How empowering is social innovation? Identifying barriers to participation in community driven innovation

*Monica Edwards-Schachter
and Svenja Tams
Universitat Politècnica de València and
University of Bath, Spain/UK*

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How Empowering is Social Innovation?
Identifying Barriers to Participation in Community-driven Innovation

Edwards-Schachter[1], M. & Tams[2], S.

[1] Dr. Mónica Edwards-Schachter, INGENIO (CSIC-UPV),
  Universitat Politècnica de València, Camino de Vera s/n Edif. 8 Acc. J. 46022-
  Valencia (Spain) - +34 963 877 007 Ext. 88495 - Fax. +34 (0) 7580 759 554,
   moed@ingenio.upv.es

[2] Dr. Svenja Tams, School of Management, University of Bath.
  Bath BA2 7AY. UK - +44 (0) 1225 386 683, *s.tams@bath.ac.uk*

Abstract

Empowerment and community participation have been recognized as means and outcomes of social innovations. In the last decade, these ideas have been reflected in the growing movement of formal and informal 'Living Labs' (LLs). They are emerging as a new model of organizing collaborative innovation processes with the participation of business, government and civil actors. LLs constitute knowledge hubs that are opening a contested terrain in which habitual distinctions between 'producers' and 'users' of knowledge are increasingly blurred. This chapter investigates actors' perceptions about power and knowledge relationships in a Living Lab context. We present an in-depth study case, complemented with information of 120 Living Labs obtained from the European Network of Living Labs (ENoLL) website and other secondary sources. Our findings show that participation and empowerment are constrained by relational, structural and cultural barriers. Understanding power and knowledge dynamics in innovation processes entails broadening our analytical and practical lens to consider knowledge asymmetries and struggles between 'instrumental' and 'transformative' rationalities. Findings suggest that the governance of LLs and similar models of collaborative innovation needs to consider how the power dynamics of a given context can enable or constrain the empowerment of people as 'users' and 'co-creators' of knowledge.

1 Introduction

Empowerment and community participation have been recognized as central to mobilizing the creativity and synergies of people in their communities and enablers to growing the pace of social innovation (Mulgan, 2006; Heiskala, 2007; Goldsmith, 2010; BEPA, 2010; Franz et al., 2012). Likewise, empowerment and community participation are considered instruments to tackle societal challenges. In other words, they are simultaneously, means and outcomes of social innovation (SI) (Howaldt & Schwarz, 2010; Franz et al., 2012; Loogma et al., 2012). In the European Union (EU), the goal of achieving greater citizen participation seeks to address the declining European competitiveness, the reduction of welfare programs, and reforms in the provision of public services (Mayo & Craig, 1995; Van den Hove et al., 2012). In a context where social exclusion is at the rise, innovative bottom-up initiatives are being actively proposed to help groups and communities cope with marginalization and deprivation (Boyle & Harris, 2010; Moulaert et al., 2010; CE, 2013). SIs are increasingly organized through a range of social experiments, often labeled as 'innovation labs', Living Labs, Change Labs, Rural Labs, social clusters, among others (Schumacher & Niitamo, 2008; Murray et al., 2010; Cunningham et al., 2012). These 'innovation labs' represent new models of organizing collaborative innovation processes by involving diverse actors, including users, communities, business, public and civil society sectors. These cross-sector and Private,

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Public and People Partnerships (PPPPs) have been fostered under the umbrella of the Europe 2020 Flagship Initiative Innovation Union[1] (EC, 2010). For example, the European Network of Living Labs (ENoLL) emerged in 2006 with support of European ICT programmes (CE, 2009; Dutilleul et al., 2010).

Although there is no consensus on the Living Lab (LL) concept, they are generally characterized by their 'openness' to the participation of users and communities in collaborative innovation processes (Eriksson et al., 2005; Følstad, 2008; Almirall et al., 2012). LLs are described in terms of the benefits of greater participation by a diversity of stakeholders[2] (communities of practice, users and 'ordinary' people) who have traditionally been ignored in conventional innovation (Bergvall-Kåreborn & Ståhlbröst, 2009; Schaffers & Turkama, 2012). However, LLs differ in their purposes, scope, size, stakeholders, and the level of engagement by users and communities. Less powerful actors who lack resources, voice, or legitimacy may be excluded from collaborative processes or may be co-opted by more dominant parties (Poncelet, 2001; Heiskala, 2007; Brown et al., 2009; Purdy, 2012). To maintain established power relations, participation can become a token exercise without genuine empowerment. Furthermore, the aim to change formal and informal power relations to enable the emergence of new social action can undermine vested interests (Murray et al., 2010). This literature suggests the need for a critical deconstruction of the egalitarian aspirations implied in the discourse surrounding collaborative innovation and participation of 'users' and 'communities' in LLs, including related notions such 'open', 'community-driven', 'community-based', 'human-centered' and 'user-centered' and their contribution in the process of 'co-creation', 'co-design' and 'co-production' of knowledge.

