
Aron-Levi Herregodts* - imec-MICT-UGent
Ghent university, Korte Meer 7-9-11, 9000 Ghent, Belgium
E-mail: AronLevi.Herregodts@ugent.be

Annabel Georges - imec-MICT-UGent
Ghent university, Korte Meer 7-9-11, 9000 Ghent, Belgium
E-mail: Annabel.Georges@ugent.be

Bastiaan Baccarne - imec-MICT-UGent
Ghent university, Korte Meer 7-9-11, 9000 Ghent, Belgium
E-mail: Bastiaan.Baccarne@ugent.be

Dimitri Schuurman - imec-MICT-UGent
Ghent university, Korte Meer 7-9-11, 9000 Ghent, Belgium
E-mail: Dimitri.Schuurman@ugent.be

Abstract: Innovation intermediaries are confronted with different entrepreneurial types. Academic attention on the interactions between entrepreneurs and innovation intermediaries is limited. Four entrepreneurial types are discussed throughout this paper. These are based on the source of the entrepreneurial idea (Shah & Tripsas, 2007) and the (prime) motivation for entrepreneurial activities (Block, Sandner & Spiegel, 2015): end-user entrepreneurs, professional-user entrepreneurs, classic (opportunity-driven) entrepreneurs and forced entrepreneurs. Further, this paper proposes a conceptual entrepreneur-intermediary interaction process model, facilitating knowledge transfer, with 5 stages: alignment, learning activities, interpretation, sense-making and implementation. The process model is explored by means of a multi-dimensional case study of 8 projects with distinct entrepreneurial types. Evidence is sourced from the context of a Living-Lab-as-a-Service organization. The paper contributes to the understanding of entrepreneur-intermediary interactions in general, and interactions through Living-Labs-as-a-Service in particular.

Keywords: Innovation intermediary, entrepreneur, Knowledge transfer, User involvement, Living-Labs-as-a-Service, Organizational learning, Open Innovation.
Entrepreneur and the intermediary: Problem formulation

Open innovation is regarded as an optimal road to innovation. However, adequate management and alignment between open and closed approaches and interactions is required. Innovation intermediaries are organizations established to facilitate specific aspects of open innovation for other organizations during their innovation processes. These innovation intermediaries are confronted with distinct types of entrepreneurs requesting intermediary support and activities. Entrepreneurship (and entrepreneurial activities) and innovation intermediaries (and intermediary processes) on its own are two well-researched subjects in innovation literature streams. This is supported by respectively 426 and 760 hits on Web of Science (accessed on 24/01/2017). Scholars identified a distinctive list of intermediaries and intermediary activities with the object of knowledge transfer (Howells, 2006; Abbate, Coppolino & Schiavone, 2013; Colombo, Dell’Era & Frattini, 2015). In addition, diverse categorizations of entrepreneurial types were put forward (Smith & Minner, 1983; Westhead & Wright, 1998; Filion, 2004; McMullen & Shepherd, 2006; Shah & Tripsas, 2007; Block, Sandner & Spiegel, 2015). Publications on intermediaries (and intermediary types) only briefly, or implicit, incorporate entrepreneurship (and entrepreneurial types) and vice versa. Today, we assume innovation intermediaries employ a one-solution fits all approach, when interacting with different entrepreneurial types.

A distinct type of innovation intermediary are the so-called Living Labs (Ståhlbröst, 2013). Although all Living Labs act as innovation intermediaries for the different involved stakeholders, we focus on Living-Labs-As-A-Service, which embodies multiple of the intermediary functions as listed by Howells (2006). Within this type of Living Lab organizations and activities, the entrepreneur role is clearly identified as ‘customer’ of the Living Lab. What distinguished these Living Labs from other innovation intermediaries is the clear focus on an active user orientation, and taking into account the real-life context. Living Labs mediate between actively contributing users and the innovating entrepreneurs. A rather large share of literature has been devoted to the types and characteristics of end-users and their (potential) contributions. This gives structure to the user-intermediary interactions. However, much less attention is devoted to the other side of the mediation process, between the entrepreneur and the intermediary. We believe the challenge for Living-Labs-as-a-Service lies in the interpretation and translation of user contributions to actionable entrepreneurial knowledge, throughout entrepreneur-intermediary interactions. Therefore, we assume the type of entrepreneur, as well as the type of user, plays a role in the intermediary process.

