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Changing collaborative practices in tourism – a Living Lab case

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The fragmented nature of the tourism industry limits destinations' capacities and motivations to innovate. To counter this fragmentation, destinations rely on destination management organisations (DMOs). However, DMOs have had very little or no success in stimulating innovation, hence the importance of exploring other models, such as Living Labs (LLs), to boost the innovation capability of tourism stakeholders. In this context, innovation takes place collaboratively, iteratively and over a long period of time. Through participant observation and a Delphi, this paper analyses the innovation capability of a group of tourism stakeholders involved in action research through a LL aimed at co-creating an experience enhanced by technology. It argues that the co-creation processes at work in the LL have raised innovation capability by using a combination of technology-supported innovation processes and *in situ* innovation processes.

Tourism is undergoing a complete technological revolution that has upset the industry and its businesses and forced them to rethink their operations (Baggio et al. 2014; Gretzel *et al*. 2006; Buhalis & Law 2008). While the industry is considered a pioneer in the use of information technology (IT) (Buhalis & Law 2008), innovation has not been widely discussed in tourism literature (Halkier et al. 2014).

Furthermore, new innovation paradigms are emerging and transforming existing innovation processes. One such paradigm is open innovation, which proposes that businesses use external knowledge and skills to accelerate the innovation process (Chesbrough 2006). Strong competition and the risks that innovation entails are driving many organizations to put the consumer or user at the heart of innovation efforts (Westerlund & Leminen 2011). However, the tourism industry appears to struggle to integrate those new approaches (Najda-Janoszka & Kopera 2014).

Although research on tourism innovation is a relatively recent phenomenon, it is possible to identify drivers, barriers and innovation processes specific to the industry. We will focus more specifically on the role of destination management organizations (DMOs) in stimulating tourism innovation. We will look at how implementing a Living Lab (LL) can help DMOs to boost tourism innovation at the destination level. Then, we will introduce the LL concept and discuss the specific LL process implemented as part of our research, and its impact on innovation among project stakeholders.

Theory/Issues - Innovation in the Tourism Industry

The internet has globalized the tourism offering (Buhalis & Law 2008), generating fiercer competition between businesses and destinations and driving many of them to try and innovate in order to remain competitive (Halkier, Kozak & Svensson 2014). This very competitive environment, coupled with major technological change, has placed innovation at the heart of the tourism phenomenon. The internet and mobile phones unleashed a wave of innovation that keeps transforming the ways of travelling and the tourist experience (Buhalis & Law 2008). Innovation can take place at the offering level (products and services) or at the process level (Weiermair 2004; Najda-Janoszka & Kopera 2014). The key factors that drive tourism businesses to innovate include customers, competition, industry leadership (Weiermair 2004) and technology providers (Najda-Janoszka 2013). But the true catalyst for innovation is the tourists themselves, or customers (Weiermair 2004; Najda-Janoszka 2013). Although tourists are looking for new experiences, the tourism industry in its current form is struggling to innovate (Weiermair 2004; Halkier, Kozak & Svensson 2014; Najda-Janoszka & Kopera 2014), faced with a number of barriers. Najda-Janoszka & Kopera (2014) identified the main barriers to tourism innovation and grouped them into categories: environmental, organizational and innovation process-related (table 1).

These authors argue that several barriers stem from features that characterize the tourism industry: heterogeneity of businesses, large number of small businesses, volatility of businesses, and vulnerability to demand fluctuations. Moreover, low propensity to collaborate on innovation and inefficient knowledge transfer create a low-trust culture among partners (Hjalager & Nordin 2011). Several authors also point out that public institutions, despite their key role in fostering innovation, are viewed as significant forces of inertia (Halkier, Kozak & Svensson 2014; Najda-Janoszka 2013; Weiermair 2004). Tourism policies and strategies are often inadequate, as they fail to respond to the current needs of businesses and the changing

TABLE 1. The barriers to innovation in tourism

Environmental (external)	*Organizational (internal)*	*Innovation process-related*
Heterogeneity of businesses Size of businesses Volatility of businesses Demand fluctuations Low-trust culture Inadequate tourism policies Limited legal protection	Small size of businesses Lack of innovation management, knowledge management and change management culture High personnel turnover Insufficient IT skills and resources	Informal, ad hoc and poorly understood innovation process Inefficient knowledge management process Lack of interest from businesses

Source : adapted from Najda-Janoszka and Kopera (2014)

market environment (Najda-Janoszka & Kopera 2014).