Despite their fast global expansion[3], little research has been conducted on LLs from the perspective of social innovation processes[4] (Mulgan, 2006). Moreover, in both innovation and organizational literature there remains a limited understanding of how power dynamics between multiple-stakeholders affect the generation of knowledge and SIs (Everett & Jamal, 2004). In this context, we aim to explore with 'practical lens' (Gherardi, 2009) the 'socially constructing complexity' and issues of power, knowledge and knowing in organizations among actors from public, private and civil society sectors. In particular:

- How do actors in community-based innovations perceive empowerment and participation in the knowledge generation process?

- Which conditions enable, or constrain, empowerment and participation in community-driven innovation?

2 Knowledge and power dynamics in collaborative innovation processes

Analyzing power and knowledge relationships in multi-stakeholder collaborative settings is challenging. These settings are ambiguous, complex and evolving since participants, social structures, and processes can change rapidly (Huxham & Vangen 2000). Mainstream innovation scholars like Chesbrough (2003) and Garud et al. (2013) draw attention to significant transformations in innovation processes, describing them as increasingly complex, interactive and 'open'. These processes are co-evolutionary (implicating multiple levels of analysis), relational (involving a diverse set of social actors and material elements), inter-temporal (experienced in multiple ways during their evolution) and cultural (unfolding within contextualized settings) (Garud et al., 2013).

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1   The EC document states that 'social innovations are not yet producing the impact that they should', adding 'There must be more support for experimentation. Approaches that have clear advantages over current practice then need to be scaled up and disseminated' (EC, 2010, p. 21).
2   Literature about the differences between the words 'actor', 'agent' and 'stakeholder' is not conclusive. The term 'stakeholder' is widely used referring to persons, groups or organizations, in particular in public and non-profit management theory (Bryson, 2004). In this work we follow the definition of Eden and Ackerman (1998) who consider that stakeholders or actors can be people or groups who have the power to directly affect or construct an organization. Collaboration between actors/stakeholders and how they do, learn and practice are intrinsic to the notion of community and knowledge in social innovation processes
3   http://www.openlivinglabs.eu/llmap_cc
4   Innovation processes have been widely investigated from the perspective of economic studies of innovation, usually focused on the central role of firms and ignoring power and knowledge relationships (Rothwell, 1994).

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We argue that power is a phenomenon intrinsically related to knowledge which is constrained by relational, structural and cultural conditions, including psychological aspects (Foucault, 1977, 1982; Giddens, 1984; Bourdieu, 1989; Heiskala, 2001). We use the notion of 'power dynamics' to refer to the conscious, and often unconscious processes involving social practices that emerge as participants set up, manage and engage in collaborative innovation.

Power dynamics are grounded in the aims and characteristics of the specific innovation challenge and the 'social space of knowing' where learning can take place. Power dynamics shape experimentation in the learning space (which is experimental and heuristic in nature) and the 'reality' of how actors seek to solve problems. Power struggles between normative and empirical knowledge can become an obstacle in the process of developing a 'common meaning system' between actors (Scott, 2008). For example, if a collaborative network is built around strongly differentiated technical and professional expertise by some stakeholders, partners are more likely to reproduce high power distance in their interaction. Power can be constructed as a negative and divisive force in relations, groups and organizations, but also can be constructed as a positive, integrative force providing rewards, inducements, and reinforcements throughout collaboration, embracing knowledge, perceptions and emotions (Lawler & Proell, 2009; Voronov & Vince, 2012). In this sense, empowerment 'feeds' the innovative capacity of communities to generate ideas and realize problem-solving, being a prerequisite for successful innovation (Friedman, 1992; Scott, 2008). Knowledge and knowing in collaborative contexts are intrinsically related to this innovative capacity and involve a deliberative process of power dialogue between actors, where knowledge and power are mutually constitutive and inseparable (Foucault, 1980). Stakeholders' power interactions and practices enact 'knowledge embedded in a community', comprising the notion of knowledge embedded in individuals and also as socially constructed objects (Wasko & Faraj, 2000). We argue that LLs depict new organizational models with participation of multiple stakeholders where innovation differ not only from pre-existing models in several features (like goals, roles and authority relations) but, especially, in types and modes of producing knowledge. Power dynamics are embedded in the deliberative ways by which knowledge is created and legitimated (Foucault, 1982). Innovation outcomes result from this deliberative process which involves:

