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City lab as a platform for implementing urban innovation. The role of companies

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Abstract

This article has two aims. The first one is to show city lab as a specific innovation management platform in urban areas, whereas the other is to present the reasons why companies should get involved in it. The article begins by showing how the perception of innovation evolved from a strictly technological notion to an approach associated with satisfying social needs (social and urban innovation). Next, the understanding of city lab will be presented, taking into account the well-known living lab concept. Subsequently, based on the quadruple helix concept, city lab actors will be discussed (public authorities, enterprises, city users, scientific units and intermediaries), as well as their roles, against the background of public-private-people partnerships (4P). Considering these observations, similarities and differences between living lab and city lab will be identified. By way of conclusion, the article offers a handful of reasons why companies, especially multinational ones, should get involved in city lab initiatives.

Keywords: city lab, living lab, innovation, multinational companies, social innovation, urban innovation

JEL codes: O31, L26

INTRODUCTION

The issue of living labs is widely known in the literature. This article starts with a comparison of the concept with that of the city lab and moves on to the participation of companies in this kind of initiatives. In this case, company is not the most important actor but a participant. A discussion of the reasons why and in what way companies should become involved in the city lab will constitute the main part of the article.¹

EVOLUTION OF THE UNDERSTANDING OF INNOVATION

In recent years, the notion of innovation has come to be interpreted in the following terms. It is no longer viewed as reflective only of technological change past (Kopyciński 2017). Nowadays, besides those listed in the Oslo Manual (OECD 2005, p. 18, based on Schumpeter 1911), namely product, process, organizational and marketing innovation, they also include social innovation (e.g. Murray, Caulier-Grice, Mulgan 2010, BEPA 2011, OECD 2012, Mulgan 2012). In this article the author wishes to invoke social innovation theory. One of the first people who noticed the importance of social innovation for development was W. F. Ogburn, who identified a cultural lag associated with the failure to adapt cultural changes to technical ones (Ogburn 1966). In this approach, social innovations will contribute to the fulfilment of such a lag. According to the definition of social innovations adopted in the TEPSI project, “social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act” (The Young Foundation 2012, p. 18). In this approach, social innovations are characterized by the following features: cross-sectorality, open and collaborative approach, grassroots and bottom-up activities, pro-sumption and co-production, mutualism, creation of new roles and relationships, better use of assets and resources, developing assets and capabilities (The Young Foundation 2012, p. 21). Regardless of the definition adopted, when compared with other classifications of innovations, social innovations are meant to meet the needs of the largest group of users, whereas the actual kind of innovation implemented (technological / non-technological) becomes of secondary importance.

But the evolution in the understanding of innovation is not only about perceiving them in social terms. Innovation is also being associated with a broad spectrum of actors (open innovation, see Chesbrough, Vanhaverbeke, West 2006) or even with future users in developing solutions that meet their expectations (user innovation, democratizing innovation, see E. von Hippel; living labs – see World Bank 2014; collaborative innovation – see J. Torfing 2016). In this context, two different approaches to classifying innovations can be identified (see Figure 1). In the first one, the kind of solution is paramount (usually in an enterprise or for its benefit), and the other emphasizes the importance of collectivity at various stages of the innovation process (creation, testing,

¹ In this article the author will use the term ‘city users’ instead of ‘city dwellers.’ The former concept is broader and encompasses both long-term and temporary residents as well as visitors, irrespective of the purpose of their stay in the city (e.g. commuters, tourists). In other words, city users care primarily about city infrastructure.

implementation, monitoring). In the latter case, the innovation process does not necessarily have to be enterprise-related (e.g. changes introduced in a city as part of the city lab, which will be discussed later in the article). It should be emphasized that these two orders are not mutually exclusive, e.g. the solution created in the open innovation formula can be classified as one of the types of innovations in the OECD classification.

The evolution of the understanding of innovation can be analysed from a purely technological point of view, or as a social phenomenon, where meaning takes on such qualities as co-operation, co-creation, mutual learning, or co-sharing. Such processes occur in varying degrees, but the author of this article would like to focus on urban areas. This article focuses on a specific type of social innovation – urban innovation created in order to meet the needs of the largest possible group of city users.¹ Urban innovation can be considered as a specific type of social innovation dedicated to the city area, the aim of which is to fulfil the expectations of city users.