Although the tourism industry claims to place consumers/tourists at the forefront, they are virtually never involved in innovation processes (Najda-Janoszka & Kopera 2014; Guimont & Lapointe 2015). Tourist involvement could be achieved by opening up the innovation process (Chesbrough 2006; Lapointe & Guimont 2015), notably through co-creation of the tourist experience. With the rise of social media, it is becoming ever more difficult to continue viewing tourists merely as passive consumers (Gretzel, Fesenmaier & O'Leary 2014). Today's tourists expect the industry to cater to their complex and individual needs (Gretzel, Fesenmaier & O'Leary 2014). Tourists must be considered full-fledged players involved in the market (Neuhofer, Buhalis & Ladkin 2013; Gretzel, Fesenmaier & O'Leary 2014) and as potential co-creators of the products and services intended for them, therefore calling for an opening of the innovation process of the tourism industry.

Co-creation is primarily an approach that places the user, or tourist, at the heart of the destination's processes and strategies. It offers a new perspective on the market, resources, tourists and technology, incorporating tourists' ideas and creativity into the design of tourist products and services (Tussyadiah & Zach 2013). This integrated approach is thought to boost innovation. Co-creation means looking at the destination in a new light and developing tools, techniques and capacity for involving not only tourists (Tussyadiah & Zach 2013) but also other stakeholders in the tourism system—basically, working *with* tourists rather than *for* tourists. Public institutions fail to take on a leadership role in fostering collaboration and innovation (Najda-Janoszka & Kopera 2014).

The low propensity of tourism businesses to collaborate on innovation (Najda-Janoszka & Kopera 2014; Hjalager 2002) highlights the need for an effective and efficient intermediary that can improve collaboration and stimulate innovation. Since DMOs play a key role in ensuring competitiveness and cooperation at the destination level, one might think that they would take on a leadership role in fostering collaboration on innovation. Tourism SMEs that struggle to implement the management systems required to spur innovation (Rønningen 2010) could turn to DMOs or other organizations for knowledge and information, to allow them to innovate. But the truth is that DMOs seem to have trouble adapting to the current technology revolution (Gretzel *et al.* 2006; Neuhofer, Buhalis & Ladkin 2013) and to therefore position themselves as innovation leaders. In fact, public institutions overseeing tourism are often said to hinder innovation (Weiermair 2004; Najda-Janoszka 2013). The difficulty in getting tourism stakeholders to collaborate is now a major hurdle to innovation in tourism (Halkier, Kozak & Svensson 2014; Najda-Janoszka 2013) and forces tourism organizations to seek other innovation models.

Living Labs as a means to empower innovative communities

While value creation used to be considered the sole prerogative of businesses, value is nowadays co-created by both individuals and businesses (Prahalad & Ramaswamy 2004). Co-creation—a new, individual-oriented way of looking at how the market works—has driven organizations to design new ways of involving and collaborating with individuals (Kotler, Kartajaya & Setiawan 2010). Innovation, which was traditionally restricted to academics or research and development departments, now increasingly calls on users as co-creators. Methods are being modelled on innovation networks or ecosystems from the IT industry, including LLs.

LLs fall within the open innovation paradigm and involve a user-centric approach. They provide "physical regions or virtual realities in which stakeholders form public-private-people partnerships (PPPP) 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" (Leminen, Westerlund & Nyström 2012: 7).