In sum, the above gives rise to this study of preliminary and explorative nature, shedding light on the entrepreneur-intermediary interactions and processes regarding user orientation as part of the knowledge transfer process. To meet this study’s objective, the paper is structured as follows: after this brief problem formulation (1), the literature review (2) will cover entrepreneurial types and discuss Living-Labs-as-a-Service as a specific type of innovation intermediary, (3) the third section will propose a conceptual model on the entrepreneur-intermediary interactions, (4) in the fourth section we will discuss the research design and the cases on which this model was applied, the findings will be discussed (5) and a conclusion with practical implications and future research steps will close this study (6).
2 Literature review

Entrepreneur

"Entrepreneur: [NOUN] - A person who sets up a business or businesses, taking on financial risks in the hope of profit (Oxford Dictionary, accessed on 23/01/2017)"

Entrepreneurial action is central to most theories of entrepreneurship. Here, two distinct concepts are of importance: knowledge and motivation. The degree of knowledge that one entrepreneur possesses indicates an amount of perceived uncertainty. Correspondingly, motivation is related to the willingness of bearing certain amounts of uncertainty. Entrepreneurial action is then coping with these uncertainties (McMullen & Shepherd, 2006). Scholars have put forward a number of categorizations of entrepreneurial types. These categorizations are based on different parameters: Socio-economic status and personality (Smith & Miner, 1983), being involved in more than one venture (Westhead & Wright, 1998), the innovation and its managerial system and -activities (Filion, 2004), uncertainty and risk attitude (McMullen & Shepherd, 2006; Block, Sandner & Spiegel, 2015), the origin of the entrepreneurial idea (Shah & Tripsas, 2007). Block, Sandner and Spiegel (2015) focused its categorization on risk attitudes. They identified two types of entrepreneurs: Opportunity entrepreneurs and necessity entrepreneurs. Opportunity entrepreneurs pursue a business out of opportunity and are willing to take risks, whereas necessity entrepreneurs pursue a business through necessity. These types of entrepreneurs are conceived as more risk averse. Shah and Tripsas (2007) distinguished two types of entrepreneurs based on the origin of entrepreneurial ideas: professional-user entrepreneurs and end-user entrepreneurs. Professional-user entrepreneurs are “embedded in an organization and employ a product in their professional life, they experience a need for improvement and leave their firm in order to develop and commercialize a solution” (ibid., p. 124). End-users entrepreneurs are then “individuals who use a product in their day-to-day lives” (ibid., p. 124). User-entrepreneurs are distinct in a sense that they have personal experience with a product or service and their benefit lies in use in addition to financial benefit from commercialization. We combine this motivation to innovate - out of necessity/being forced, and opportunity seeking (Block, Sandner & Spiegel, 2015) - and the source of the entrepreneurial idea - internal, external - (Shah & Tripsas, 2007) in following typology. We assume the source of the entrepreneurial idea (internal: need, external: detected opportunity) to have an impact on the availability or absence of knowledge. We arrive at following categorization to use in the continuation of this study: end-user entrepreneurs, professional-user entrepreneurs, classic entrepreneurs and forced entrepreneurs (table 1).

