Innovation in the Public Sector: Exploring the Characteristics and Potential of Living Labs and Innovation Labs

Dimitri Schuurman and Piret Tõnnist

“Policy doesn’t move as quickly as innovation happens.”

Suzan Kay DelBene
Politician, executive, and management consultant

Living labs and innovation labs share many common traits and characteristics. Both concepts are linked to the public sector, and both concepts can be regarded as coping mechanisms to deal with contemporary changes in the innovation landscape and within society as a whole. Both build on past initiatives and practices, but are also struggling to find their own clear identity and “raison d’être”. Because both concepts are largely practice-driven, their theoretical underpinnings and foundations are mostly established after the fact: making sense of current practice rather than carefully researching and planning the further development. However, despite their similarities and common ground, most researchers treat living labs and innovation labs as separate literature streams. Here, starting from a review of the current issues and challenges with innovation in the public sector, we look for links between both concepts by analyzing the current definitions, the predecessors, and the “state of the art” in terms of empirical research. Based on these findings, we summarize a set of similarities and differences between both concepts and propose a model towards more collaboration, mutual exchange, and integration of practices between innovation labs, which can be regarded as initiators of innovation, and living labs, which can be regarded as executors of innovation. Thus, we add to the conceptual development of both concepts and propose a roadmap for the further integration of both the theory and practice of living labs and innovation labs.

Introduction

In the private sector, the rapid development of technology has provided opportunities for firms to launch new products, transform their production processes, and do business in new ways. Different paradigms and frameworks have been developed to assist private organizations in dealing with innovation, such as open innovation (Chesbrough, 2003), (lead) user innovation (von Hippel, 2005), and distributed innovation (Sawhney & Prandelli, 2000). This new perspective has led to different innovation management approaches and organizational forms to cope with these new innovation models.

These new approaches have also been introduced in the public sector. In the private sector, innovation is regarded as essential for the survival of organizations, whereas public sector innovation has long been regarded as a contradiction in terms. Borins (2002) mentions three main issues why public sector innovation may be viewed as an oxymoron: i) public sector agencies are usually monopolies, with no competitive pressure to innovate, ii) the “fishbowl management” effect (where the media and opposition forces are constantly pursuing the exposure of public sector failures) is a powerful impediment to innovation, and iii) public sector organizations are usually large bureaucracies structured to perform their core tasks with stability and consistency, fostering resistance to change or disruption of these tasks. Therefore, public organizations are mostly characterized by a culture of risk aversion and a focus on short-term delivery pressures (Mulgow & Albury, 2003). However, in recent years, this vision has

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shifted. For example, Mazzucato’s (2015) work on the entrepreneurial state has normalized ideas that the public sector – through active innovative agencies such as DARPA in the US Department of Defense (financing the seeds of the Internet) – can create new markets. Furthermore, public sector innovation agencies can “de-risk” private sector innovation activities (Mazzucato 2016). Consequently, in more recent literature, such as seen in a review by De Vries and colleagues (2016), there is consensus that innovation should be a core activity of the public sector.

Nevertheless, many examples of transformative innovations used by Mazzucato and others to legitimize the public sector have found their success outside of the sector and mostly more coincidentally than in a strategic manner. Thus, in line with many public sector innovation scholars, Bommert (2010) claims that there is a need for a new form of innovation inside the public sector itself because bureaucratic (closed) ways of innovating do not yield the quantity and quality of innovations necessary to solve emergent and persistent policy challenges (Borins, 2014). Modern debates on how to organize innovation in the public sector outline the importance of public sector entrepreneurs, boundary crossing networks, empowerment of citizens, and experimental policies – these are issues for which traditional bureaucracies are not well equipped. For better results, open, collaborative innovation with stakeholders beyond government is needed (e.g., Bommert, 2010). However, how to solve these issues and practically organize this process in the public sector has received less attention in the academic literature.