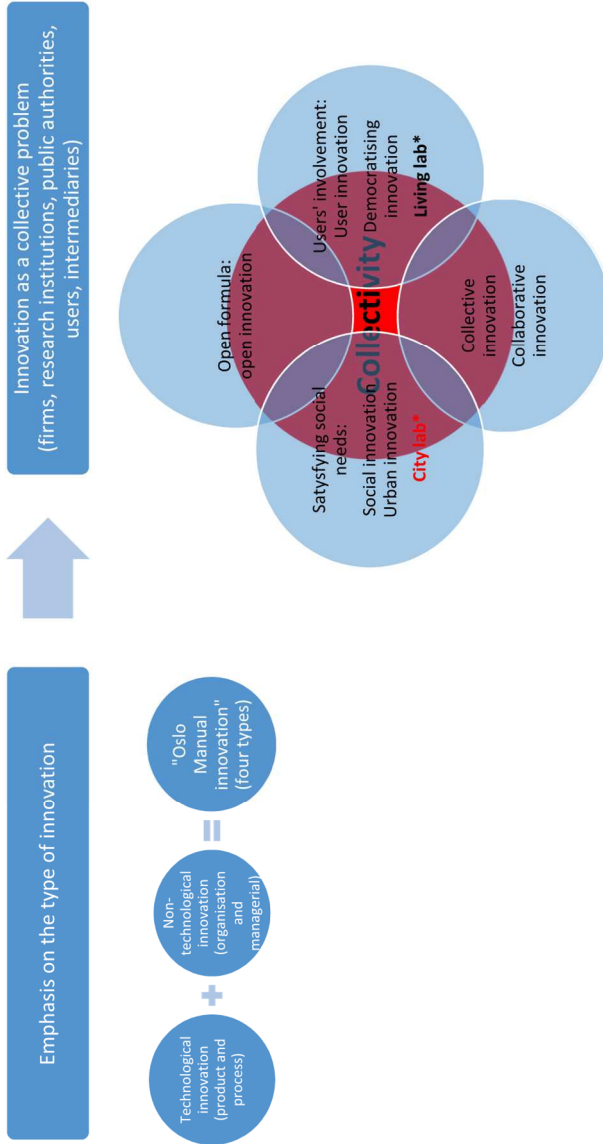
This way of thinking is reflected in the concept of smart city, where technological innovation is one of the tools (but by no means the only one) for social, environmental and cultural development of cities (more about smart city concept, see e.g. Deakin 2015). The term ‘smart city,’ meaning, among others, cooperation of various actors, is associated with the notion of ‘city lab’ to be discussed further in this article.

UNDERSTANDING THE CONCEPTS OF ‘LIVING LAB’ AND ‘CITY LAB’

Living lab

One of the approaches to engaging users in designing new solutions is called living lab. It was first proposed by W. Mitchell, who understood it as a way of actively involving the city residents in planning the development of their city (Mitchell 2005). This concept can be understood broadly, not only in terms of city management, but also in terms of innovative processes in enterprises. Living labs can be understood as a platform for implementing the open innovation concept (Paskaleva 2015, p. 119). In this sense Nyström et al. (2014, p. 483) claim that the living lab is a network of open innovation characterized by openness and user involvement. In this way, ideas for the development and implementation of innovative enterprise solutions are derived from the external environment. These processes occur in real-life environments, not in closed research laboratories (Almirall 2009). Nyström et al. (2014, p. 484) justify the networked nature of living lab by the voluntary cooperation of entities having similar roles. Users are particularly important, being both the subject and the object in innovative processes, and acting as co-creators, testers and co-producers (Ballon, Pierson, & Delaere, 2005).

The objective and subjective definition was proposed by M. Westerlund and S. Leminen (2011, p. 20), who observed that living labs “... are physical regions or virtual realities where stakeholders form public-private-people partnerships (4Ps) of firms, public agencies, universities, institutes, and users all collaborating for creation, prototyping, validating, and testing of new technologies, services, products and systems in real-life contexts.” The main players in the innovation process are the users, who are not only the source of information, but also the testers, developers and designers of innovation (Nyström et al., 2014, p. 483).