Notwithstanding the fact that opportunities exist because of inefficiencies in the allocation of resources in the economy (Shah & Tripsas, 2007), entrepreneurs, as individual or as being representative of SMEs, are typically resource constrained (Katzy, Turgut, Holzmann & Sailer, 2013, p. 296). Resources are limited in terms of time, funds, workforce and sense-making capacity (Heiskanen & Repo, 2007). Hitherto, they will always have a strong need to collaborate owing to their lack of internal resources. Perhaps the most important resources are the individual knowledge bases, here knowledge asymmetries exist.
Table 1: Typology of entrepreneurs based on motivations to innovate and source of the entrepreneurial idea

<table>
<thead>
<tr>
<th>Entrepreneurial type</th>
<th>Description</th>
<th>Author</th>
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<tbody>
<tr>
<td>End-user entrepreneur</td>
<td>Motivation is driven by personal, necessity, reasons (need). Source of the idea is internal.</td>
<td>Via: Shah &amp; Tripsas, 2007</td>
</tr>
<tr>
<td>Professional-user entrepreneur</td>
<td>Motivation is driven by professional, opportunities. Source of the idea is internal</td>
<td>Via: Shah &amp; Tripsas, 2007</td>
</tr>
<tr>
<td>Classic entrepreneur</td>
<td>Motivation is driven by opportunistic reasons. Source of this idea is mainly external (detected).</td>
<td>Via: Block, Sandner &amp; Spiegel, 2015; Shah &amp; Tripsas, 2007</td>
</tr>
<tr>
<td>Forced entrepreneur</td>
<td>Strong motivation out of necessity. Forced to adapt or take on a defensive strategy to survive. Source of the idea is mainly external (detected)</td>
<td>Via: Block, Sandner &amp; Spiegel, 2015</td>
</tr>
</tbody>
</table>

Information processing (knowledge in) and critical analysis of the available options (uncertainties) may come at high costs. Heiskanen and Repo (2007) note that information processing and entrepreneurial action may compete for the same resources. As we noted earlier, entrepreneurship requires action (McMullen & Shepherd, 2006). Due to asymmetries in available stocks of knowledge and limited resources to cope with all faced uncertainties, entrepreneurs are motivated to engage with innovation intermediaries.

**Living-Labs-as-a-Service: a specific type of innovation intermediary**

Intermediary: [NOUN] - A person who acts as a link between people in order to try and bring about an agreement; a mediator (Oxford Dictionary, accessed on 23/01/2017).

Howells (2006) describes innovation intermediaries as a set of actors performing a wide variety of tasks in the innovation process. Abbate, Coppolino and Schiavone (2013, p. 233) note that innovation intermediaries can play an important role in development and acceleration of the combination of knowledge and competences necessary to solve innovation problems. “The main value proposition of an innovation intermediary is to bridge different gaps between internal and external knowledge” (Abbate, Coppolino & Schiavone, 2013, p. 238). An innovation intermediary is thus used as an umbrella term to denote a wide range of organizations (Howells, 2006). Based on a literature review, Howells (2006) identified 19 types of innovation intermediary organizations and 4 types of innovation intermediary processes. Colombo, Dell’Era and Frattini (2015, p. 129) distinguish four types of innovation-intermediaries, based on the axes ‘access’ (proposals and sources) and ‘delivery’ (solutions and contracts). The four types are brokers, mediators, collectors and connectors. Brokers provide ready-to-use solutions to clients, soliciting occurs. Mediators start from an understanding of their clients’ needs, and then identifies which sources of knowledge within their network are appropriate. Collectors