Therefore, within this article, we will introduce and discuss two contemporary innovation approaches with links to public sector innovation: living labs and innovation labs. Both are linked to open and user innovation (Schuurman, 2015; Tõnurist et al., 2015), but they also seem to be mainly practice driven and are sometimes used interchangeably. Therefore, we will investigate the definitions of both concepts, their main predecessors and the research that has been carried out with regards to their characteristics and outcomes. This will enable to compare both concepts, illustrate similarities and differences, and propose a theoretical and practical link between both, as their respective literature streams have been strictly separated until now. Finally, we propose a model that integrates both into a more longitudinal vision on public sector innovation.

Living Labs

Definition
Living labs refer to user-centered, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real-life communities and settings (Ballon & Schuurman, 2015). Leminen (2013) defines living labs as: “physical regions or virtual realities, or interaction spaces, in which stakeholders form public–private–people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life contexts”. This definition is complemented by Schuurman (2015), who sees living labs as an organized approach (as opposed to an ad hoc approach) to innovation consisting of real-life experimentation and active user involvement by means of different methods involving multiple stakeholders, as is implied in the public–private–people (PPP) character of living labs.

Therefore, living labs are both practice-driven organizations that facilitate and foster open, collaborative innovation, as well as real-life environments and arenas, where both open innovation and user innovation processes can be studied and subject to experiments, and where new solutions are being developed. This unique capability enables living labs to generate concrete, tangible innovations based on contributions from users and communities and, at the same time, to advance the (academic) understanding of open and user innovation principles and processes.

Predecessors
At least three important predecessors for the living labs movement can be discerned (Schuurman, 2015):

1. The 1970s saw the emergence of the cooperative design movement, which is related to the Scandinavian tradition of user involvement in IT design processes (Ehn, 1989). In addition to active user involvement, cooperative design also introduced the facilitation of trial-use situations as part of the design process, so as to stage users’ hands-on experience with future applications, which puts the focus on the real-life context.

2. In the 1980s, the European “social experiments” with IT started (Oestmann & Dymond, 2001; Qvortrup,
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1987). Social experiments originated in the field of psychology and refer to experiments taking place outside of laboratories and therefore with less physical isolation of subjects and materials, less procedural standardization, and longer-lasting treatments when compared to experiments in laboratory settings.

3. From the 1990s onwards, “Digital City” projects (i.e., digital economic development and urban regeneration initiatives) started to blossom (Paskaleva, 2011).

Towards the end of the 1990s, the proper living lab concept came into use, first in settings in the United States, which Følstad (2008) refers to as “living labs as testbeds”. Soon thereafter, primarily in a European setting, living labs were more regarded as a research concept dealing with the context of the innovation, focusing on co-creation, which is in line with Følstad’s (2008) second archetype: living labs for research and co-creation.

Research
Ballon and Schuurman (2015) identified a five-year gap between the first living lab projects, which were mainly funded by the European Union and started from 2000 onwards, and the first scientific publications that defined the notion of living labs (Ballon et al., 2005; Eriksson et al., 2005), which they see as evidence of the practice-driven nature of the phenomenon. Although there is now a body of literature that attempts to clarify and analyze the concept (Almirall et al., 2012; Følstad, 2008; Leminen et al., 2012), living lab practices are still under-researched, and a theoretical and methodological gap continues to exist in terms of the restricted amount and visibility of living lab literature vis-à-vis the rather large community of practice (Schuurman, 2015).

Schuurman (2015) has outlined the different layers of living labs: a macro level (the living lab organization), the meso level (consisting of living lab innovation projects), and the micro level (consisting of the different user involvement activities). Leminen, Westerlund, and Nyström (2012) distinguished between different actors in living labs: providers, enablers, utilizers, and users. They conclude that, depending on the actor that drives the living lab organization and the focus of the activities, a different “types” of living lab results, such as: i) research living labs focusing on performing research on different aspects of the innovation process, ii) corporate living labs that focus on having a physical place where they invite other stakeholders (e.g., citizens) to co-create innovations with them, iii) organizational living labs where the members of an organization co-creatively develop innovations, and iv) intermediary living labs in which different partners are invited to collaboratively innovate in a neutral arena.

