

## Experimenting with innovation processes: the case of reinventing a museum through collaboration

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### ABSTRACT

This paper explores how experimenting with collaborative processes contributes to reinventing the purpose and practices of an organization. Based on a case study of the Insectarium of Montréal, we focus on the 2-year collaborative process orchestrated by the director, involving employees, experts and visitors. Our findings show several organizational implications of engaging in this type of experimentation: specifically, beyond enabling the collective generation of new ideas, experimenting through collaboration is an excellent opportunity to renew the organization's practices. This suggests that despite the inherent challenges associated with organizational experiments, there are clear benefits of engaging in such experiments to stimulate innovation.

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### INTRODUCTION

An ever-increasing complex world has prompted a need for innovation in many companies to stay competitive and relevant. More and more organizations choose to engage in collaborative innovation to tap into knowledge from different sources and co-create solutions to complex problems. Indeed, a collaborative innovation process holds significant potential to offer creative solutions (Girotra et al., 2010, Björk and Magnusson, 2009, Boeddrich, 2004, Smith, 1998). However, this stream of research is more concerned with the specific methods and techniques that can be used for a specific purpose (Eppler et al., 2011), rather than viewing collaborative innovation as embedded in a larger organizational process, impacting the focus of organizations, their management as well as their practices.

Collaborating to innovate has its challenges, as it often entails bridging different institutional logics (Gawer and Phillips, 2013, Purdy and Gray, 2009), developing new collaborative capabilities (Blomquist and Levy, 2006, Swink, 2006, Huxham, 1993) and facing an unwillingness to compromise, political struggles and unrealistic expectations on one another (Yström, 2013). As a result, organizations seeking to implement collaborative innovation need to develop new skills and competences in managing such new way of working, e.g. by engaging in organizational experimentation, in order to create applicable knowledge and shape new innovation tools and methods (Sörenssen et al., 2010).

Experimenting with collaborative innovation then becomes a vector to collectively test and shape new practices that would persist within the organization beyond the sole experimentation. Yet, while there are a few examples of application of experimenting with different forms of collaboration (Sörenssen et al., 2010), the organizational impact of such experimentation with collaborative processes need further exploration. A better understanding of the potential and actual organizational implications of engaging in such experiments would strengthen the relevance and validity of using an experimental approach to stimulate innovation in organizations.

To fill this research gap, this paper elaborates on a case study of a museum adopting a new way of working to reinvent the experiences of visitors. As such, it addresses the following research question: what is the impact of experimenting with collaborative processes on the purpose and practices of an organization? Or in other words, *in what way does experimenting with collaborative innovation stimulate the reinvention of practices in an organization?* This is further elaborated in two sub-questions: 1) how can collaborative processes contribute to a new perception of the organization? and 2) how can collaborative processes contribute to change the way the museum works?

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## THEORETICAL BACKGROUND

During the past 20 years, a strong trend has developed in innovation management shifting the focus of value creation from a product- and firm-centric view to personalized consumer experiences (Prahalad and Ramaswamy, 2004). Some have argued that we are now entering the “experience economy” (Pine and Gilmore, 1998), which has also been reflected in recent developments in the cultural sector. Museum managers struggle to maintain their museum’s integrity as a distinctive collecting, conserving, research, exhibiting and educational institution, and, simultaneously, making their museum more popular and competitive (Coblence and Sabatier, 2014, Burton and Scott, 2003, Kotler and Kotler, 2000).

Current strategies to transform museums can be summarized in three themes: 1) Improving the museum-going experience 2) Expanding mission into community service e.g. to develop the region 3) Market repositioning towards entertainment, potentially transforming the museum identity (Kotler and Kotler, 2000).

Focusing on the first theme, experience design, defined as “an approach to create emotional connection with guests or customers through careful planning of tangible and intangible service elements” (Pullman and Gross, 2004), is something which has gained popularity especially in many hospitality and retail businesses, such as e.g. health care (Bate and Robert, 2007) and tourism (Ellis and Rossman, 2008). The idea is that from a managerial perspective, it is possible to design for experience and to facilitate an environment for experience by manipulating key elements (Pullman and Gross, 2004). Still, it needs to be acknowledged that experiences are constructive activities, and require people to share their perceptions of an experience for others to comprehend it. Understanding how people feel gives us the ability to empathize with them (Sanders, 2002). This way of knowing provides invaluable tacit knowledge necessary to understand the experience, but also places high demands on the organizational process needed to successfully design innovative experiences.

But while there is substantial literature examining the reshaping, reinventing and reimagining of museums and the museum experience (Peacock, 2008, Moore, 1999, Hein, 2014, Anderson, 2004, Sandell and Janes, 2007, Falk and Dierking, 2016), few scholars address the actual process through which a museum can undertake such an endeavour and its organizational implications (Peacock, 2008). The mission of a museum today is complex, and its operation is intertwined with many different stakeholders.