A specific type of innovation intermediary are so-called ‘Living Labs’. The Living Lab is presented as a process coordinating innovation intermediary for “(1) closing the pre-commercial gap by manifesting initial demand for products and services, as well as (2) orchestrating the actions of disparate actors in order to gain critical mass for the creation of a product or service” (Almirall & Wareham, 2011, p. 100). Living Labs are further described as “environments for innovation and development where users are exposed to new ICT solutions in (semi-) realistic contexts, as part of medium- or long-term studies targeting evaluation of new ICT solutions and discovery of innovation opportunities” (Katzy, Turgut, Holzmann & Sailer, 2013). In 2006, the European Commission promoted Living Labs among other initiatives as instruments to advance, coordinate and promote a common European innovation system (Bergvall-Kåreborn, Eriksson, Ståhlbröst & Svensson, 2009). Today, according to their webpage, 406 Living Labs are connected to the European Network of Living Labs (ENoLL). In this regard, Living-Labs-as-a-service were put forward by Ståhlbröst (2013) as “the offering of such services such as designing the idea-generation processes, planning or carrying out real-world tests of innovations, and pre-market launch assessments”. In terms of Schuurman’s (2015) model of Living Labs, we reconceptualize Living-Labs-as-a-Service as follows: Living Lab organizations that have developed a specific project process or methodology aimed at entrepreneurs to assist them in their innovation process. These entrepreneurs, sometimes referred to as utilizers of the Living Lab, engage in a customer-client relationship with the Living Lab to get in touch with (end-)users to help shape their innovations.

We assessed the Living-Lab-as-a-Service, as we conceptualized it, on the 10 innovation intermediation functions as listed by Howells (2006, pp. 721-722). We identified five intermediation functions that are offered by the Living-Lab-as-a-Service under some form of intermediary activities: (1) Foresight and diagnostics: in aiding in the articulation of needs and requirements, (2) Scanning and information processing: on technology-intelligence and scoping and filtering, (3) Knowledge processing, generation and combination, (4) Testing and validation: testing, diagnostics, analysis and inspection, prototyping and offering pilot facilities and validation, finally (5) Evaluation: with technology assessment and technology evaluation. The distribution of the share of intermediary activities is of course dependent on the type of Living Lab organization. We conceive the offering of a Living-Lab-as-a-Service as the ideal research context, due to its offering of multiple intermediary functions in the form of intermediary activities.

### 3 Entrepreneur-intermediary interactions in Living-Lab-as-a-Service projects

A first, and primary, reason to engage with innovation intermediaries is to intermediate relevant external knowledge inflows. Second, because of limited resources, entrepreneurs tend to engage with innovation intermediaries to ‘outsource’ certain tasks within the innovation process to the intermediary. Central to the Living-Lab-as-a-Service offering is the active multi-actor involvement. Here, the intermediation of relevant external
knowledge is mainly sourced by user oriented intermediary activities. Previous research (Heiskanen & Repo, 2007) already demonstrated that user orientation often implies a significant inflow of new information into the product development process. This information may be difficult to accept, process, or absorb. The purposive inflows of external knowledge to an organization’s new product process are mainly discussed from theories of absorptive capacity in general (Cohen & Levinthal, 1990) and more specific organizational learning (Cohen & Levinthal, 1990; Lane, Koka & Pathak, 2006). However, solely the perspective of the organization is used. Therefore we want to shed light on the entrepreneur-intermediary interactions regarding the inflow of external knowledge, intermediated via user orientation.

Hereinafter we provide a representation of the entrepreneur-intermediary interactions regarding the shaping, executing and assimilation of the intermediary activities by the entrepreneur. When a distinct type of entrepreneur decides to interact with an innovation intermediary, alignment takes place (Colombo, Dell’Era & Frattini, 2011, p. 176). The entrepreneur’s needs are mapped and intermediary activities are selected to meet these needs. This is a combined effort of both the entrepreneur as well as the intermediary. Next, (intermediary) learning activities take place, with the aim to identify useful insights (Colombo, Dell’Era & Frattini, 2011, p. 176). This once again is a combined effort. The intermediary takes on the majority of the activities, however it could be that the entrepreneur is engaging in learning itself known or unknown by the intermediary. The information from these learning activities are then discussed and interpreted by both the intermediary and the entrepreneur (Heiskanen & Repo, 2007). For the entrepreneur this gives rise to (individual) sense-making processes, meaning is attributed to the new inflows of information and it is rationalized (Weick, Sutcliffe, & Obstfeld, 2005). After the sense-making processes, it is decided whether the new knowledge is to be assimilated and implemented in new products or services (Lane, Koka & Pathak, 2006, p. 856). Here, we draw on the organizational learning activities as part of absorptive capacity: exploratory learning, transformative learning and exploitative learning (Lane, Koka & Pathak, 2006, p. 856). The process model can be repeated when the entrepreneur experiences additional knowledge needs. This process is displayed schematically in figure 1.