We believe that the process holds promise for stimulating tourism innovation. Through LLs and co-creation, "tourist service providers will obtain insight to what tourists actually want" (Lenart, Pucihar & Malešic 2014). Such insight could not only enable identification of new markets, but also spur

innovation, development and product improvement (Buhalis & Amaranggana 2014) through more frequent interactions among stakeholders in a partnership. Interactions between users (tourists) and providers of technology and tourist services being a key catalyst for innovation (Hjalager 2002). In addition, LLs have the potential to become innovation facilitators (Schuurman *et al*. 2013; Lapointe & Guimont 2015), foster open innovation (Lapointe *et al*. 2015) and thus create what DMOs are struggling to build: an environment that promotes cooperation among tourism industry stakeholders to enable innovation (Najda-Janoszka 2013). Indeed, this LL approach and milieu aims at enabling co-creation, which is an important constitutive element of the open innovation paradigm (Leminen, Westerlund & Nyström 2012).

Methods and Procedures

We used two methods to analyze the impacts of the project toward innovation capabilities of the tourism practitioners: a) Action research through the set up of an LL and b) a policy Delphi.

Action research through the set up of a Living Lab

With the LL approach, users must be at the centre of research or innovation efforts. Instead of attempting to understand users or consumers through studies, some organizations now prefer to directly involve users in their actual innovation process (Westerlund & Leminen 2011).

The project's LL process and the stakeholders involved: The DMO's initial goal was to update its sightseeing routes (available on paper maps), in particular its rural attractions. The LL approached the DMO and offered to lead a co-creation process involving stakeholders and tourists working together to develop a technology proposal for the sightseeing route update. We also approached a private-sector partner who would be involved not as a mere supplier but as a full-fledged co-creator of a technology-enhanced tourist experience.

Our action research in an LL context involves three stakeholder groups: the LL associated with the local teaching institution, the DMO and a local web developer. A steering committee made up of one representative from each group is in charge of project coordination. The breakdown of stakeholder groups is as follows:

User groups involved in co-creation

- Tourism stakeholders: Volunteers who commit for two years. 19 tourism stakeholders, all DMO members. They take part in eight co-creation workshops, both in-situ and on the online platform. Recruited from the pool of DMO members.
- Tourists: Volunteers. French-speaking tourists who use information and communications technology (ICT) and own a tablet or smartphone. 21 tourists from Quebec. Online participation only.

Our action research in an LL context relies on phases, cycles and activities adapted from the FormIT approach (Bergvall-Kareborn, Holst & Ståhlbröst 2009). The first iteration of the five-phase process took place during Year 1 of the project: *Planning + Concept design + Prototype design + Innovation design + Implementation*.

During Year 2, the co-creation process was repeated. This second iteration allowed for adjustments to the collaborative working mechanisms and the application itself. New workshops with the stakeholders helped to observe new usages and explore new ideas to enhance the tourist experience.

The role of the lead researcher is to oversee the LL process, prepare co-creation workshops, and facilitate co-creation both in-situ and online. She or he leads the "experimentation" component and describes how innovation capability is growing, including the drivers and barriers at play. The collaborating researchers support the co-creation process, deliver specific workshops on technology and the tourist experience, and help to document and characterize the growth in innovation capability. The research team leads the experimentation component. It describes how innovation capability is growing and discusses the drivers and barriers at play (Guimont & Lapointe 2016). The LL is used as "an approach to support and implement processes of open innovation in the context of academy-society collaboration projects" (Levén & Holmström 2008).

b) The policy Delphi

To supplement the results obtained from participant observation conducted in the context of action research, the researchers used not only the Delphi method but also the policy Delphi for assessing the expectations and perceptions of the participants. The objective of the classic Delphi method is to achieve the consensus of a relatively homogeneous group of experts, while the policy Delphi essentially generates different views in the event of the resolution of a problem. Participants are not seen as experts but rather as stakeholders of a problem to solve (Linstone & Turoff 2002). Since our LL participants are indeed stakeholders, this method is relevant for our project, and especially in the context of a DMO where conflicts of interests or personality and power situations can easily arise between the organization and its members. Together, the policy Delphi method permit to collect consensuses, paradoxes and contradictions perceived by the stakeholders without the filter of the structuring organization, in our case the DMO.