* City lab and living lab could not be treated as a type of innovation but as specific platforms to implement innovation where, among others, the following features are highlighted: satisfying social needs (city lab) and users' involvement (living lab). These two concepts are included in the above statement because of these features.

Figure 1. Evolution of defining innovation

Source: own elaboration.

Considering the above, we can say that a living lab is a voluntary cooperation network involving various entities – enterprises, research units, public entities, and users, the last ones being the most important. They participate in the design, development and implementation of innovative solutions based on everyday life experiences. Such activities can be classified as open innovations.

City lab

The concept of living lab appears to describe well the phenomenon of open innovation from the company perspective. However, it does not fully reflect the process of social (urban) innovation. In the latter case, the same actors are involved as in the living lab, but they have different roles. In the case of solving urban problems, they have a public purpose; the city decision makers (not the company management) are the primary decision-makers, with the participation of city users, companies, and research units. There is no single term for distinguishing the phrase that means solving urban problems from this reflecting the business ones. The terms ‘urban living lab,’ ‘urban lab,’ or ‘city lab’ (see e.g. Scholl and Kemp 2016, Voytenko Palgan et al. 2016 or Urb@exp project: <http://www.urbanexp.eu> Accessed August 2017) may have slightly different meanings. In this paper the author will use the term ‘city lab’ to emphasize the particular role of public authorities (cf. Scholl and Kemp 2016, p. 90). The urban lab can be understood as ‘... projects in which local authorities and other stakeholders want to learn about and be involved in new ways of dealing with urban challenges such as the development of a polluted site and inflexible regulations’ (Urb@exp project: <http://www.urbanexp.eu>, accessed August 2017). As is the case with living labs, these are real-life applications of open innovation, where the importance of experimentation involving users, co-design and learning is underscored (Urb@exp project: <http://www.urbanexp.eu>, accessed August 2017). It is therefore a specific type of lab, where the activities are initiated and participated in by city authorities. The activities are characterised by experimentation and user involvement (Scholl and Kemp 2016, p. 89).

The attention to the occurrence of similar wording should be paid. Under the auspices of the European Commission Joint Programming Initiative on Urban Europe (JPI Urban Europe), an urban city lab was defined as “a forum for innovation, applied to the development of new products, systems, services, and processes, employing working methods to integrate people into the entire development process as users and co-creators, to explore, examine, experiment, test and evaluate new ideas, scenarios, processes, systems, concepts and creative solutions in complex and real contexts” (JPI Urban Europe 2013). The development of the concept of urban living lab can be inferred from emphasizing the importance of a public purpose and the role of public authorities (e.g. Juujärvi and Pessa 2013). A proposal to delimit the notions of city living lab and city lab was also put forward. Although both concepts belong to “the big lab family” (Scholl et al. 2017, p. 11), Scholl and Kemp (2016, p. 90) call the city lab a special type of urban city lab, with a focus on developing ideas, and using urban development vision and experimentation as a new form of urban planning. City lab is different from the urban city lab for the following reasons (Scholl and Kemp 2016, p. 90):

1. Its purpose is not only to improve products and services, but also to make changes to the planning processes.

2. It operates with a significant involvement of municipal authorities.
3. Less emphasis is placed on technological solutions and scientific expertise.

At the same time, living labs are a major inspiration for city labs, focusing on user-centred innovation and engaging users in the functioning of the city (Scholl and Kemp 2016, p. 90).

Scholl and Kemp (2016, pp. 99-100) mention the following features of city labs:

1. **Hybrid organizational forms** from the frontier of local administration and society, and “shared ownership of a city lab by the municipality and other stakeholders.” This formula allows to partially bypass the bureaucratic logic of the functioning of local authorities, which is essential for the emergence of innovative solutions. It integrates various urban environments around **public authorities, academics, entrepreneurs and residents**.
2. Place of **experimentation with new forms of governance** – inspiration for public authorities to change the processes of city management.
3. **Multi-stakeholder settings** with the specific role of local authorities. This arrangement responds to increasingly complex urban challenges, which the local administration is unable to resolve on its own.
4. Using **co-creation** when looking for new solutions (experimenting). Local authorities usually do not engage in these experiments, but provide (and modify in the learning process) procedures which may make it easier for experiments to be successfully implemented in the city.
5. Solve complex problems in a **multi-disciplinary way**, using the knowledge of many disciplines.