Figure 1: Entrepreneur-intermediary interaction process model
When we apply this interaction process model to a Living-as-a-Service organization, the phases are completed as follows:

- **Alignment:** A dedicated alignment meeting is organized to gain clear insights in the entrepreneurial needs and expectations of the entrepreneur-intermediary interactions.
- **Learning activities:** Activities such as contextual inquiries, interviews, workshops, field studies, etc. take place.
- **Interpretation:** Interpretation followed by discussing the results of the learning activities in dedicated reporting meetings.
- **Sense-making:** Part of the interpretation and what it means for the entrepreneur happens by the intermediary, but in essence this takes place in the mind of the entrepreneur.
- **Implementation:** Implementation of the sense-made interpreted results might or might not happen depending on the entrepreneur's belief and value attached to the results.

We believe the interactions as described in this conceptual model and the success of such interactions is highly dependent on the type of entrepreneur: where does the idea originates from and what is their motivation for entrepreneurial activity. Therefore, the goal of this paper is to explore the possible problems one innovation intermediary, operationalized via a Living-Lab-as-a-service, can encounter when interacting with different types of entrepreneurs. In other words, we investigate entrepreneur-intermediary interactions regarding knowledge transfer via user orientation in order to optimize the entrepreneur-intermediary interactions.

### 4 Research design to apply the theoretical framework throughout case-studies

The main objective of this exploratory study is to shed light on the entrepreneur-intermediary interactions and processes regarding user orientation as part of the knowledge transfer process. Therefore within this study we follow a multiple-case study design because this method allows to understand complex social phenomena consisting of multiple units of analysis (Yin, 2009, p. 245). A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2009, p. 118). The author team benefits from a special access to the research context: a Living Lab organization offering Living-Lab-as-a-Service. The case study design was complemented with elements of action research as the author team purposefully designed, iterated and participated in the cases. Case-study design heavily rely on multiple sources of evidences (Yin, 2009, p. 120). The following sources of evidence were used: e-mail communication between the Living Lab organization and entrepreneurs, meeting notes, pre- and post-assessment inquiry, initial project proposals, projects reports and project deliverables. The data sources were triangulated and discussed within and external to the author team. The unit of analysis was the Living-Lab-as-a-Service Project, in which entrepreneur-intermediary interactions took place. We ended up discussing 8 cases that were selected out of a broader sample of 42 projects. The projects lasted minimal 4 months up to 1 year and took place between 2012 and
We purposefully investigated archetypical, out-of-the-ordinary cases. The cases were anonymized for reasons of confidentiality. The cross-case analysis is multi-faceted. We assess the differences and similarities on the different interaction levels as conceptualized in the entrepreneur-intermediary interaction process model.

<table>
<thead>
<tr>
<th>Case Nr</th>
<th>Case description</th>
<th>Entrepreneurial Type</th>
</tr>
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<tbody>
<tr>
<td>Case 1</td>
<td>App to support planning of activities</td>
<td>End-User</td>
</tr>
<tr>
<td>Case 2</td>
<td>Application to meet-up with people</td>
<td>End-User</td>
</tr>
<tr>
<td>Case 3</td>
<td>Strategic management tool for managers</td>
<td>Professional-User</td>
</tr>
<tr>
<td>Case 4</td>
<td>Platform to optimize transportation of goods</td>
<td>Professional-User</td>
</tr>
<tr>
<td>Case 5</td>
<td>Application to improve driving behavior</td>
<td>Classic</td>
</tr>
<tr>
<td>Case 6</td>
<td>Technology for screencasting</td>
<td>Classic</td>
</tr>
<tr>
<td>Case 7</td>
<td>App for user generated news reporting</td>
<td>Forced</td>
</tr>
<tr>
<td>Case 8</td>
<td>Platform to inform users about consumption products</td>
<td>Forced</td>
</tr>
</tbody>
</table>