For our study, the policy Delphi and Delphi method consisted of two rounds. In the first round, stakeholders were consulted on the importance and feasibility of integrating the different components of a model, developed by Neuhofer, Buhalis & Ladkin (2013), designed to improve the technology-enhanced experience which tourists have of a destination In the second round, the stakeholders were confronted with the opinion of the group and given the opportunity to clarify their thinking and rally or justify their disagreement with the group. The model of Neuhofer, Buhalis &

Ladkin (2013) was conceived as a new approach to the market insofar as it incorporates the paradigm of co-creation experience (Prahalad & Ramswamy 2004) as well as the emergence of technology as a mediator of these experiences (Tussyadiah & Fesenmaeir 2009).

Results

Action research through the Living Lab process implemented in Rivière-du-Loup
Over the years, many regions around the globe have looked at tourism and made it the cornerstone of their development strategies. An explosion in the number of destinations ensued. While many of them are small, they still need to deal with the technology revolution that is transforming the tourism industry. Investigations into how a smaller destination manages to integrate new innovation practices are therefore extremely relevant. The essentially rural territory of the Rivière-du-Loup area makes it an interesting object of study, with unique dynamics compared to large urban centres.

The area's DMO is a private association with a membership of some 230 tourism organizations and businesses. Members also include the municipalities, which provide nearly 50% of the operating budget through public funds. The association is very active, focusing on the traditional DMO roles: information and promotion. It fosters dialogue and supports development initiatives as much as its resources allow.

Based on the above list of barriers (adapted from Najda-Janoszka & Kopera 2014), the area (its tourism businesses and its DMO) struggles with the following:

- Limited IT skills and resources;
- The generally small size of businesses combined with a high personnel turnover (due to their seasonal nature), which gives organizations limited absorptive capacity for technology and innovations;
- A lack of knowledge about change management culture within businesses; inertia among organizations; a poor understanding of the value of innovation; risk aversion;
- Rudimentary levels of trust and collaboration, especially compared to open innovation standards;
- On the flip side, businesses and stakeholders are willing to innovate in spite of existing barriers.

These observations show the value and challenge of boosting innovation and stakeholder innovation capability, and provide the backdrop for our action research of co-creating a tourist experience enhanced by technology in the context of a Living Lab.

Stimulating innovation: Now that the project is almost completed, the main goal has been reached: a mobile app now offers new ways to explore the region. The collaborative process yielded a concept more fitting than the DMO's original goal (before getting involved in the project, the DMO wanted to develop podcasts).

Moreover, we can observe changes in stakeholder innovation capability. The project is acting on both the barriers and the innovation process. Changes were observed in all three of the above-mentioned barrier categories.

Gaps in IT competency in the stakeholder population had been identified at the outset of the LL project. We can see that the gaps have shrunk and that stakeholders' IT skills have improved. First, upgrading efforts were made: stakeholders received training on co-creation and on the role of technology in tourism. The fact that participants actively contribute to the collaborative platform and share best tourism and IT practices on the project's Facebook page provides further evidence of the shrinking gaps. Finally, participants are embracing IT and tourism discourse and concepts during in-situ meetings.

We also observe changes in the innovation management culture. Project stakeholders told the researchers that they have incorporated open innovation tools into their management practices. New behaviours include using innovation project management template and involving stakeholders in innovation efforts. The matrix used by the project researchers to characterize and describe innovation initiatives was adopted by other stakeholders, who now manage their own projects in a more participative and user-centric fashion. Other changes stemming from the project are taking place across the DMO.

