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Identifying Living Lab orchestrators' individual-level skills

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Abstract

This paper sheds light on the individual skills needed to orchestrate open Living Labs networks and activities. Since orchestrators (also called mediators) are people working on the interface of the macro, meso and micro levels of Living Labs, and in between various stakeholders such as universities, organizations, NGOs and citizens, specific skill sets are needed in order to enhance inclusiveness, balance, and communication among the different parties and to improve the sustainability of the Living Labs' projects according to the responsible research and innovation principles. Based on the literature, the skills are classified in three partially overlapping bundles: first, skills in building relationships, networks and ecosystems; second, skills in maintaining them; and finally, skills in executing multistakeholder innovation processes. As a summary of the literature review, a preliminary framework of orchestrator skills is presented.

Keywords: *Living Lab, multistakeholder co-creation, orchestrator, skills*

1 Introduction

Since 2011, the European research and innovation policy has emphasized Responsible Research and Innovation (RRI) (von Schomberg, 2013; von Schomberg, 2019) as a core criterion for public funding for research, development and innovation (RDI) activities. RRI emphasizes the inclusion of all societal stakeholders, including citizens, throughout the innovation process. This perception is coherent with the open Living Labs approach, in which companies, public players, universities, the civic society, and citizens interact and co-learn by co-creating knowledge and adding value in order to unleash innovation given the ability to laterally communicate with all the stakeholders. According to the European Network of Living Labs (2019), Living Labs (LLs) are defined as user-centered, open innovation ecosystems that are based on a systematic user co-creation approach, integrating research, and innovation processes in real life communities and settings.

Living Labs have been widely scrutinized as open innovation networks. Consequently, a concept of multistakeholder Living Lab collaboration has evolved over time. However, research has also pointed out challenges and paradoxes that occur while dealing with open innovation networks. According to Klerkx and Aarts (2013), the following three challenges and paradoxes require a network orchestration of the participating actors. First, balancing new relationships and existing relationships i.e. exploiting weak ties and fostering strong ties; second, determining the most appropriate way of interacting with other organizations, and third, balancing informal and formal relationships. We maintain that determining and enhancing the right skill set of the orchestrator is critical in order to solve these grievances pointed out by Klerkx and Aarts (2013).

Living Labs are seen as intermediary organizations (Almirall & Wareham, 2011) and the Living Lab methodology emphasizes competences to facilitate co-creation processes within those organizations (Dell'Era & Landoni, 2014). Likewise, the demand for skilled co-creation facilitators, such as T-shaped innovators, has been widely recognized for their ability to enhance innovation within industries (Barile, Saviano & Simone, 2015; Demirkan & Spohrer, 2015).

However, the results of recent systematic reviews on Living Lab literature and studies (Habibipour, 2018; McLoughlin, 2018; Westerlund et al, 2018) imply that extant literature on individual and organizational level competences needed in orchestrating the Living Lab networks and implementing activities is very scarce. Thus, to address the knowledge gap, the aim of this paper is to identify individual-level skills needed to orchestrate Living Lab networks and ecosystems and to execute Living Lab projects. In other words, this paper focuses on the individuals' skills related to open Living Labs activities, where the ability to motivate and include various actors in the network and co-creation activities are vital. The collaboration among various stakeholders is seen as a key success factor in joint problem solving and the innovation process based on RRI (Gray & Purdy, 2018, p.5; Lusch, Vargo & Tanniru, 2010; Von Schomberg, 2013; Von Schomberg, 2019). We acknowledge the importance of organizational capabilities (see more e.g. Kazadi, Lievens & Mahr, 2016; Schuurman, 2015, p.314; Vontas &

Protogeris, 2009); even though that is not the focus of this paper (see the Research design section below).

Due to the knowledge gap in Living Lab literature, we widened our literature search to cover the following themes: innovation ecosystem & orchestration skills, multistakeholder co-creation skills, networking skills, mediating skills (in the context of a multidisciplinary project), facilitating skills, and T-shaped innovator skills. Following the three-layered Living Lab model by Schuurman (2015, p.316), we aimed at identifying individual-level skills at macro (Living Lab constellation), meso (Living Lab innovation project), and micro level (Living Lab methodology).

In the next section, we discuss the skills identified in the above-mentioned streams of literature. The section concludes with a preliminary framework of the Living Lab orchestrators' individual-level skills. Thereafter, we present the research design of the larger study; this paper being the first step in the study. The article concludes with a short summary and discussion on potential contributions of the preliminary framework.