This body of research illustrates the broad diversity of living lab organizations as well as innovation outcomes. It is clear that public actors are, by definition, present in the living lab organization, as implied by their PPP character, but that living lab projects deal with all kinds of innovation, consisting of active user involvement, real-life experimentation, and a multi-method approach.

Innovation Labs

Definition
Innovation labs are defined as hybrids of think tanks, digital R&D labs, social enterprises, and charitable organizations (Williamson, 2015). Their mission is two-fold: to foster ICT-enabled, user-driven service production logic in the public sector as well as to cope with external changes (e.g., ICT change, austerity, demand for individualized services). Therefore, innovation labs can be defined as “islands of experimentation” where the public sector can test and scale out public service innovations. To facilitate this process, some level of autonomy is needed. Building further on this argument, Tõnurist and colleagues (2015) define innovation labs as change agents within the public sector that operate with a large autonomy in setting their targets and working methods. They are structurally separated from the rest of the public sector and are expected to be able to attract external funding as well as “sell” their ideas and solutions to the public sector. However, depending on the context, their organizational build-up can differ considerably. Innovation labs typically have relatively low budgets, are generally small, fluid organizations, and are dependent on external resources (e.g., funds, human resources) that they are able to co-opt to their activities.

Predecessors
The innovation lab as an attempt to structure (radical) change processes within public organizations is not an entirely new phenomenon: see, for example, Thompson and Sanders’ (1998) work on reinvention labs in the United States in the 1990s. However, what is different in the current wave of innovation labs is their context and logic: the combination of user-driven service production logic, the ever-increasing computing
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power, and fiscal austerity. One of the organizational origins of innovation labs in the public sector can be seen in the think tank culture predominant in Anglo-American politics (Williamson, 2015). As such, innovation labs have been described as purpose-driven “do tanks” (Bellefontaine, 2012). They form a loose hybrid of the think tank, the social enterprise, and the charitable organization, merged with aspects of the digital R&D lab (all of which are themselves contested, elastic, and emergent organizational forms). Broad-based characteristics of innovation labs are discussed in various reports and papers (e.g., John, 2014; Puttick et al., 2014; Tõnurist et al., 2015; Torjman, 2012; Westley et al., 2011; Williamson 2015).

Research

Although in recent years innovation labs have become relatively popular in the public sector, especially since 2010, the literature and studies on the subject are still scant. The available papers and reports remain descriptive and informative in nature; most of the provided evidence relies on insider ethnographies (e.g., Mindlab: Christiansen, 2014; Policy Lab: Kimbell, 2015) or document analyses (e.g., Williamson 2015). A report on 16 innovation labs was published in 2013 by the Parsons DESIS lab, whereas Nesta and Bloomberg Philanthropies have published a report on public sector innovation labs that covered 20 such units around the world (Puttick et al., 2014). Recently, La 27e Region (2016) mapped 78 public policy labs in European Union member states. These reports confirm the definition of innovation labs as hybrid forms.

Other efforts to analyze innovation labs include categorizing them by their segment of specialism (e.g., design-focused, psychology-based, or technology-based); by sector (e.g., healthcare or education), whether they are government-led or government-enabled or their potential level of change (incremental or systematic) (Armstrong et al., 2014; Parsons DESIS lab constellation, 2013); and based on their operations (Puttick et al., 2014; OECD, forthcoming).

