., 2007). Consequently, to motivate participation, the promoter has to convince of the long-term benefits of participation, compared to a potential efficiency decrease and resistance to change in the short-term.

Changing mentalities, routines and practices is one of the biggest challenges of social innovators. Thus, participants in social innovation activities will be more inclined to contribute if they are already sensitive to social issues and share the values of social innovation. Local impact might also facilitate the participation of citizens. Short-term positive results can motivate and engage a larger local community, however, the lack of visible results or not implementing the results of the collaborative efforts might result in participants' deception and demotivation.

Grassroots emerging spaces, like coworking spaces focused on social innovation are deeply embedded in the local social environment and represent platforms for participation in social innovation for the local community.

Coworking spaces with a social innovation focus are not only platforms of interaction and collaboration among social innovators and entrepreneurs but also attract individuals interested in collaborating in social innovation initiatives.

The social entrepreneurs and innovators in coworking spaces tend to dedicate their efforts in the benefit of the local community. Communities that emerge in such spaces are in general self-managed, autonomous, and do not depend on public funds. This aspect allows the community to be deeply embedded in the local community and attract the participation of neighbors. However, despite the social goal of social entrepreneurs, their for-profit focus can refrain them from getting involved in pure social innovation.

3.3   Open Innovation Focus (Utilizer-Driven Activities)

The term open innovation has been used to refer to a system where innovation is not developed exclusively internally within a firm, but using external sources (Chesbrough, 2003; Laursen & Salter, 2006).

To link the firms internal innovation process and the external sources of knowledge and expertise, open innovation often requires the intervention of intermediaries (Chesbrough, 2006). Such innovation intermediaries might be virtual online platforms (like Innocentive or Nine Sigma) than allow the interaction of external participants to respond to the firms' needs and proposed challenges. Additionally, localized spaces of collective innovation like Living Labs can also fulfill this role of intermediary, facilitating the users' participation and coordinating innovation processes (Almirall & Wareham, 2010).

Participants in open innovation activities accept to contribute to an innovation process in order to develop a new product or service for an organization that will commercialize the innovative endeavor in the market.

Open innovation participation often uses virtual online platforms as intermediaries. Virtual open innovation processes are however not out of this world as "innovation processes [...] do not happen in a void but are carried out somewhere – they literally take place" (Haner & Bakke, 2004, p. 5).

Face-to-face interaction offers though advantages for collaborative innovation. Even in the case of virtual teams, the periodic co/location of the members facilitates the success of the innovation project (Gassmann & von Zedtwitz, 2003; Leonard & Swap, 1999).

Localized activities of open innovation can take place in different spaces. Experiences of organizing open innovation workshops in Living Labs have encounters difficulties of both attracting participants and firms.

3.4   User Innovation Focus (User-Driven Activities)

An important differentiation has to be made between the role of users in open innovation and in user innovation. While in the open innovation model, users participate in the innovation process responding to the challenges proposed by a firm, in the user innovation concept, users innovate in a self-motivated and autonomous way (von Hippel, 1994, 2005, 2007).

Users often innovate in user communities, critical in the processes of prototyping, developing and diffusing solutions to their needs. Collaboration within communities accelerates the development and simultaneous experimentation of novelties (Shah, 2005). These communities are characterized by being emergent, autonomous and by sharing knowledge openly. These communities contrast with the dynamics in traditional corporate R&D departments where new knowledge and innovations are internally kept.

These communities are characterized by the voluntary participation of loosely-affiliated users with common interests. Communities members engage in the development and testing on innovations through an iterative process of trial and error

where members give feedback to one another to advance in the development and improvement of products. These communities are intimately related to practice, and can be assimilated to the communities of practices (J. Brown & Duguid, 2000; Wenger, 1998a). Even if community members might interact through virtual communication, temporary co-location allow the common practice of the hobby (i.e. in the case of sports) or the sharing of tools and machines needed for prototyping. Face-to-face interaction also reinforces the community identity and facilitates the transfer of tacit knowledge (Lave & Wenger, 1991; Wenger, 1998b).

The open sharing of knowledge, information and innovations are crucial in the collaborative work if innovation communities. Users are motivated to share their innovative work and engage in collaboration, however, user-innovators might also be motivated to not diffuse their work to third-parties. The appropriation of the innovation by a third party could impede a further development by users. Innovation communities might put in place several mechanisms to forbid external actors to take advantage of their innovations. For instance, the public exhibition or documentation of innovation, or registering innovations with open licenses that avoid the commercialization or appropriation of the innovations.