In further discussion, the term ‘city lab’ (see: Scholl and Kemp (2016)) will be used to denote a set of actions initiated by public authorities, aimed at long-term urban planning (public purpose). They are implemented in the form of open innovation, through experimentation in real-life context of different entities (primarily city users), where the city authorities play a special role. This approach will be further developed in next sections, beginning with one of the concepts of co-operation between actors involved in public affairs management, known as 4P. Beforehand, however, in order to better understand the city lab as a concept, two case studies will be presented.

CITY LAB – CASE STUDIES

Recreation and leisure area in Krakow

The authorities of Krakow, in the wake of the 2007/08 crisis, sold part of the city centre’s green area with the permission to construct an office building. After several years, the development went ahead, which triggered a strong negative reaction of the city residents. In order to make up for it, the developer proposed to design a green belt and rest area between the busy street and office building, with the option to include other areas in the project (a total of approx. 5 hectares). Previously, it was a very unfriendly area for the residents, performing mainly a transit function, separated by acoustic screens and too small to spend the free time.

The project began in 2015. It proved to be the first one in the city, which involved extensive consultations and workshops with the participation of residents, the representatives of the developer, architectural companies, city authorities, non-governmental organizations, as well as planners, and academics. In the first stage, residents could submit their ideas with the help and cooperation of other participants in terms of design. These ideas were evaluated by a Danish urban planner and architect Jan Gehl. Later, residents voted on the best project, which is currently being implemented. As of June 2018, one part was completed (in the vicinity of the new office building), and further work is planned as part of later investments in this area.

Malmö Innovation Arena – Climathon

Malmö Innovation Arena has been operating in the city for several years. Originally, it focused on civil servants from various municipal departments, companies and researchers who supported sustainable city development. Now it also involves NGOs and city residents, concentrating generally on housing shortage. It aims to support fast and sustainable construction processes in the city. A sample attempt to involve residents and representatives of NGOs in the platform's work is Climathon, a 24-hour event, where participants jointly engaged in addressing issues related to the management of storm water and ways of organizing temporary use of vacant shops. Climathon was organised by various city departments and housing companies in collaboration with the Arena team. The winning proposal received support from a business developer, so it could be further developed and prototyped. Climathon was open to everyone, but mainly students took part – it failed to attract older people. Arena team have also tried to invite NGOs, but this cannot be called a success, because it was difficult to communicate and understand different expectation (Scholl et al., 2017, pp. 64-65).

PUBLIC-PRIVATE-PEOPLE PARTNERSHIP („4P”)

Emphasizing the importance of users in urban management processes is reflected in the concepts of partnerships which share certain tasks. One approach to city management involves the use of the public-private-people partnership concept (4P), which assumes that for different ways of collaborating and sharing public and private actors in the creation of products, services or policies (public-private partnerships), also members or non-affiliated users ("people") are included. This is intended "to increase transparency and democratic accountability, and more effectively to include citizen knowledge and to create environments and services that better respond to citizen needs" (Perjo et al., 2016, p. 2).

As Paskaleva points out (2014, p. 118), 4P means engaging citizens in all aspects of the design and delivery of public services, where both citizens and public authorities are responsible for these processes. In this way the residents become co-producers and co-creators of new services (Cahn 2001).

From the perspective of the city, public-private-people partnerships consist of the following entities (Perjo et al., 2016, pp. 4-10):

- The public sector:
 - Politicians (including city mayors) decide on the relationships with the private sector and residents;

- Civil servants, including planners of various levels, carry out public-related tasks related to the city's development.
- The private sector (financiers, developers, architects, consultants, small and medium enterprises, commercial actors etc.);
- The people sector (individuals and formal and non-formal associations, e.g. NGOs, urban movements).

In such an arrangement, the actors' roles are as follows (Malkki, Norvasuo & Hirvonen 2016, quoted after Perjo 2016):

- Public: steering urban development by providing resources and long-term development framework;
- Private: providing appropriate services and income (in the form of taxes) to the city;
- People: social groups mobilize citizens for the actions of the city / influence the development of the city.