However, the mentioned studies do not provide deeper insights into the way innovation labs function. Therefore, Tõnurist and colleagues (2015) conducted a detailed study, mostly based on interviews with managers from innovation labs, to examine the specific characteristics related to the envisioned outcomes and the specificities of innovation in the public sector. By having a self-generated income and low operating budgets, innovation labs do not illicit strenuous performance evaluations nor the need to collect quantitative metrics to make the output of the labs measurable. Innovation labs are relatively small and agile, forcing them to act “quick and dirty”, and in this way they resemble start-ups. However, when projects become too big, innovation labs run against existing structures (e.g., procurement rules), which causes them to hand over the projects to other departments that can choose to continue or disband them. Stakeholder engagement and co-creation with citizens is seen as key, but the outcomes of innovation labs are produced for ministerial departments and other government agencies. A large share of the innovation lab activities is funded by the public sector, which limits their autonomy.

Tõnurist and colleagues (2015) conclude that innovation labs walk the tightrope between disrupting public organization and delivering value to their “sponsors”. They do this by jump-starting and showcasing user-driven service re-design projects, specializing in quick experimentation without having the capabilities and authority to significantly influence upscaling of the new solutions or processes, focusing on prototyping without too much concern for IT capabilities. They are not yet an organic part of the public sector and its change. Their main source of autonomy and a key to their survival is high-level political and administrative support, meaning that once an innovation lab loses its sponsors, its chances of survival diminish radically. This situation highlights an interesting paradox: smaller innovation labs are easier to close down, whereas larger ones face the risk of losing flexibility and freedom to act.

Discussion and Conclusion

Within this article, we investigated living labs and innovation labs as possible solutions for public sector innovation. Both living labs and innovation labs are mainly practice-driven concepts that started to blossom around the turn of the millennium. Both can be regarded as ways of dealing with the changing environment and the changing role and nature of innovation. Table 1 provides an overview of the core characteristics of both concepts, based on the literature review above.

Both living labs and innovation labs can be regarded as practice-driven concepts that provide a more structured way to implement collaborative innovation in the public sector. There are certainly similarities and overlap between both concepts, but based on our exploratory literature review, we conclude that both are...
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Table 1. Comparison of core characteristics of innovation labs and living labs

|                         | Living Labs                                           | Innovation Labs                                         |
|-------------------------|-------------------------------------------------------|---------------------------------------------------------|
| **Main activities**     | Focus on innovation development and real-life experimentation | Focus on ideation and “quick and dirty” experimentation |
| **Organizational model**| Multi-stakeholder organization                        | Multi-disciplinary team                                   |
| **User involvement**    | A priori user-centric                                 | Potentially citizen-centric                              |
| **Type of projects**    | Public as well as private sector innovation projects  | Public sector innovation projects                        |
| **Governance structure**| More formal at the organizational level due to multi-stakeholder partnerships | More agile and volatile due to their smallness and relative independence |
| **Operational focus**   | Focus on methodology and knowledge generation         | Focus on problem and idea definition                     |
| **Role in innovation process** | Executors                                                     | Initiators                                              |

fundamentally different and can even be regarded as logical extensions of each other. The main similarities are the focus on experimentation, a strong link with ICT (both as enabler and outcome), and a collaborative, user-centric attitude. However, we also discovered major differences.

First, whereas living labs have a broader application domain and are utilized for both private sector as well as public sector innovation, innovation labs are conceived exclusively in a public sector or third sector context (especially in connection to social innovation labs). Therefore, innovation labs are slightly easier to define, whereas a definition for living labs is more elusive. However, this difference can also be due to the fact that innovation labs are much less studied compared to living labs and therefore their intricacies and differences have not been so extensively outlined.

Second, both living labs and innovation labs are multi-disciplinary. However, in living labs, this mix is the result of the multi-stakeholder nature of the organization (living labs are PPPs), whereas innovation labs are smaller and consist of one team with people from different backgrounds. Thus, in public sector innovation labs, the methodologies used tend to depend on the capabilities and background of the people involved, and are not a priori citizen-centric. In living labs, the collaborative focus is a built-in characteristic of the organization.