For the DMO, the project was a catalyst for change and made it aware of its role in driving members towards innovation. A rethinking of the DMO's planning strategy ensued. The five-yearly tourism forum was organized using a participative and collective intelligence approach focused on members as users and on community dynamics. Furthermore, the DMO applied knowledge management strategies as a means to identify best practices and in an effort to place tourists and their knowledge at the heart of planning activities. We can conclude that the project has shifted the focus to users—whether DMO members or tourists—as a potential source of innovation.

The new focus on tourists as users was also observed among other project stakeholders. As the project advanced and the mobile application, which is its core deliverable, started to take form, stakeholders increasingly suggested recourse to the tourist panel, whereas such suggestions used to be made only by researchers. Stakeholders now spontaneously suggest that questions be put to tourists instead of looking for answers themselves, and researchers have to adapt the surveys sent to the tourist panel accordingly. As a result, the innovation process is increasingly centred on the needs of tourists/users.

The project has also lifted or reduced process-related barriers, formalizing the innovation and solution-seeking process among stakeholders. The result has been integration of in-situ open innovation practices (Lapointe & Guimont 2015) by project stakeholders in their own development activities. Two local development agents have incorporated such

processes into their operations. Another example would be the tourism forum based on open innovation practices organized by the DMO in order to identify high-priority projects for strategic planning. Lastly, the technology provider involved in the project is a committed participant in the LL process: it finds the process inspiring and does not attempt to derail it and impose its regular technology development process instead. The provider has also expressed interest in using the LL FormIT process for future development efforts.

As for external barriers, the project has fostered a climate of trust within the industry. Collaboration opportunities among stakeholders have flourished. In addition, stakeholder engagement has been maintained. Since the very beginning, few participants have left; in fact, new people were gotten on board as the project advanced. In addition, information sharing among stakeholders has grown, whether in-situ, on the collaborative platform or on the project's Facebook page. Lastly, the related projects jointly initiated by project stakeholders testify to the climate of greater trust that now exists.

Stakeholders have not only raised their innovation capability in the specific context of the project, but also developed new innovative projects of their own beyond the scope of the LL project that is the focus of our research. We regard such spin-offs as the main indicator that participation in an LL project has raised stakeholders' innovation capability. Four spin-off projects are already underway, spurred by the acquisition of knowledge about the 2.0 tourist experience and the integration of co-creation skills. The projects are as follows:

- New inspiration/search module better suited to visitors' needs on the DMO's website
- Creation of a research and development unit, as part of the web developer training program, that works on developing a bank of techno-concepts (AR, VR, connected objects, geolocalization, etc.) that can be used in tourism contexts.
- Launch of two technology-enhanced experiences in a museum: Free Alice! and The Haunted Room of Alice.
- Launch of a joint geocaching/treasure hunting project by the town and county departments of cultural development.
- New action research project aimed at turning an island in the St. Lawrence river into a tourist destination using LL-inspired collective intelligence processes.

Results - The Delphi

In the two rounds of Delphi, all 10 participants rated as very important or important the integration of all elements of the model (Neuhofer, Buhalis & Ladkin 2013) to the destination strategy. Asked about the feasibility of integrating the model, they identified enablers and challenges to do.

(a) Enablers:

- The process of mobilization and reflection on experience and technology in the business destination with the LL;
- The mobilization of actors and the good level of collaboration among members;
- The dynamism of the local tourism industry as well as the strengths of the region in terms of tourism;
- The understanding that, in the model of Neuhofer, Buhalis & Ladkin (2013), the role of technology must be used to enrich the consumer experience. This requires a new approach to technology, which was well summarized by a respondent as follows: "Allowing co-creation demands a consistent platform, simple and suitable for the consumer and helpful to others," and further, "The technology should also allow the consumer to be more independent." The technology should not be used primarily to communicate with the consumer unidirectionally, but should be used to enrich consumers' tourism experience.