### 5 Results

**Case summaries**

**Case 1.** This specific case concerned the development of an app to support planning. We categorize the representing entrepreneur as an end-user entrepreneur. His innovation was motivated by strong needs in his personal life. This entrepreneur was obligated to take services of the Living Lab organization by a funding organization. This resulted in a low openness to the project results (learning activities & interpretation), probably because of this sense of obligation. In addition, personal characteristics reinforced this limited openness and consequently commitment to the Living-Lab-as-a-Service. Trust issues arose on the learning activities by the intermediary and the interpretation of its outcomes. We assume the cause to be searched with cognitive dissonance: the entrepreneur accepted positive feedback, but was sceptic concerning negative feedback. This was enforced by the parallel running learning activities at the side of the entrepreneur, who actively involved friends and family. The entrepreneur considered his own learning activities as equally valuable as the learning activities at the side of the intermediary organization. We found this entrepreneur to have limited trust in the intermediary activities: he continued to do his own things, instead of getting maximum value out of the intermediary organization, which can hinder the knowledge transfer on these activities. In addition, the development process ran completely isolated from the intermediary learning activities. No implementations happened based on the input from user orientation. The entrepreneur simply replied to the research results with “I already knew that” in the case of supportive
evidence and “that is an isolated opinion” in terms of criticism. This became most apparent during face-to-face interactions with end-users where the entrepreneur went constantly in 'defense'-modus (interpretation and sense-making). A posteriori, the Living-Lab project the entrepreneur described the period of the intermediary activities as an ungrateful period. He commented to be stubbornly holding onto ideas without allowing external inflows of knowledge.

Case 2. This innovation concerned an innovation to meet-up with people. The development of this innovation was strongly motivated by personal needs experienced in the day-to-day life. Here, the entrepreneur paid a significant sum of the Living-Lab-as-a-Service cost and wasn’t obligated to take part in such an organization, when compared to case 1. The entrepreneur was self-motivated and thus committed to the intermediary services, which we assume to impact the trust in the execution of the learning activities and its outputs. This strong commitment can also be drawn forth by the limited resources (time, experience) this entrepreneur had regarding user orientation. Interpretation of the outcomes was mainly in line by the interpretations as provided by the intermediary organization. When compared to case 1, the entrepreneur managed to interpret the outputs and make sense out of the interpretation more easily. The entrepreneur always went straight to work (implementation) with the outputs and made changes based on the outputs of intermediary learning activities.

Case 3. This case concerned a strategic management tool. The entrepreneur was categorized as a professional-user entrepreneur. The tool gives managers a visual overview of their strategic path and of potential opportunities and threats in order to help determining a long term strategy. The initial goals of the Living Lab project were to gather feedback from end-users (here: interviews with managers) on the application, get a view on use cases and usage in a field trial and assess the market potential and willingness-to-pay (learning activities). This case is worth mentioning, because a total of four steering committees took place to discuss the findings of the learning activities (interpretation): as user-feedback came as a surprise for the entrepreneur. The entrepreneur explicitly expressed appreciation regarding the concrete, critical and external, (user) test. After the difficult interpretation of the inflows of knowledge, the target market was found to be not ready for such an application (sense-making). This information was used to revert from initial plan and adapt the strategy. “reculer pour mieux sauter” as the entrepreneur phrased it in the post-assessment inquiry (implementation).