2 Literature review

This paper presents the Living Lab orchestrators' skills in three, partially overlapping bundles (Figure 1): first, skills in building relationships, networks, and ecosystems; second, skills in maintaining them; and finally, skills in executing multistakeholder innovation processes. It is emphasized that the skills presented in one bundle, e.g. maintaining relationships, networks, and ecosystems, are not exclusively needed in the particular task area, but they might also support successful execution of Living Lab projects.

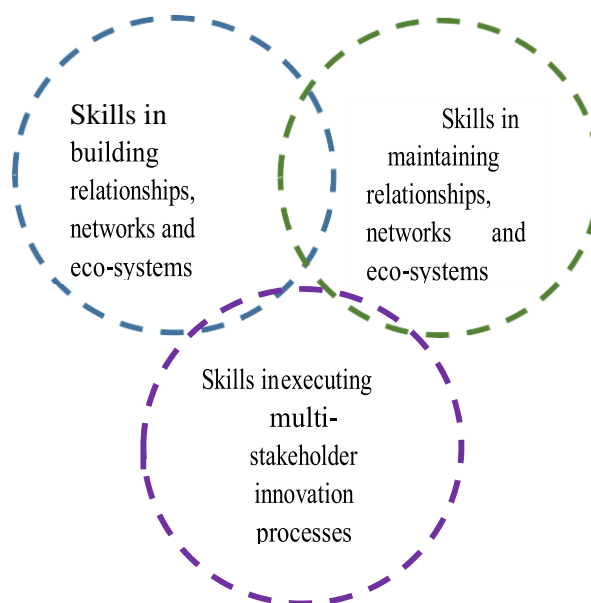


Figure 1. Living Lab orchestrators' skills categorized according to the three task areas
2.1 Skills in building relationships, networks, and eco-systems

Individuals' skills in building relationships, networks, and eco-systems in Living Lab constellations are categorized in two bundles of skills: visioning skills and networking skills.

Visioning skills are needed to outline challenges and opportunities for multistakeholder innovation processes; the vision guides decisions on which opportunities should be seized and who should be contacted and selected for partnership (Gray & Purdy, 2018; Jyrämä & Äyväri, 2005; Spekman, Isabella & MacAvoy, 2000; Äyväri & Jyrämä, 2007). In addition, visioning skills are important in fostering a willingness to see opportunities or competitive advantages and interdependences in multistakeholder partnerships (Gray & Purdy, 2018; Ritala, Armila & Blomqvist, 2009). Entrepreneurial skills e.g. sensing and discovering new opportunities, are similar to visioning skills (Ritala, Armila & Blomqvist, 2009). Wishful thinking and open-minded gifts are horizontal capabilities characterizing T-shaped innovators. The former refers to "a thought that emerges from a wish and creates a new opportunity... and is capable of triggering new future scenarios" (Barile, Saviano & Simone, 2015, p.1188). An ability to be open-minded refers to exploring unknown phenomena, seeking new experiences, and looking at the same phenomena through a different light and with different perspectives (Barilo, Saviano & Simone, 2015).

Individual level networking skills have been identified in several studies (e.g. Kazadi, Lievens & Mahr, 2016; Ritter & Gemünden, 2003; Äyväri & Jyrämä, 2007) and been acknowledged for consisting of complex routines and individual skills (Kazadi, Lievens & Mahr, 2016). Contact seeking abilities (Äyväri & Jyrämä 2007) as well as an ability to use one's own contacts (Kazadi, Lievens & Mahr, 2016; Äyväri & Jyrämä, 2007) and the partners' contacts (Äyväri & Jyrämä 2007) to identify potential new partners have been identified in previous studies.

The Living Labs as innovation networks combine dispersed resources, knowledge, and capabilities (Kazaki, Lievens & Mahr, 2016) in public-private-people partnerships (Westerlund & Leminen, 2011). In multistakeholder co-creation ecosystems (as Living Labs have been described by Westerlund & Leminen, 2011), all actors are resource-integrators that collectively co-create the shared value (Pera, Occhiocupo & Clarke, 2016). Hence, the following skills are needed when building relationships: stakeholder competence mapping skills (Kazadi, Lievens & Mahr, 2016), an ability to identify the needs of one's own organization and then inform other actors of those needs (Äyväri & Jyrämä, 2007), and skills in diverse recognition and ensuring inclusiveness (Azadegan & Kolfshoten, 2014). Furthermore, an ability to understand certain stakeholders' interests and aims and take them into consideration when communicating them to other potential collaborators has been identified by Jyrämä and Äyväri (2015). Personal influencing and motivating skills have also been emphasized when inviting others to join multistakeholder innovation processes (Ritala, Armila & Blomqvist, 2009). Another aspect in networking is brokering or bridging (Äyväri, Jyrämä & Hirvikoski, 2018), i.e. supporting and enhancing relationship building among different actors within one's own network by sharing contact information and introducing actors to each other.