Public authorities have a limited impact on market processes, where private and people are involved, the private sector cannot control a representative democracy, and people have no influence on the relations between the public and the private sector.

The 4P approach is part of a broader quadruple helix concept that addresses the cooperation needed to implement innovative solutions, where the importance of civil society is highlighted (Carayannis, Campbell 2009). Just as the 4P approach developed from public-private partnership, the quadruple helix is a modified concept first framed by H. Etzkowitz and L. Leydesdorff (2000), who, in order to emphasize the importance of tripartite cooperation between universities, businesses and public authorities in innovation, proposed the concept of triple helix. Both the 4P concept and the quadruple helix can provide the basis for reflection on actors and their roles within a specific type of public-private-people partnership, which is undoubtedly the city lab.

CITY LAB – ACTORS AND THEIR ROLES

The literature on living labs abounds in reflections on a variety of actors and their roles (e.g. Cosgrave et al., 2013, Leminen 2013, Leminen and Westerlund 2017, Nyström et al. 2014). Nyström et al. (2014) detail the different approaches to shaping and determining the specific roles in a network, such as a living lab. They have come up with four different approaches to role theory, one of which (structuralist) assumes that actors have pre-assigned roles in the network and the other three (symbolic interactionist, resource-based and action-based) assume their different levels of flexibility. The quoted authors advocate for this second group of approaches, assuming that roles in the living lab can be variable and are based on negotiations between actors in the network (Nyström et al., 2014, p. 485). One actor can perform multiple roles at the same time, and they may vary depending on the context and the purpose for which the network functions. Following this lead, the authors identified 17 potential roles in the living lab, of which 10 were completely new and 7 were derived from reflections on the innovation network (e.g. Heikkinen et al. 2007).

As we can see from the above, the issue of determining roles in a living lab is well known and widely discussed. The same cannot be said about the city lab, which, as we

know from earlier discussions in this article, is a new concept, which is in the phase of operationalization and conceptualization. We know the types of actors participating in the city lab, but no longer have pre-assigned roles. Assuming that the city lab is considered a network of open innovation, when describing the roles of its actors, we can use the findings of research on innovation networks and the living lab concept.

Taking into account the previous considerations, the author would like to differentiate the living lab from the city lab, taking into account the roles of the actors involved. Next, the author will indicate the reasons why companies should engage in the operation of city lab platforms, although the importance of companies in these structures is not as crucial as is the case with the living lab. For this purpose:

1. Reminds the actors involved in city lab activities.
2. Shows the tasks of these actors.
3. Indicates the premises for the involvement of companies in the city lab (next section).

As discussed above (4P, living lab, city lab), participants in city labs include the following (Nyström et al. 2014, Perjo et al. 2016; Scholl and Kemp 2016; Westerlund and Leminen, 2011):

1. Public authorities (politicians and civil servants).
2. Enterprises (they vary in terms of size and type, depending on the task being addressed within the city lab; Perjo et al. (2016) focus on actors participating in urban development planning processes, who may include small and medium enterprises, financiers, developers, architects, consultants, and different commercial actors).
3. Users/city residents (individuals or affiliated in formal and informal organizations, e.g. NGOs, urban movements).
4. Research units.

These groups of actors are also consistent with the quadruple helix concept (Carayannis & Campbell, 2009), where stakeholders are involved in the development of new solutions. In line with the working regions concept (Clark 2013), intermediaries (e.g. public agencies) also constitute important actors. The author of this article agrees with Clark's suggestion of the importance of intermediaries. This classification identifies the actors involved in the preparation, implementation, and monitoring of activities designated under the innovation policy (see Kopyciński 2017). The actors involved in the city lab therefore include:

1. Public authorities.
2. Enterprises.
3. City users.
4. Scientific units.
5. Intermediaries.

The basic tasks of these entities in the city lab are the following:

1. Public authorities:
 - a) Steering urban development: providing resources and long-term development framework (Malkki, Norvasuo & Hirvonen 2016) with the possibility of veto power (Scholl and Kemp 2016);
 - b) Initiator and primary decision maker, whose mission is to guard the achievement of the intended public purpose – to address the city's important prob-

lems in a different form than rigid bureaucratic urban development planning, seeking inspiration from everyday life;

- c) Co-ordinator of activities, both inside the unit (e.g. between the individual cells of the city office) and between different public entities, as well as different levels of authority, e.g. city, districts, regional and national authorities;
- d) A provider of procedures to implement the results of the experiment in the city;
- e) A participant in the process, but moderately engaged in experimenting.