Third, living labs are characterized by a multi-stakeholder organization set up to conduct multiple innovation projects (cf. the sustainability principle). Interdependencies between different partners make these organizations more inert. In contrast, innovation labs are smaller and more agile, but they also tend to be shorter lived. They are sometimes only operational for one or a few concrete projects, and they are highly dependent on high-level political or administrative patronage. Therefore, they are not tightly interwoven with the traditional organizational structures and are more “volatile”.

Fourth, the operating timeframes of living labs and public sector innovation labs can differ considerably. This difference is connected to the “initiator versus executor” roles of these organizations (Table 1), but the concept of a “living” lab also often infers the collection of information and feedback for innovative solutions/policy measures over a period of time in a real-life context. In innovation labs. The long-term measurement efforts are rather unique (if present at all) and concentrate on the pre-design phase in the innovation process.

Fifth, in living labs, the goal is to learn and grow as an organization by means of different innovation projects, where these projects also are more likely to cover a longer proportion of the innovation process. Innova-
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tion labs have thus far focused on the ideation and genesis stage of innovation, and then “let go” of the project afterwards. This behaviour arises because most of these organizations do not control the implementation phase of the innovations as many responsibilities can be fragmented over different public sector organizations, thus, making it time consuming for small teams to follow up on innovations.

Figure 1 proposes a model for possible collaboration between living labs and innovation labs. As illustrated, both can be seen as operating on a continuum that follows a typical innovation process from idea towards launch: living labs might be seen as the ideal structures to pick up the raw ideas or prototype solutions delivered by innovation labs, where focus can be placed on the actual implementation and execution stage, including real-life testing. Furthermore, given that innovation labs operate more in the public sector, they encounter organizational and cultural barriers that may not be present in living labs, where the partnerships between sectors are more balanced. A collaboration between innovation labs and living labs even opens up the possibility of public sector ideas being taken up by private organizations. Our model also includes a feedback loop, as the findings from the “implementation” stage carried out by living labs might be fed back to the innovation labs in order to generate new concepts and ideas. As living labs can monitor innovations post-launch, processes of re-invention can occur, based on gaps in the experience or execution. This re-invention can take place in innovation labs. However, this model is at the moment purely hypothetical; to our knowledge, no formal collaborations exist between living labs and policy labs.

Therefore, we conclude that, although they originate from different predecessors and are rooted in different research streams, both living labs and innovation labs have demonstrated their value for public sector innovation. Based on our findings, we would argue for more studies and research regarding the nature, outcomes, and possible integration of both concepts for public sector innovation, as there seems to be a lot of potential in combining both approaches as they tend to have slightly different, but complementary key characteristics. In theory, both concepts could act symbiotically to foster public sector innovation in a continuous way. Therefore we would suggest putting this hypothesis to the test by carrying out pilot projects between living labs and innovation labs. With this article, we hope to have taken the first step towards opening this new field of collaboration and investigation that has much potential to solve the specific public sector innovation challenges.

![Figure 1. Possible collaboration model for innovation labs and living labs](image-url)
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About the Authors

Dimitri Schuurman is the Team Lead in User Research at imec.livinglabs and a Senior Researcher at imec – MICT – Ghent University in Belgium. He holds a PhD and a Master’s degree in Communication Sciences from Ghent University. Together with his imec colleagues, Dimitri developed a specific living lab offering targeted at entrepreneurs in which he has managed over 100 innovation projects. Dimitri is responsible for the methodology and academic valorization of these living lab projects and coordinates a dynamic team of living lab researchers. His main interests and research topics are situated in the domains of open innovation, user innovation, and innovation management. His PhD thesis was entitled Bridging the Gap between Open and User Innovation? Exploring the Value of Living Labs as a Means to Structure User Contribution and Manage Distributed Innovation.