Case 4. Here, the object of the project concerned a platform to optimize transportation. We categorized the entrepreneur as a professional-user entrepreneur. The primary reason of the entrepreneur to interact with the intermediary was of clear resource constraints (limited time, limited experience regarding user orientation). We found the entrepreneur to be highly committed to the project and showed high appreciation to the learning activities and interpretation by the intermediary. The limited time however constrained the learning activities at certain points: limited to no initiation happened by the entrepreneur to update the intermediary organization on developments regarding the platform.
**Case 5.** This case concerned the development of an application to improve driving behaviour. We conceived the entrepreneur as a classic - opportunity driven - entrepreneur. Here, alignment showed to be problematic. Clear focus was missing as the entrepreneur was exploring multiple paths at the same time. This comes down to not being committed to one single, but multiple, intermediary organization which hinders the process. Throughout the learning activities, we found the entrepreneur to show limited interest to user feedback, and showed a very defensive stance to the generated feedback. The learning activities of these multiple intermediaries were not in tune with each other, nor did knowledge transfer happen. The lack of focus thus impacted the learning activities. Implementation of sense-made, interpreted results was difficult due to the multiple avenues of exploration.

**Case 6.** This case concerned the development of a technology for screencasting. We categorized the entrepreneur as classic - opportunity-driven - entrepreneur. In addition, the entrepreneur could be conceived as a serial entrepreneur. This project was inspired by one of his preceding projects. The case was an example of a technology-push: technology was available, however specific use-cases had to be explored. The entrepreneur focused on the technology performance compared to alternatives, other factors were not taken into consideration. Learning activities were found to be difficult. In addition, the entrepreneur had limited trust in the intermediary activities and stated that he was going to do user tests himself, without explicitly sharing results. Due to a low commitment regarding the Living Lab organization we experienced this as a pure customer-supplier relationship. The entrepreneur was only interested in the outcomes (interpretation) and not the process and learning activities that lead to these outcomes. The entrepreneur didn’t implement any of the sense-made interpretations. Assimilation of knowledge (interpretation, sense-making and implementation) was difficult.

**Case 7.** This case concerned an app for civilians to report news facts. We conceived the representative for the project as a forced entrepreneur. Alignment took a significant part of the effort of the intermediary. This was caused by a strong cultural schism internal to the organization. Change, supported bottom-up, was resisted by managerial layers. Therefore alignment with the intermediary organization was hard due to an internal misalignment. Learning activities at the side of the intermediary took place, however interpretation and sense-making happened by non-decision makers. Even though we can conceive the entrepreneur (in-residence) as a clear representative for this project. The absence of the right decision-makers hindered the assimilation of external-knowledge inflows. Implementation, and thus change, was blocked and didn’t occur.

**Case 8.** This case concerned the development of a platform to inform users about consumption products. This entrepreneur was a forced entrepreneur, confronted with a shrinking market and increasing digitization. Expectations regarding the intermediary organization were more than the intermediary organization could provide. This put pressure on the entrepreneur-intermediary relationship and posed difficulties in the alignment and the shaping of the initial learning activities. After the initial difficult alignment, the entrepreneur showed higher degrees of focus. Due to being forced, the entrepreneur was very committed to the Living-Lab project and was very open and enthusiastic regarding the intermediary learning activities. In addition, the entrepreneur explicitly stated the interest in methodologies on user orientation to apply on different
projects. Compared to case 6, this was exactly the opposite of a customer-supplier relationship. This stimulated the interpretation, sense-making and implementation stages.

Recurring themes and Pattern matching

To summarize our case summaries we briefly discuss the key recurring themes, focusing on challenges that can occur for different entrepreneurs through each interaction level:

- **End-user entrepreneur**: When openness to the intermediary organization appeared to be limited, interpretation of the learning activities was more difficult (case 1).
- **Professional-user entrepreneur**: Interpretation of the learning activities was sometimes harder, the source of the entrepreneurial idea is internal (need-based) and thus cognitive dissonance can occur more predominantly (case 3 and 4).
- **Classic entrepreneur**: Learning activities can be difficult: due to parallel activities, a lack of trust or limited commitment (case 5 and 6).
- **Forced entrepreneur**: Difficulties on the alignment level: initial focus might be problematic. With entrepreneurs-in-residence, the right authority level can pose difficulties (case 7 and case 8).