1.   The re-combination and generation of new knowledge in 'learning by interacting' processes, including the interplay and transformation of tacit and codified knowledge (Polanyi, 1966).

2.   The struggle for re-cognition and appropriation of different forms of locally produced knowledge, in particular indigenous, ethnographic, instrumental and critical knowledge (Smith et al., 2013), and

3.   A growing need to broaden the 'traditional knowledge bases' for innovation, usually viewed under the 'technological rationality' prism with the hegemonic role of scientific and technological knowledge.

Carayannis and González (2003) maintain that the evolution of the innovation ecosystems is based on knowledge production with people, culture, and technology forming the 'Mode 3' Knowledge Production System. This mode of knowledge production is developed across public and private sectors (government, university, industry, and NGOs, as well as other civil society entities, institutions, and stakeholders). In their view, innovation ecosystems embrace the co-existence, co-evolution, and co-specialization of different knowledge paradigms and different knowledge modes of production and use of knowledge. Despite considerable research on innovation processes (Rothwell, 1994), our understanding of the meaning of knowledge and power dynamics in innovation studies remains limited[5].

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5   From the perspective of the innovation field, Lundvall and Johnson (1994) and Jensen et al. (2007) propose that firms –as principal agents in the 'learning economy'- innovate combining two innovation modes. They are the Science-Technology-Innovation (STI) mode related to explicit (Know-what, know-why) and global knowledge, and the Doing-Using-Interacting (DUI) mode, more implicit and local an related to know-how and know-who. Asheim et al. (2007) consider that knowledge can be analytic, synthetic and symbolic.

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2.1 The relational dimension of knowledge and power dynamics

As a relational phenomenon, power and knowledge are constructed in 'a network of relations, constantly in tension, in activity, rather than a privilege that one might possess' (Foucault, 1977: 26). Power is exercised by actors and is also created by them, influences them, and limits them in their social interactions (Giddens, 1982, 1984). Studying power and knowledge in social interactions requires attention to who decides what, when and how, who remains outside, how this happens, and how 'struggle of meanings' occur (Hayward, 2000). Power interactions imply use and struggle of strategies which are negotiated and may be subverted reflecting moral and political concerns (Foucault, 1977, 1982). Power can be experienced both negatively and positively. From this perspective, non-participation in decision-making can have multiple meanings, as a manifestation of fear and weakness, or of indifference.

2.2 Structure and agency in knowledge and power dynamics

Power and knowledge relationships can be also interpreted as a structure. Giddens (1984) defines 'structure' as sets of rules and resources that actors draw upon as they produce and reproduce society in their social practice.[6] Rules are 'generalisable procedures, implemented in enactment or reproduction of social practices' (1984: 21). Some can be explicit and formally codified, like laws, prohibitions, bureaucratic rules. Or they can be 'unwritten' social rules which individuals use to act (consciously or unconsciously) in social situations. Power is socially structured in the hybrid space of relationships in which individuals and groups exercise their effective influence[7] (Alasuutari, 2010; Heiskala, 2001, 2007). Therefore, the identification of challenges and the search of solutions in LLs through processes of idea generation and knowledge re-combination can be marked by competition, conflict and power imbalances between actors from different organizations. Despite the socially transformative and inclusive aims of collaborative innovation, any mutual engagement of diverse participants is bound to also catalyze differences that result from their different positions in institutional fields, the unequal distribution of the resources and interests they bring to the innovation initiative, but principally in their perceptions of the interactions and situations. Thus, 'power dynamics' stress individual and collective agencies, i.e. respectively, the individual and collective capacity to act (Everett & Jamal, 2004; Selsky & Parker, 2005; Koschman et al., 2012). Power agency –individual or group action- and a 'regime of truth' or 'discourse' can take a long time to change, involving basic changes in perception or thinking.