Piret Tõnurist is a Policy Analyst for the OECD and holds a research fellowship in Tallinn University of Technology’s Ragnar Nurkse School of Innovation and Governance in Estonia. She is a co-chair of the European Group for Public Administration permanent study group Behavioral Public Administration. She has previously worked as a consultant in the Parliament of Estonia (the Riigikogu) and as a performance auditor for the National Audit Office. Her main research interests are connected to public sector innovation, co-creation, innovation policy management (including state-owned companies) and energy technologies. She holds a PhD in Public Administration (Technology Governance) from Tallinn University of Technology and a MSc in policy evaluation from Katholieke Universiteit Leuven in Belgium.

References

Almirall, E., Lee, M., & Wareham, J. 2012. Mapping Living Labs in the Landscape of Innovation Methodologies. Technology Innovation Management Review, 2(9): 12–18. http://timreview.ca/article/603

Armstrong, R., Waters, E., Moore, L., Dobbins, M., Pettman, T., Burns, C., Swinburn, B., Anderson, L., & Petticrew, M. 2014. Understanding Evidence: A Statewide Survey to Explore Evidence-Informed Public Health Decision-Making in a Local Government Setting. Implementation Science, 9: 188. http://dx.doi.org/10.1186/s13012-014-0188-7

Ballon, P., Pierson, J., & Delaere, S. 2005. Test and Experimentation Platforms for Broadband Innovation: Examining European Practice. Paper presented at the 16th International Telecommunications Society Europe Conference, Porto, Portugal, September 4–6. http://dx.doi.org/10.2139/ssrn.1331557

Ballon, P., & Schuurman, D. 2015. Living Labs: Concepts, Tools and Cases. info, 17(4). http://dx.doi.org/10.1108/info-04-2015-0024

Bellefontaine, T. 2012. Innovation Labs: Bridging Think Tanks and Do Tanks. Ottawa: Policy Horizons Canada.

Bommert, B. 2010. Collaborative Innovation in the Public Sector. International Public Management Review, 11(1): 15–33.

Borins, S. 2002. Leadership and Innovation in the Public Sector. Leadership & Organization Development Journal, 23(8): 467–476. http://dx.doi.org/10.1108/01437730210449357

Borins, S. F. 2014. The Persistence of Innovation in Government. Cambridge, MA: Brookings Institution Press with Ash Center for Democratic Governance and Innovation.

Chesborough, H. 2003. The Logic of Open Innovation: Managing Intellectual Property. California Management Review, 45(3): 33–58.

Christiansen, J. 2014. The Irrealities of Public Innovation. PhD thesis. Aarhus University.

De Vries, H., Bekkers, V., & Tummers, L. 2016. Innovation in the Public Sector: A Systematic Review and Future Research Agenda. Public Administration, 94(1): 146–166. http://dx.doi.org/10.1111/padm.12209

Ehn, P. 1989. The Art and Science of Designing Computer Artefacts. Scandinavian Journal of Information Systems, 1(1): 3.

Eriksson, M., Niitamo, V. P., & Kulkki, S. 2005. State-of-the-Art in Utilizing Living Labs Approach to User-Centric ICT Innovation – A European Approach. Luleå Center for Distance-spanning Technology and Luleå University of Technology Sweden. http://www.cdi.ltu.se/main.php/SAO_LivingLabs.pdf

Folstad, A. 2008. Living Labs for Innovation and Development of Information and Communication Technology: A Literature Review. eFOV: The Electronic Journal for Virtual Organization & Networks, 10.

John, P. 2013. Policy Entrepreneurship in UK Central Government: The Behavioural Insights Team and the Use of Randomized Controlled Trials. Public Policy and Administration, 29(3): 257–267. http://doi.org/10.1177/0952076713509297

Kimbell, L. 2015. Applying Design Approaches to Policy Making: Discovering Policy Lab. Brighton, UK: University of Brighton.
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La 27e Region. 2016. *Public Policy Labs in European Union Member States*. Luxembourg: Publications Office of the European Union.