2.2 Skills in maintaining relationships, networks, and eco-systems

Next, we discuss the individual-level skills of Living Lab orchestrators in maintaining relationships, networks, and eco-systems. However, we wish to emphasize that the following skills also support relationship building and executing Living Lab projects.

Communication and negotiation skills are prerequisites for fruitful interaction and collaboration. Besides information sharing, communication skills (Azadegan & Kofschoten, 2014; Jyrämä & Äyväri, 2015; McFadzean, 2002; Ritala, Armila & Blomqvist, 2009) are needed in building shared interpretations and in the framing and reframing of meaning making (Gray & Purdy, 2018, p.197-198; Purdy, Ansari & Gray, 2017; see also Pearce, 2008). Negotiation skills refer to the orchestrator's capabilities of taking the partners' interests into consideration (Barile, Saviano & Simone, 2015; Äyväri & Jyrämä, 2007) and to learn from tension between stakeholder interests in order to mediate those differences (Pera, Occhiocupo & Clarke, 2016). In addition, they include balancing skills (Ritala, Armila and Blomqvist, 2009) to maintain an equal distribution of power among different actors (Gray & Purdy, 2018, p.183). In multistakeholder innovation processes, conflicts can seldom be avoided, hence, conflict management skills (Azadegan & Kofschoten, 2014; Gray & Purdy, 2018, p. 87; IAF, 2019) are vital for maintaining relationships in ecosystems.

Social skills (Ritala, Armila & Blomqvist, 2009; Ritter & Gemünden, 2003; Äyväri & Jyrämä, 2007) are linked to communication and negotiation skills. In the context of Living Labs, social skills are especially related to creating an empathic and trusting atmosphere, they include an ability to sense other actors' feelings, an ability to show empathy, and listening skills (Barile, Saviano & Simone, 2015; Jyrämä & Äyväri, 2015). Social skills refer to social flexibility (Pera, Occhiocupo & Clarke, 2016; Äyväri & Jyrämä, 2007) supporting adaption to diverse backgrounds (Pera, Occhiocupo & Clarke, 2016) and building an appreciation among cross sector partners (Gray & Purdy, 2018, p.87). Social skills help to maintain shared ownership and consensus building in collaboration, thus increasing commitment in partnerships (Gray & Purdy, 2018, p.183).

Coordination skills are needed when coordinating the activities of the actors in innovation networks and eco-systems and when systematizing the routines linked to coordination (Äyväri & Jyrämä, 2007). When orchestrating and coordinating the multistakeholder collaboration, skills in lateral thinking involving re- combining and re-setting (Barile, Saviano & Simone, 2015) might become useful. Creativity and innovation capabilities to create and sustain a participatory environment for the ecosystem (Jyrämä & Äyväri, 2015) and to find original solutions (Pera, Occhiocupo, Clarke, 2016) that are effective, are needed to ensure the actors' willingness to continue with collaborative actions.

When considering the Living-Lab-as-service approach, client-centric service modification skills might be needed to ensure relationship continuity (cf. Äyväri & Jyrämä, 2007). Finally, we propose that Living Lab orchestrators need to have an ability to manage time (Äyväri & Jyrämä, 2007) in order to reserve enough

time for nurturing the relationships, thus supporting building trust and commitment among network actors.

2.3 Skills in executing living lab projects

When executing multistakeholder innovation processes, Living Lab orchestrators need project management skills consisting of e.g. planning skills, human resource management skills, skills related to funding and financial issues (see literature review on project management skills in Hwang & Ng, 2013). Extant studies on project management skills indicate that they cover a wide array of both management and leadership skills, and some of them are context specific. In Living Lab projects, we wish to emphasize the importance of the LL context specific skills (to be discussed next), hence they are not included in the bundle of project management skills.