2.3 The cultural dimension in knowledge and power dynamics

Hayward (2000) maintains that approaches to empowerment do not always pay attention to the cultural aspects, the norms and 'networks of social boundaries' that enable and constrain the behaviour of all actors. Culture consists of socially established structures of meanings (Scott, 2008) where dispositions or 'habitus' are 'spontaneously attuned' and perceived as part of the natural order of things. For example, 'hidden' power can be reproduced through socialised behaviour and cultural norms, and internalised by powerful and powerless actors. 'Symbolic violence' creates 'embodied dispositions' and 'habitus' which enact cultural meanings and perceptions of power (Bourdieu, 1989). These give rise to 'fields' or 'socially stratified spaces', norms and conventions and also values which are incorporated by actors as common beliefs.

Empowerment is essentially a process of change in the systems of meanings that feed the social practices that can be favoured or constrained by these relational, structural and cultural dimensions (Figure 1). At individual level, represent the relationship between culture and power referred to potential and individual capacity and also comprises motivations and strategies associated with an activity (Friedman, 1992; Speer & Hughey, 1995). Culture also relates to cognitive and motivational barriers that can emerge when people with different expertise communicate and interact with

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6   'Society only has form, and that form only has effects on people, in so far as structure is produced and reproduced in what people do' (Giddens & Pierson, 1998: 77)

7   Foucault postulates that the relation between A and B is institutionalized and rationalized to a certain extent. Heiskala (2001: 250) proposes a still broader conception of power, which regards all relations between A and B (also) as power relations, irrespective of whether they embody strategic calculation or are by nature institutional or rationalized. With such an extension of Foucault's structural approach to power, 'each social relation is a power relation and, therefore, power is indeed 'everywhere''

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others in specific socio-cultural contexts (Birrer, 2001). Cultural aspects look back on the definition of empowerment provided by Paulo Freire (1974) as the ability to understand social, political and financial contradictions and to act against the oppressive influences of real life[8].
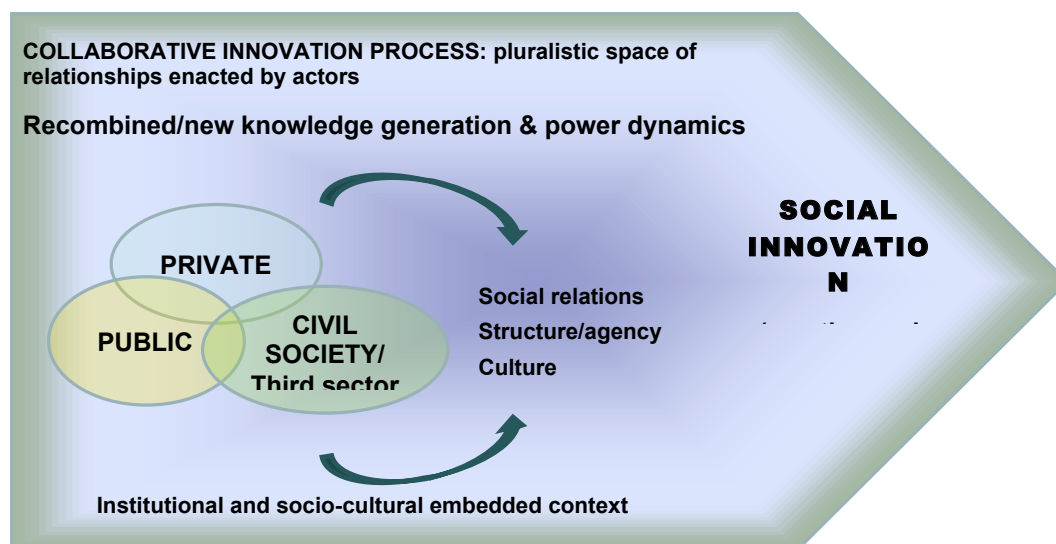

Figure 1. Interrelated dimensions of knowledge generation and power dynamics in collaborative innovation

3 Community-driven innovations and organizational models: exploring the rethoric of LLs in the 'partnering society'

A common reference in the LL literature is the official launch of the ENoLL network in association with the the publication of the Helsinki Manifesto at a conference in 2006. Although the Helsinki Manifesto does not refer to SI, it calls for the adoption of concrete measures for 'a self-renewing, human-centric and competitive Europe' through innovation, in particular, in the services sector. With this aim, the document proposed the creation of ENoLL[9] as 'a new open, user-centric and networked innovation environment' for 'the renewal of the European innovation system from an organizational-centered system to a citizen-centered system' (HM, 2006).