(b) Challenges:

- Requires more human and financial resources: Significant financial pressure from IT; Difficulties in convincing lenders to grant more financial resources; Lack of human resources; Need to further train human resources to make the transition to the model of technology-enhanced tourist experiences.
- Need to improve the partnership between the different actors of the destination: Resistances regarding the development of cooperation on the part of tourism stakeholders in the region.
- Need to improve the technological knowledge of the market and to transmit this knowledge to other actors; Need to develop strategic capabilities, whereby innovation and creativity emerge as a challenge; Proliferation of technologies and their rapid evolution; Internal capacity to choose, prioritize and target projects; Difficulty to let the consumer decide (participation of the consumer as a full actor of the co creation of the destination does not seem an acquired practice by stakeholders gained).

Delphi participants considered it to be very important to integrate all the elements of the Neuhofer model, as it allows to better meet the needs of consumers and the market today. They thus recognize the relevance of the model for the enrichment experiments of Neuhofer, Buhalis & Ladkin (2013), and thereby the relevance of the approach of co-creation experience (Prahalad & Ramaswamy 2004) described previously. The participants clearly wish to integrate the different elements of the model and possibly consider feasible the achievement of this objective. The reflection and mobilization processes undertaken by the LL can help facilitate the transition to the new approach proposed by the

destination in Neuhofer, Buhalis & Ladkin (2013). Nonetheless, the new approach confronts stakeholders with the following obstacles and challenges: the lack of financial and human resources; the development of new strategic capabilities; the development of cooperation between DMO, its members and consumers; showing more creativity and innovation; and exploring and researching the technology required to enrich consumer experiences.

Conclusions

In spite of the above-mentioned limitations, our results lead us to conclude that tourism stakeholders involved in the project have raised their innovation capability. Initially, Rivière-du-Loup's tourism community faced many of the typical barriers to innovation in the tourism industry. However, our action research has shown us that the selected LL approach has indeed reduced several barriers to innovation at the destination level. The capacity of LLs to stimulate innovation, which has already been observed in more technology-intensive industries (Schuurman *et al*. 2013) but also in the tourism industry (Lenart, Pucihar & Malešic 2014; Sifrer *et al*. 2012), is confirmed in our case. In addition, participants identify the LL approach as a good way to meet these challenges. Change can be seen in the way that stakeholders embraced the technological tools and the LL process, and in the emergence of a climate of greater trust that generated spin-offs. Accordingly, this research also confirms results from our past work on open innovation (Lapointe & Guimont 2015) and the potential of LLs as intermediaries to open up the innovation process, but also as a means to raise stakeholder innovation capability. The power of the LL to boost innovation capability stems from the co-creation process which, as part of this research, helps to establish an innovation management culture and a climate of trust among stakeholders.

Researchers' role in the process is threefold: they are sparks that move the LL forward, facilitators, and critics who reassess the process and its outcomes in collaboration with stakeholders. Based on our experience, we can say that while researchers can step away from the "spark role," the other two roles tend to stick. This is evidenced by spin-offs from our project. Although such spin-offs were not initiated by researchers, the stakeholders involved still turn to researchers for help in facilitating and critically assessing the process. In addition, the LL's role as an intermediary and innovation facilitator enables innovation leadership in an industry whose very structure (prevalence of SMEs and fragmentation across sectors) makes it hard for a champion of innovation to arise.

While the process implemented with the Rivière-du-Loup DMO has enabled tourism stakeholders to take part in a structured innovation process, the ultimate question remains whether it will stand the test of time and be widely adopted by the community. The LL originally set up for co-creating a technology-enhanced tourist experience would need to become a more permanent entity providing innovation support, as requested by tourism stakeholders. Spin-offs and stakeholders' expectations and perceptions provide evidence that a new culture of innovation—more specifically open innovation—is emerging in the industry. Nevertheless, it is too early to say whether innovation has been institutionalized yet and at what scale the next step should occur.

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