Leminen, S., Westerlund, M., & Nyström, A.-G. 2012. Living Labs as Open-Innovation Networks. *Technology Innovation Management Review*, 2(9): 6–11.
http://timreview.ca/article/602

Leminen, S. 2013. Coordination and Participation in Living Lab Networks. *Technology Innovation Management Review*, 3(11): 5–14.
http://timreview.ca/article/740

Mazzucato, M. 2016. From Market Fixing to Market-Creating: A New Framework for Innovation Policy. *Industry and Innovation*, 23(2): 140–156.
http://dx.doi.org/10.1080/13662716.2016.1146124

Mazzucato, M. 2015. *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. London: Anthem Press.

Mulgan, G., & Albury, D. 2003. *Innovation in the Public Sector*. London: UK Strategy Unit, Cabinet Office.

Oestmann, S., & Dymond, A. C. 2001. Telecentres—Experiences, Lessons and Trends. In C. Latchem & D. Walker (Eds.), *Telecentres: Case Studies and Key Issues: Perspectives on Distance Education*: 1–16. Vancouver: The Commonwealth of Learning.

Paskaleva, K. A. 2011. The Smart City: A Nexus for Open Innovation? *Intelligent Buildings International*, 3(3): 153–171.
http://dx.doi.org/10.1080/17508975.2011.586672

Puttick, R., Baeck, P., & Colligan, P. 2014. *The Teams and Funds Making Innovation Happen in Governments around the World*. London: Nesta and Bloomberg Philanthropies.
http://www.theteams.org/resources/readteamsreport0

Qvortrup, L. 1987. Social Experiments with LT: Social Basis, Pilot Definition, Future Perspectives. In L. Qvortrup, C. Ancelin, J. Frawley, J. Hartley, F. Pichault, & P. Pop. (Eds.), *Social Experiments with Information Technology and the Challenges of Innovation*: 271–300. Dordrecht, Holland: Kluwer Academic Publishers Group.

Sawhney, M., & Prandelli, E. 2000. Communities of Creation: Managing Distributed Innovation in Turbulent Markets. *California Management Review*, 42(4): 24–54.

Schuurman, D. 2015. Bridging the Gap between Open and User Innovation? Exploring the Value of Living Labs as a Means to Structure User Contribution and Manage Distributed Innovation. Doctoral dissertation. Ghent University.

Ståhlbrot, A. 2012. A Set of Key Principles to Assess the Impact of Living Labs. *International Journal of Product Development*, 17(1-2): 60–75.
http://dx.doi.org/10.1504/IJPD.2012.051154

Thompson, J. R., & Sanders, R. P. (Eds.) 1998. *Transforming Government: Lessons from the Reinvention Laboratories*. San Francisco, CA: Jossey-Bass Incorporated Pub.

Torjman, L. 2012. Labs: Designing the Future. *MaRS Discovery District*, February 29, 2012. Accessed December 1, 2017: http://www.marsdd.com/news-insights/mars-reports/labs-designing-future

Tõnurist, P., Kattel, R., & Lember, V. 2015. *Discovering Innovation Labs in the Public Sector*. Working Papers in Technology Governance and Economic Dynamics. The Other Canon Foundation, and Tallinn University of Technology, and the Ragnar Nurkse School of Innovation and Governance.

Von Hippel, E. 2005. Democratizing Innovation: The Evolving Phenomenon of User Innovation. *Journal für Betriebswirtschaft*, 55(1): 63–78.
http://dx.doi.org/10.1007/s11301-004-0002-8

Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Loorbach, D., Thompson, J., Nilsson, M., Lambin, E., Sendzimir, J., & Banerjee, B. 2011. Tipping Toward Sustainability: Emerging Pathways of Transformation. *Ambio*, 40(7): 762–780.

Williamson, B. 2015. *Testing Governance: The Laboratory Lives and Methods of Policy Innovation Labs*. Working Paper. Stirling: University of Stirling.

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