LLs offer a unique research context to study social innovation since they assign to citizens a distinct role as users and producers of knowledge in the innovation processes. Even though LLs were originally conceived as spaces or environments where researchers and designers observing users in experimental settings (Følstad, 2008 the 'political' discourse and criticism on the renewal of innovation systems (see e.g., Cozzens & Sutz, 2010; Foster & Heeks, 2013).), their concept is evolving to SI and social inclusion. To date, research shows a proliferation of definitions of different formal and informal LLs, from small networks to inter and intra-networks of PPPPs (definitions are provided in the Annex).

The LL concept draws onNumerous authors consider that LLs are emerging as 'functional regions focused on the 'social dimension' of innovation, addressing needs and empowering users in their role as citizens (CE, 2009; Santoro & Conte, 2009). A considerable literature now associates LLs with 'community-based' and 'user-centred' innovation (Schumacher & Niitamo, 2008; Følstad,

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8   For an extended discussion on theoretical approaches to power, see Alasuutari (2010).
9   The same document points out that the first phase consist of 20 LLs in 15 Member States acting as 'a cross-regional, cross-national and pre-market network, which creates multi-stakeholder co-operation models for public-private-citizen-partnerships)' (HM, p. 4). ENoLL, established as an international non-profit association headquartered in Brussels, has been growing each year in successive calls for new partners (up to date in 7 'waves', resulting in over 300 accepted LLs, with the creation of CNoLL in China and ANoLL in África).

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2008; Bergvall-Kåreborn & Ståhlbröst, 2009; Ståhlbröst et al., 2013).

4 Methodology

Due the exploratory character of this research, we decided to adopt a case study methodology, including 9 in-depth interviews (5 in 2011 and 4 in 2012) and a focus group meeting, with sufficient contextual diversity to cover the phenomenon under investigation (Eisenhardt, 1989; Yin, 2003). The interview process was ethnographic, using a semi-structured questionnaire (Marshall & Rossman, 1999). For the literature review, we searched scholarly publications between the years 2001-2012, considering scientific journals, conference papers proceedings and books. Secondary information sources were obtained from the Web of Knowledge and Google Scholar databases using the keywords 'living lab' and similar expressions[10] and information from the ENoLL website. In first place we decided to explore the use of the terms 'community-driven' and 'user-driven' in LLs, together with 'empowerment' and 'social innovation'. With this purpose we compiled information from 120 LLs using the application forms required by the ENoLL association to each member (available in its website) and information obtained in each LL website.

5 On the ambiguity of the words 'community' and 'user' as drivers of SI in LLs

Information gathered from 120 LLs shows that the terms 'community-based', 'community-centred', 'community-driven' and 'user-based', 'user-centred', 'user-driven', and 'user-led' are applied for diverse purposes related to innovation. The word 'community' can designate different types of communities: 'community of practice' (Wenger, 2000); 'community of professionals' -from academia, public administration, industry and/or consultation-, 'community of service/technology developers', 'community of public or social stakeholders', 'community of users' or 'people' (for recruiting end-users from the community for specific projects). The word 'user', agreeing with the concept provided by von Hippel (2009) and Gault (2012), can identify both individuals and organizations (some examples in Table 1).

We found that only 31 LLs (25.8 per cent) mention the involvement of users as co-creators. By contrast, the role of users in testing and experimentation is mentioned more frequently (70.8 percent). Participation of users and community 'for needs findings' is considered in 102 LLs (85.0 percent). As several authors observe, in the context of LLs, users are typically seen as sources of predefined technology use and a passive subject of study (Mirijamdotter et al., 2006; Niitamo et al., 2006; Almirall et al., 2012). For them 'knowledge co-creation' is an ambition rather a realized approach.

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10   In our search, we identify terms used with similar meaning to LL, such as 'change labs', 'rural labs', 'spaces for social innovation', 'Social Spaces of Research and Innovation' (SSRI) and 'Social Innovation Cluster'.