In addition to the above-listed challenges on the levels of interaction, we also identified five recurrent challenges impacting the entrepreneur-intermediary interactions:

- **Trust issues** (in the intermediary organization/activities) - Not-invented-here (NIH) syndrome: negative attitudes against external inflows of knowledge (Burcharth, Knudsen, & Sondergaard, 2014) (case 1 and case 6).
- **Limited openness** - Openness can be hindered by technical knowledge, market knowledge, protection mechanisms,… (Drechsler & Natter, 2012) (case 1 and case 3).
- **(Cognitive) dissonance** - Cognitive dissonance, resistance to change. Elements in our thinking and the perception are in conflict (Hoffmann, 2011, p. 83) (case 1 case 3).
- **Limited commitment** - due to time constraints, occurrence of other parallel intermediary interactions (case 1 and case 6).
- **Decision authority** - When entrepreneurs-in-residence are appointed, but have limited decision authority. Report to management external to the entrepreneur-intermediary project (case 8).

6 Conclusion, limitations and future work

This paper’s main objective was to shed light on the entrepreneur-intermediary interactions regarding user orientation as part of the knowledge transfer process. Evidence on the interactions between distinct types of entrepreneurs and an innovation intermediary was provided from a Living Lab organization offering a Living-Lab-as-a-Service, hereby interpreting results from user orientation activities.

We conceptualized a typology of entrepreneurs, innovation intermediaries are confronted with, based on the source of the entrepreneurial idea and the motivation to innovate. We
distinguished four types of entrepreneurs: end-user entrepreneurs, professional-user entrepreneurs, classic entrepreneurs and forced entrepreneurs. We proposed a conceptual entrepreneur-intermediary process throughout which knowledge transfer occurs. We conceptualized five consecutive stages: alignment, learning activities, interpretation, sense-making and implementation. When mapping cases on the interaction process we identified five main challenges impacting the interaction and knowledge transfer, specific to the types of entrepreneurs confronted with: occurrence of trust issues (mainly for end-user- and professional-user entrepreneurs), limited commitment (classic entrepreneurs), limited openness (all, except for forced entrepreneurs), cognitive dissonance (end-user and professional-user entrepreneur) and problems of decision authority (forced entrepreneurs).

For classic entrepreneurs and forced entrepreneurs we identified occurring predominantly in the alignment stage (whereas focus plays an important role). Both end-user- and professional-user entrepreneurs may experience a sense of cognitive dissonance when confronted with opposing (user) feedback. Here challenges more often are situated with the interpretation and sense-making of the output of learning activities. Forced entrepreneurs were found to be very open to the learning activities and committed to the intermediary organization in general. Absence of the right decision authority was found to severely hinder the intermediary activities. At the Living Lab organization we try to cope with the different entrepreneurial types with a pre-assessment (self-reporting) to help shape the initial alignment meeting. Adapting this alignment meeting to the entrepreneurial type showed preliminary fruitful results.

In sum, this study is of relevance for practitioners at both the side of the intermediary organization as well as the entrepreneur. A limitation of the study is that the intermediary learning activities were predominantly assessed from a user orientation viewpoint. Here, we want to self-warn for so-called ‘user fundamentalisms’, but a complete defensive stance was also found to be limiting for the entrepreneur-intermediary interactions. Another limitation is the limited number of cases. A more exhaustive study will provide us with additional, potentially opposing, evidence regarding entrepreneur-intermediary interactions.

In future research, we want to dig deeper on the intermediary learning activities as designed throughout alignment interaction for distinct types of entrepreneurs. We believe the information processing is impacted by the type of entrepreneur an innovation intermediary is confronted with. The selection of learning activities should then be selected not only for the state of the innovation, but also for the type of entrepreneur confronted to stimulate the absorption and organizational learning on the purposive inflows of external knowledge.

9 References