2. Enterprises:

- a) They do not solve their own problems (as is the case in the living lab), but participate in an experiment;
- b) Solving technology problems is less important than in the living lab;
- c) Co-operation in the development of a compromise (e.g. in the field of low-carbon economy) and its adherence to sustainable urban development (e.g. limitation of housing volume, noise, pollution emissions, co-creation and co-financing of common space conversion, etc.);
- d) The need to reconcile often conflicting interests (e.g. architects who care about the quality of spatial development; developers intent on building and selling as many apartments as possible at the highest price; local shopkeepers opposed the location of large chain stores in city centres and big businesses; the largest space for cafeterias vs. pedestrians, cyclists and drivers);
- e) Diverse tasks due to the various actors of this sector. It is difficult to draw unambiguous conclusions based on the recently created concept and the presentation of two case studies. Taking into account the scarce knowledge and limited literature on the subject, it seems reasonable to indicate the following **three main, non-exclusive roles of companies in a city lab**:

- **Initiators** of the city lab (although companies could be forced/encouraged by city residents and the authorities acting on their behalf);
- **Contributor** to the development/implementation of a city lab project (depending on the financial capacity, it may be related to introduce previously unknown trends or engaging world-class experts);
- **Joint decision maker** (with other participants) on the selection of the best project (however, it should be remembered that if the company also acts as a contributor, its impact on the choice of the solution to be adopted can be really significant).

3. Users:

- a) Key active participants in the city lab process through experimentation, co-design, learning in real life context;
- b) Their task is much broader than that of living lab as it involves not only the improvement of goods (short-term perspective), but also the involvement in complex planning processes of the city (long-term perspective).

4. Research units:

- a) Less emphasis on research experience than a living lab;

- b) Assistance in planning processes (e.g. participation of urbanists, planners and students in the design of public spaces, or the creation of traffic control systems that reduce the number of cars entering the city).
5. Intermediaries:
- a) Various tasks, depending on the type of intermediary (e.g. public agencies: performance of tasks commissioned by the city authorities).

Based on the above considerations and using J. Benson's proposal to assign the network actors to one of the five groups (Benson 1983), the following relationships can be envisaged (Table 1).

Table 1. Living lab vs. city lab – characteristics

Characteristics	Living lab	City lab
Coordinator	Enterprise	City authorities
Managing entity	Depending on the task – the entity from quadruple helix + intermediaries	Depending on the task – the entity from quadruple helix + intermediaries
Provider group	Users of goods	City users
Support group	Research institutions, public authorities, intermediaries	Research institutions, enterprises, intermediaries
Recipient	- Direct: company - Intermediate: good users	- Direct: city authorities - Intermediate: city users
Main actor function	Company-profit maximization/loss minimization	City authorities – controlling the process of long-term urban development planning within the city lab
Lab functions	Private (realizing the purpose of the enterprise, using the knowledge of users of goods)	Social (realization of the social goal – improving the quality of life of city users)
Type of resources used	Private, social	Public, private, social
Basic tools	Communication between participants	Communication among participants with certain limitations resulting from the need to maintain the criterion of legality and reality
A measure of success	Launching a solution (good) on marked, worked out by consensus	Improving the quality of life of city users through the implementation of a solution, which has been worked out by consensus and is legal

Source: own study.

The city lab significantly differs from the living lab. In this first case, the coordinator of the activity is the company, whereas in the other one it is the city authorities. Solution providers are respectively the users of goods and city users. In both cases, apart from the users, public authorities and businesses, there are still research and intermediary bodies involved. Depending on the kind of task, one of those entities may assume the managing role. In the living lab, we use private resources for businesses and goods users as well as social resources of groups working to solve the problem, while in the city lab, in addition to these two types, the resources of public authorities are involved. Living labs are part of the involved companies' economic goals: profit maximization / minimization of losses (i.e. private goal), while the city lab contributes to long-term urban development plan-

ning (social goals). In the living lab, private resources are used for businesses. The users of goods use social resources in order to solve a problem, while in the city lab, apart from these two types, the resources of public authorities are involved. In both cases communication tools are used to solve the problem, except that in the city lab they are limited due to the need to meet the requirement of legality and workability. The success of the living lab leads to the introduction of a mutually agreed solution to the market, while the city lab is meant to improve the quality of life of city users.