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FutureEverythingLab, generated by a 'Community interest Company' in UK
*http://futureeverything.org/ http://www.openlivinglabs.eu/sites/enoll.org/files/086_ENoLL5W_
UK_FutureEverythingLL_3103_1200.pdf*
'A project might involve collaboration between engineers, artists, citizens, business leaders and
policy makers, and need cooperation between public and private, citizens and government, and
between government departments. Such an interdisciplinary approach requires bridging between
silos, and between people working in different professional cultures'

Basaksehir Technology and Innovation Living Lab – BaTILaB, established by a leading
municipality in Turkey to co-design public services
http://www.basaksehir-livinglab.com/
*http://www.openlivinglabs.eu/sites/enoll.org/files/008_ENoLL6W_TR_Basaksehir-Istanbul%20
Living%20Lab.pdf*
'To best meet the needs of users, services must be effectively designed, taking into account the
views of users at the design stage. ICT play a role in democratising innovation by providing
information and allowing users to feed in their views, via mechanisms such as online surveys,
blogs and forums. … These range from simple consultation to more collaborative processes of
design'.

Pisa Living Lab - Leaning Lab, a free association of creative people
http://www.leaninglab.org/
http://www.openlivinglabs.eu/sites/enoll.org/files/leaning-lab.pdf
'evolution and the point of convergence of various local researches and experiences in
participative environments, collaborative problem solving and virtual communities. Our
winning ingredients are multidisciplinarity, collaboration integrated with meritocracy, and
knowledge sharing. Therefore LL participants are considered not only as users, mere customers
of products or clients of services'

Table 1. The role of users and communities in LLs

Open innovation and 'openness' are other common LL feature. 'Openness', in general, represents
the participation and/or formal and informal agreements between multiple-stakeholders (Mulder
et al., 2008; Bergvall-Kåreborn et al. 2009; McPhee et al., 2012). 'Openness' in LLs broadens the
open innovation concept proposed by Chesbrough (2003), suggesting a 'shift' on the relevance of
knowledge sources from the central role of firms to the role of collaborative networks and users.
But 'openness' also represent a 'hybrid' space where technological (and other innovation types)
co-exist with SIs. Our analysis shows that social dynamics, power issues and/or barriers to innova-
tion are practically not considered by LLs literature, with exception of Dutilleul et al. (2010) and
Schaffers and Turkama (2012).

6 Case Study:
CVida Vila-real Living Lab (CVLL)

CVida Vila-real constitutes an example of an informal LL. It emerged as a PPPP organization with
support of the municipal government. This LL was created with intermediation of CVida Vila-real,
a non-profit association. It emerged through a dialogue process (from 2008 to 2010) between a
group of professionals from a local Hospital, business people and researchers from the Institute of
Biomechanics of Valencia (IBV). CVLL started with a series of activities that sought to address
the dramatic grow of unemployment and social exclusion experienced due the economic crisis. It
aimed to establish a direct dialogue between multiple stakeholders, increasing citizens' participa-
tion and collaborative governance in the city. The initial funding was obtained from the Ministry of
Industry, Tourism and Commerce and the European Regional Development Fund (ERDF). Numer-
ous initiatives were implemented, oriented to improve the participation and the empowerment of
people, in particular elderly and deprived groups (around 18 percent of the population). The local
Chamber of Commerce (Cámara de Comercio) provided a physical space and some institutions –

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like the Hospital, schools and residents' associations and community centers – also contributed providing practical support to people participation and identification of social needs.

In a short period of time, under the leadership of the IBV institute, various projects were implemented to develop products and services, in particular in the health sector. In some cases, the projects involved users in experimentation in the IBV research institute in Valencia (where end-users were provided with technology and the effects of the interventions were monitored by researchers). A strategy of action-research interventions was implemented with numerous training activities, workshops and meetings to boost cooperation among different stakeholders. In March 2010, the workshop 'Detecting Innovation Opportunities in Hospitals" was organized with the participation of professionals, users, and manufacturers and three 'Innovation, Economy and Quality of Life' forums were realized during 2010 and 2011. Along the same year, a social networking platform to exchange information and experience related to well-being and quality of life was implemented (http://www.mibienestar.es/) together surveys and face-to-face interviews to identify people's problems and needs. An ICT application with a questionnaire was installed in different local entities and in computer terminals at several locations in the city (old people's homes, hospitals, schools, and so on)[11]. The questionnaire was available online on December 2011 with support of the Generalitat Valenciana, IMPIVA, and the European Regional Development Fund. The CVLL focused on generating cultural change (in particular among older people and immigrant groups) to change their perceptions and 'mindsets' about the local development processes.[12]

7 Actors' perceptions of power and the knowledge generation processes

CVLL constitutes a relational space where people perceive barriers to their own participation and that of others in different ways. This often results from them assigning different meanings to participation. Some interviewees considered that participation directly depends on resources, people skills and can be improved with the implementation of user-oriented communication tools. CVLL was perceived as a 'demand-oriented/participatory model' where 'producers' of knowledge are the 'community' of experts from the firms, researchers and technicians from the university and the IBV institute.