Beyond the intrinsic motivation, innovation communities and users might also engage in entrepreneurship practices and commercialize their own innovations, mainly in the cases of wide adoption of the innovation with the consequent appearance of potential buyers (Shah, 2005).

Even though hacker spaces or other similar terms like hacklabs (Maxigas, 2012) do not respond to a clear definition, they could be straightforwardly defined as being communities' workspaces which operate on the principles of hacker ethics (Farr, 2009; Himanen, 2009; Levy, 2001). They are driven by an open culture that, through a sharing attitude and a peer-to-peer approach, can enhance the development of distributed networks and social bonds (Bauwens, 2005). Emerging from the counter culture (Grenzfurthner & Schneider, 2009), hackerspaces are a large set of differing places, with one ubiquitous feature: a community of enthusiasts sharing a common motivation (Schlesinger, Islam, & MacNeill, 2010). Altruism, community commitment, meeting other hackers in the real world and having fun seem to be the most important factors of motivation (Moilanen, 2012).

4   Managerial Implications

One of the biggest challenges that City Labs' managers encounter is to engage citizens in their innovation activities. Research on motivation in creativity and innovation has underlined the crucial role that intrinsic motivations plays in engaging participation (Amabile, 1996). In the cases of a bottom-up innovation modes, participants co-develop innovation projects for their own benefit. In the case of enabler-driven activities, the innovation project would impact the social local environment of participants. In this case, the rationale that could motivate participants would be "I am here to contribute to a project for my society". In user-driven activities, participants are empowered to develop their own innovative projects for their own private benefit.

In bottom-up innovation modes, managers should focus on providing the required tools and needed resources for reaching successfully the emerging project goal. However too much intervention or over-management could be counterproductive. In enabler-driven activities, participants should manage their own-created expectations with the available resources. Otherwise, they could feel demotivated if finally the forecasted results are not fulfilled. In the case of user-driven activities, emergent user communities might be reluctant to management control, as has been referred in the literature on communities of practice (Wenger, 1998b).

In provider- and utilizer-driven activities, participants might be more motivated by participating in the innovation process rather than by benefiting of the final product resulting from the collaboration. In these cases, managers could increase the participants engagement by focusing on designing an attractive and enriching ideation process. Provider-driven activities allow the participation of a wide spectrum of participants that encourages the combination of different knowledge bases. Methodologies, tools and techniques facilitate the guidance and coaching all along the process, ensuring its consistency, replicability and control. However, following a too strict process protocol risks to reduce opportunities for unexpectedness and improvisation that could benefit creativity and imagination. In the case of utilizer-driven activities, the commercial exploitation of the collaborative innovation by a firm could refrain participation unless if participation is incentivized by monetary rewards. However, managers should not only focus on extrinsic motivation of participants, and also focus on nurturing a creative and enjoyable environment to attract engagement more based on intrinsic factors of motivation.

5   Conclusion

The article underlines the uniqueness of City Labs as they represent spaces where different types of innovators can interact and thus benefit from synergies, diversity and cross-pollination of ideas. The different approaches are however not mutually incompatible, and might be implemented simultaneously in different collaborative projects in a same City Lab. Nevertheless, in some cases, a conflict between logics might create a cognitive dissonance in the participants and thus inhibit participation. By clarifying the different logics and individuals motivations, the article aims to provide guidelines to City Lab managers and practitioners to maximize the participation and therefore ensure the sustainability of the City Lab activities.

The comparison of types of activities in City Labs, theoretical innovation approaches, and types of LSCI that has been developed in this article presents some limitations. First, in an effort of simplification, LSCI have been only related to one type of innovation. However, reality is more complex and each kind of space might present several types of innovation activities. Second, there is also a great diversity of practices among spaces of a same LSCI type. For instance, some Fab Labs do similar activities as hacker- or makerspaces. The differences identified in the analysis have underlined the context of innovation rather than the specific practices. For instance, even if practices between Fab Labs and hackerspaces are comparable, the approach is different: hackers are firstly driven by their hacker ethic, while Fab Labs are ruled by their common charter.

The contribution of this paper is threefold: managerial, conceptual, and theoretical. First, through a literature review on innovation modes and their motivation logic, the article provides some useful perspectives for City Labs managers on how to engage participants. Second, conceptually, the comparison of different LSCI has contributed to understand new phenomena of localized collaboration and innovation, as well as their differences and similarities. Third, the article contributes to the theorization of City Labs by using different innovation theories.

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