Provision should be made for the above distinction to be made in extreme cases. For example, a living lab may aim to achieve a social goal unrelated to the egoistic expectations of the company, which may contribute to the improvement of the quality of life. This statement has been shown to highlight the differences in the model situation, with which, in the ideal form, we are dealing relatively rarely.

SHOULD COMPANIES ACTIVELY PARTICIPATE IN CITY LAB PLATFORMS?

Cooperation between companies and other entities is widely discussed in the literature, and due to the constraints of space, it will only be mentioned in passing. Apart from the subject of 4P, which was already discussed, in this context, the stakeholder theory and Corporate Social Responsibility (CSR) should be referenced as well. The stakeholder theory assumes that an enterprise, apart from striving to increase its revenues, should also include ethical and axiological considerations in its operation. As such, it is related to the concept of 'business social involvement' (Freeman 1983, p. 90). In recent years, I. Mitroff (1983) and R.E. Freeman and D. L. Reed simultaneously embarked on a discussion of this trend. So far, there are strong controversies as to how stakeholders can be understood (see: Miles 2011 and 2012). For example, R.E. Freeman (1984, p. 46) understands them as "any group or individual who can affect or is affected by the achievement of the organisation's objectives." The stakeholders include customers, suppliers and employees (economic power), government and interest groups (political power) (Freeman 1983, pp. 93–94), as well as local, regional and national communities, banks and shareholders (Gamble and Kelly 2001) and citizens (Crane et al. 2004).

The issue of stakeholders is more broadly addressed by CSR. The last one can be seen as a kind of interference in a company's business model by way of introducing a certain self-regulatory mechanism to ensure that the company conducts its business in accordance with the law, ethical standards as well as national and international standards (Rasche et al. 2017). The emphasis on being more socially responsible is related to, among others, the ethical and environmental problems highlighted by globalization processes, including the pressure to apply appropriate standards in the foreign investments recipient countries (Miles 2012, p. 292).

Based on synthetically presented stakeholders theory as well as the CSR concept, it should be said that due to the already quoted 'business social involvement,' there are serious arguments in favour of companies' engagement in business-related activities, such as city labs. Of course, such involvement applies to all companies, regardless of their size or country of origin, but it is worth emphasizing the special importance of this kind of activity for Multinational Corporations (MCNs), not only due to the significant loss of social trust after the 2007–2008 crisis (Burson-Marsteller 2011), but also the will to build their positive image in local communities. Prominent examples include the Visegrad

countries, whose largest cities (i.e. Bratislava, Brno, Budapest, Krakow, Prague, Warsaw) are viewed as prime targets for investment in the business services sector (Tholons Services Globalization City Index, 2017), which is a significant employer in these locations.

In view of the above, it appears reasonable to ask why companies, especially MNCs, should participate in the city labs, since, unlike the living labs, they are not the main actors and do not address their specific operating problems. The following answers may be suggested:

1. Building company image as part of Corporate Social Responsibility (CSR). Such undertakings as those in the case studies reviewed above, i.e. co-creation of a green area, or co-financing of a Climathon winning project directly fits in with such a company policy.
2. Building a positive company image and trust in relationships with city users and local authorities. In the long run, it allows to undermine critical thinking about MNCs, which can easily relocate, and cities as their servants, preparing infrastructure for their activities within smart cities (Amin et al. 2000, Hollands 2008, Shiller 1999). Thus, companies become equal partners in city development, alongside its users, public authorities, and research institutions.
3. Rebuilding of trust in international companies and their directors, which, as Burson-Marsteller's study shows, after the 2007–08 crisis, fell in Europe by several dozen percent (Burson-Marsteller 2011).
4. Particular interest of the company related to its activity/development. For example, in the field of spatial planning, it is easier for city authorities to issue construction permits, when its scope and nature has been previously agreed between the residents and the developer.
5. Signing up for Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development (Goal 11: Make cities inclusive, safe, resilient and sustainable). It assumes joint solving of current problems of the city, such as overpopulation, deterioration of infrastructure, lack of funds to provide basic services, and shortage of housing (United Nation homepage: <http://www.un.org/sustainabledevelopment>; Accessed March 2018).
6. As it stands in case studies, companies could be important actors of the city lab, playing the roles of initiators, contributors or joint decision makers.