> '[To] participate is an opportunity to share what you know and learn new things, but I think that it's also an opportunity for them [researchers] 'they need to understand what real life is' …'their beliefs are based on theories but the reality is too different.' (neighborhood association member)

> 'Assemblies sometimes seem battles when you explain an initiative that people don't understand' …'previously to establish a participation strategy you need to understand the [local] social interactions, how people interact.' (activist)

Some actors considered that the implementation of strategies and methodologies 'to capture' the insights of users and citizens was the principal participation mechanism. This 'instrumental' view of participation was oriented to improve the 'efficiency' of the innovation processes. Others partners expressed the view that participation is a key aspect to generate 'a social dialogue process' between different actors, creating spaces of confidence, identity recognition and self-worth, with a 'transformative' view of participation. The majority of interviewees maintained that this process needs to be 'catalyzed' by community leaders.

Actors also perceived barriers to participation. These were often related with power and knowledge. For example, some actors experienced power and knowledge as 'something' that some individuals and groups 'impose' in the meetings and establish 'the rules of the game and conditions to participate'. Some actors recognized that they may not always 'have' the capacity or the skills to collaborate or innovate as much as they would like.

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11   Detailed information on these platforms are in the following urls: http://www.cvidaclub.com/ and http://www. mibienestar.es/, http://www.cvidaclub.com/cvidaclub/groups/viewgroup/25-VilaCvida%3A+calidad+de+vida+en +Vilareal.html
12   More information related to the organizational structure of CVida LL can be consulted in Edwards-Schachter et al. (2012).

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However, the majority of interviewees considered that 'political manoeuvrings and open conflicts' can have both positive and negative outcomes on effective empowerment and participation. Continuous sense-making and negotiation interactions were affected by the presence of people who act as leaders and 'knowledge brokers' with an important role in the 'stabilization' of the social relations.

> 'In Vila Real we constructed a strong social fabric' … 'the role of community leaders with power to attract and influence their group is fundamental to advance in any project' … 'People shared their knowledge by the trust generated in social interrelationships' … 'if people feel what they think and say is important, it is easy to reach an agreement' … 'people is more and more willing to participate without fear of having less knowledge or expertise than others.' (IBV project manager)

We identified barriers related to the scarcity of funding opportunities (participation as a mechanism to compete for funding where knowledge and capabilities are perceived as a power struggle), conflicting interests (e.g., actors did not expect that collaborative innovation be a win-win situation for participants if some of them had the 'knowledge' and privileges in the access to information), an absence of a 'place' to collaborate (referred to both physical and 'social' spaces; it relates to lack of transparency, reciprocity, lack of facilitators or mediators) and inequalities or lack of skills and capacities. Most of the interviewees indicated the direct dependence of the continuity and evolution of community initiatives –with impact in the participation level- from public funding. Table 2 summarizes the aspects observed and discussed in the focus group session:

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Power and Knowledge dynamics	Key issues that are perceived, interpreted and negotiated which can act as barriers to collaborative innovation
Relational	• Common meanings about ends and objectives • Setting the agenda • Decision-making, constituencies and lobby • Selection of stakeholders, ownership of the process • Expectations for the process • Outcomes expectations • Role of community and users as sources of knowledge (associate to 'knowledge boundaries' and 'co-creation' as 'driven', 'centred', 'based' and collaboration levels) • Perceptions and believes related to own capabilities and capabilities of others • Building upon skills and knowledge • Knowledge flow (unidirectional, bidirectional or multidirectional)
Structural	• Access to resources, knowledge and information transparency • Structure, funding support and normative/regulative mechanisms • Number and expertise of representatives • Number, length, and location of meetings • Distribution of information • Production of meeting records/knowledge codification • Physical infrastructure • Mismatch between grass-root innovations and conventional 'collaboration spaces' in innovation system • Search of legitimation of grass-roots innovations
Cultural	• Values and discursive legitimacy • Communication about the process and frequency of voice • Prioritization of issues • Cultural and social inequalities representativeness (e.g., women, deprived groups, etc.) • Framing of the issues to be addressed • Status of representatives • Use of coalitions • Influence of habitus, rules, norms • Legitimation of grass-roots initiatives