Collaborative activities and co-creation in group settings are the core of Living Labs. Therefore, facilitating skills are necessary in managing group processes. Azadegan and Kolschoten (2014) have developed an assessment framework for practicing facilitators. One of the starting points of their study is the list of core facilitator competencies provided by International Association of Facilitators (2019). A competent facilitator plans appropriate group processes, evokes group creativity, facilitates group self-awareness of the task, and guides the group to consensus and desired outcomes (Azadegan & Kolschoten 2014, International Association of Facilitators 2019). It has been suggested that in addition to skills in group dynamics, skills in problem-solving and decision-making processes are part of the facilitators' competency (McFadzean 2002).

In the Living Lab literature, learning, knowledge-creation and knowledge transfer have been described as Living Lab activities (e.g. Hakkarainen & Hyysalo, 2016, Voytenko et al., 2016). A Living Lab project manager supports all the other actors' efforts in learning, knowledge co-creation and transfer with his or her pedagogical skills to build learning spaces for creating shared vocabulary and shared meanings (Jyrämä & Äyväri, 2015). Furthermore, a skilful orchestrator possesses an ability to share one's own knowledge, is willing to learn from others (Äyväri & Jyrämä, 2007), and open to new ideas originating from other actors (Pera, Occhicupo & Clarke, 2016). Learning and reflection skills (Jyrämä & Äyväri, 2015), knowledge- seeking capabilities (Barile, Saviano & Simone, 2015), and employee level absorptive capacity (Kazadi, Lievens & Mahr, 2016) refer to competencies in personal growth and development (McFadzean, 2002, see also IAF, 2019).

According to Schuurman's three-layered model of Living Labs (2015, p.317), different research steps are taken to generate user input and contribution on the micro level. User involvement methods and tools are provided by user innovation research (Schuurman & de Marez, 2015); hence the skills in this area are needed. In addition, research skills are needed in making conclusions based on the context and the opportunities available (Jyrämä & Äyväri, 2015). Besides research skills, a good command of design methods and tools is a valuable asset when executing Living Lab projects with multiple stakeholders, including users.

Evaluation is just one of the tasks for the Living Lab project managers. For example, McCormick (2016) maintains that “evaluation of the actions and impacts of Urban Living Labs is important to feedback the results, and revisit and refine the goals and visions over time. Evaluation underpins the ability of ULLs to facilitate formalized learning amongst the participants”. Thus, learning and evaluation skills are intertwined.

Depending on the context of the innovation co-created, tested, or validated during the execution of a Living Lab project, skills related to business model development and commercialization or skills related to upscaling or mainstreaming (in the context of social innovation) might also be needed.

Figure 2 summarizes the skills described above as a preliminary framework of the Living Lab orchestrators’ individual-level skills.

Building relationships, networks, and ecosystems (macro and meso level)	Maintaining relationships, networks and ecosystems (macro and meso level)	Executing Living Lab projects (meso and micro level)
Visioning skills Networking skills	Communication skills Negotiation skills Social skills Coordination skills Innovation and lateral thinking skills Client-centric service modification skills Ability to manage time	Project management skills Facilitation skills Learning and knowledge co-creation and transfer skills Research skills Design skills (tools, methods) Evaluation skills Commercialization and upscaling skills

Figure 2. A preliminary framework of the Living Lab orchestrators’ individual-level skills

3 Research design

The literature review presented in this paper is the first step in an upcoming larger study on individual-level skills and organizational capabilities needed in orchestrating Living Lab networks and ecosystems. The study is part of a project called Co-creation Orchestration (CCO), an evidence-based governance model enhancing the ecosystem’s value in co-creation, knowledge transfer, and business development funded by the Finnish Ministry of Education and Culture and Laurea University of Applied Sciences. The project will run until the end of 2021.

We will proceed to gather insights on individual-level skills through thematic interviews and interactive workshops with experienced Living Lab orchestrators or mediators. We will use abductive reasoning (Shank, 2002, p.119) to refine the preliminary framework (Figure 2). After finalizing the qualitative phase of the study, we will conduct a survey aiming for results that are more generalizable.

A similar kind of multi-staged research process will be conducted in order to identify the organizational capabilities needed to orchestrate multistakeholder innovation ecosystems.

4 Discussion

Addressing the challenges that have emerged from the existing Living Labs experiences, this paper has classified and described skills that are vital for orchestrating Living Lab networks and activities, with a focus on the orchestrator's role. The paper takes into consideration the sustainability of the ecosystems and also addresses the skills needed in navigating the networks in the long run. The individual-level skills are classified into three partially overlapping bundles: first, skills in building relationships, networks and ecosystems; second, skills in maintaining them; and finally, skills in executing multistakeholder innovation processes. The findings of this paper are beneficial for RDI and HR strategy building within all types of organizations and multistakeholder projects.

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