CONCLUSIONS

This article discusses a fairly new topic of the city lab, pointing out the distinctive features of the living lab concept, which has been present in the literature for a long time. City labs pursue long-term public goals, which include not only improving the goods, but also broadening the planning base of the city development process. It seems fair to say that city labs reflect interest in the role of the state in implementing innovation in urban areas. The importance of public authorities (in this case, the city authorities: politicians and officials) is often insufficiently mentioned in the discussion on socio-economic development. As part of such efforts, city authorities may demonstrate flexibility in solving certain problems free of their rigid bureaucratic corset. At the same time, they take care of workability and legitimacy of solutions developed by the various actors (mainly city users), which increase the likelihood of their implementation. Therefore, the city lab can be understood

as a group of actions initiated by public authorities, aimed at long-term planning of city development (public purpose). They are implemented in the form of open innovation, by experimentation in the real-life context of various entities (primarily city users), where the city authorities (politicians and officials) are particularly concerned, which provide flexible procedures, going beyond the administrative corset. The authorities oversee the reality and legality of the solutions. In this perspective, the city lab can be considered as a kind of platform for implementing a specific type of social innovation – urban innovation, which is created to meet the needs of the city users.

City lab, through the significant involvement of the city authorities, eliminates the risks associated with the emergence of innovations present using similar platforms, such as living labs, which include impracticality of the proposed solutions, cancellations due to lack of legal basis or shortage of financial resources. This is due to the fact that the city authorities watch over the emergence of innovation, guarding its workability and legality. Of course, such supervision entails the risk of preventing other city lab actors from submitting their ideas, e.g. during brainstorming, which would not happen under a freer formula. However, due to the roles of public authorities reviewed above, the implementation opportunities increase. At the same time, the city lab preserves the positive aspects of living lab, such as creativity or multisectorality. However, the command centre is changing: from the company (living lab) to the city authorities (city lab).

Sometimes the concept of living lab is applied to different undertakings that those presented in the article, namely to projects which, according to the terminology adopted here, should be considered as a city lab. It is therefore reasonable to keep the two separate, bearing in mind their coordinators, functions and other criteria presented in this article.

Companies are not the most important city lab actors, so why should they become involved in this kind of platform (the second objective of this article)? First of all, in order to win the citizens' trust (or rebuild such trust, betrayed after the 2007–2008 crisis), which may be an important element of a wider CSR policy. In this perspective, companies are becoming one of the actors in building a smart city, participating in the development of urban areas rather than just a customer expecting the city authorities to create the right business infrastructure. Employees, including the managers of such companies, usually live in the city where they work, and spend their free time there; hence they should be interested in ensuring the best possible conditions for themselves and others. **Therefore, companies have an important role to initiate, co-finance and co-decide on the development of the city using city lab platforms.**

RECOMMENDATIONS FOR FUTURE RESEARCH

The author of the article is aware that the topic of city lab is fairly new and not extensively addressed by the literature. For this analysis, the author had a limited number of articles and case studies. Therefore, the conclusions drawn must be approached with caution. In order to make the basis for inference more grounded, it seems reasonable to suggest potential areas of interest to anyone interested in broadening their knowledge about the city lab. These areas are:

1. Operationalization of functions, resources and tools of city lab actors. The same applies to urban innovation – this concept requires further in-depth research into the actors, their roles, resources used, and the management methods used.

2. From the company point of view:
 - a) Analysis of a larger number of case studies allowing for the clarification of the conclusions presented in this article and perhaps indication of new roles of enterprises in city lab.
 - b) How the involvement of companies in city lab activities affects the perception of those firms by city users.
 - c) Comparison of city labs functioning in different countries (e.g. Central Europe) in terms of capturing the differences in the enterprises' tasks.

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