Table 2. Potential barriers in social innovation processes

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8 Conclusions

Empowerment and participation have a crucial role in structuring the discursive context of so-cial innovation. The meanings assigned to these terms are constructed through social interac-tions within which formal and informal actors' coalitions and partnerships operate. Our case study shows that the difficulty in accomplishing common interests and building a minimum consensus, amongst diverse actors with different rationales and perceptions, are potential barriers to collaboration. Participation of users and communities is limited by power strug-gles between 'instrumental' and 'transformative' rationalities that take part of the specific socio-cultural context. Community leaders can contribute to improve participation, acting as 'knowledge mediators' in the social interactions, enabling confidence, trust, identity recogni-tion and self-worth.

In the growing discourses around participation and empowerment of users and communities partic-ipating in LLs, 'co-creation' is seen as a 'neutral' and non-problematic mechanism which implicit-ly contributes to social cohesion and SIs. However, as previous literature and our findings suggest, collaborative innovation in LLs tends to be practiced as an endeavour controllable by means of technical rationality. This can limit the participation of users and communities. Some 'communi-ties-driven innovative initiatives' are co-opted by a fashionable discourse surrounding LLs because they constitute 'social spaces' for creating synergies and facilitate the access to resources and funding possibilities, among other advantages. But, to what extent are they actually empowering people and changing social practices? Community initiatives that aim for socially innovative out-comes are in a continuous 'adaptation process' that gives way to discourses of efficiency and com-petitiveness. In this sense, SIs in LLs can 'fail' or be less successful if participants remain 'stuck' in tension and unable to construct collective agency, reproducing established discourses and power relationships. A critical and reflective approach and further research are required to understand the meaning of knowledge and 'co-creation' and their contribution to social change.

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Annex I: Living Lab definitions

Definition	Authors
'**experimentation environments** in which technology is given shape in real life contexts and in which (end) users are considered 'co-producers''	Ballon et al. (2005, p. 15)
'refers to a **R&D methodology** where innovations, such as services, products and application enhancements, are created and validated in collaborative, multi-contextual empirical real-world settings'	Eriksson et al. (2005, p. 15)
'**a new institution** has been emerging in Europe, aiming to address the very same concerns: Living Labs. Living Labs are driven by two main ideas: a) involving users early on in the innovation process and b) experimentation in real world settings, aiming to provide structure and governance to user participation in the innovation process'.	Almirall & Wareham (2008, p. 23)
'Living Labs are environments for innovation and development where users are exposed to new ICT solutions in (semi)realistic contexts, as part of medium- or long-term studies targeting evaluation of new ICT solutions and discovery of innovation opportunities'	Følstad (2008, p. 116)
'a **user-centric innovation milieu** built on every-day practice and research, with an approach that facilitates user influence in open and distributed innovation processes engaging all relevant partners in real-life contexts, aiming to create sustainable values'	Bergvall-Kåreborn, Ihlström Eriksson, Ståhlbröst, & Svensson (2009, p.3)
'**a system based on a business-citizens-government partnership** which enables users to take active part in the research, development and innovation process. Products and services are developed in a real-life environment in a human centric and co-creative way, based on continuous feedback mechanisms between the developers and the users'	ALTEC (2009, p. 6)
'**are open innovation environments in real-life settings**, in which user-driven innovation is fully integrated within the co-creation process of new services, products and societal infrastructures in a regional harmonized context (the 'Open Innovation Functional Region') catalyzing the synergy of SMEs Collaborative Networks and Virtual Professional Communities in a Public, Private, People Partnership'	Santoro & Conte (2009, p. 1)
'**an open innovation environment in real-life settings** in which user-driven innovation is fully integrated within the cocreation process for new services, products and societal infrastructures'	ENoLL (2011)
'**a research methodology** for sensing, prototyping, validating, and refining complex solutions in multiple and evolving real-life contexts'	Mulder (2012, p. 39)