An increasingly common way for organizations to generate creative ideas and tap into new knowledge is to engage in various ways with e.g. partners, suppliers, customers and users to co-create innovation (Keys and Malnight, 2012, Schroll and mild, 2011, Baldwin and von Hippel, 2011), but despite the current interest in

adapting collaborative strategies, in practice many organizations lack experience of implementing them and therefore tend to underestimate the challenges of engaging collaborative innovation processes (Huxham and Vangen, 2004). Successful collaboration is argued to require considering the initial identification and involvement of key stakeholders; the maintenance of the collaboration process; and the (long-term) implementation of collaborative outcomes (Arnaboldi and Spiller, 2011) and to have a process that allows for continuous dialoguing among collaborators to overcome challenges (Fayard and Metiu, 2014).

But it appears that stakeholder collaboration (Arnaboldi and Spiller, 2011) involves complex and disorderly interactive processes (Fisher, 1999) and it is only by engaging in those processes that organizations can build up a collaborative competence and successfully harness the outcomes. Such experience can be gained e.g. by engaging in organizational experiments, where a specific action is taken, and the consequences of that action are thoroughly evaluated in order to extract relevant learning. Experimental approaches tend to be underestimated in innovation research (Mäkinen *et al.*, 2015), but have a great potential as they have a clear focus on real-life problem solving and the creation and implementation of practically applicable knowledge, while simultaneously creating new and otherwise hardly retrievable scientific knowledge about innovation processes (Sörensen *et al.*, 2010). Such knowledge can be useful also for other actors as it provides indications of how certain actions will influence certain outcomes even though procedures cannot be applied blindly but needs to be adapted to particular contexts.

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## METHOD AND DATA

Our paper builds on an exploratory, qualitative case study of a single case. A case study design was considered the suitable choice as our aim of the research was to answer “how” questions (Yin, 2003), to gain an in-depth understanding of the collaborative process.

Our case is the Insectarium of Montréal, a museum part of the Space for Life consortium including several other museums in Montréal, where an experimental project took place in 2012, which reshaped many internal practices within the organization.

Our study specifically focuses on a 2-year collaborative process orchestrated by the director of the Insectarium, involving employees, experts and visitors. In 2012, the Insectarium initiated a long-term project of renovating the museum in-depth. The first step of this renovation entailed the director of the Insectarium launching an experimental collaborative process to craft and frame the call for architectural proposals to rebuild the museum. The purpose of that process was to rethink visiting experiences of the museum, and to therefore create a comprehensive brief that would be given to

architects to propose new designs for the future building of the Insectarium. Yet, unpredictable effects occurred as well, and many practices within the organization changed due to the experiment.

The collaborative process was emergent and not planned beforehand. Such a process was completely new to the director of the Insectarium and broke with the traditional routines of the employees of the museum who either conduct research on insects, breed them or interact with visitors within the museum. Even though it was an emergent process, the head of the museum retrospectively presents the collaborative innovation approach as a four steps process (see Fig.1):

- **Preparation:** Before embarking on any collective approach, the head of the museum undertook preparatory work. For example, several inspirational notebooks were created by artists who then met with the Insectarium teams, thus providing interesting sources of exploration and development paths for the museum.
- **Launch:** Then a kick-off event took place in May 2012, labelled as "Living Lab". Involving about sixty people, from the Insectarium but also from the outside, long sessions brainstorming led participants to question themselves, to reconsider the fundamental elements of an insectarium and to generate questions relevant to the future museum. Following this event, the director of the museum carried out an individual exercise of synthesis, clarifying the values of the future insectarium, and defining major orientations in terms of visiting experiences and architectural challenges.
- **Collaborative ideation workshops:** To enrich and give shape to these first orientations, the management team of the Insectarium organized a series of collaborative ideation workshops involving employees of the Insectarium and external partners. The aim was to accelerate ideation and to elicit definitions of more precise concepts as well as the development of visiting experiences. This phase made it possible to further develop the visiting experiences, to translate the needs in terms of spaces and thus to produce a preliminary concept for the future museum.
- **Validation of proposals with users:** In order to validate some of the ideas developed during the phases of ideation, a phase of experimentation and prototyping with workshops involving citizen participation was initiated. The goal was to test six concepts with the general public through three open workshops.



Fig. 1. The four steps of reinventing a museum

To investigate how experimenting with collaborative processes can contribute to reinventing an organization's purpose and practices, we conducted 12 semi-structured interviews with employees and management of the Insectarium as well as external participants, after the collaborative process was completed. We asked questions regarding the way the interviewees experienced the project, regarding the way the museum functioned prior to the project and regarding current practices within the museum. Each interview lasted between 60-90 minutes. Appendix A outlines key themes and questions addressed in the interviews. To complement the interview data and to further inform our analysis, we also had access to the multi-media archives of this 2-year process, documenting the different steps taken, as well as all the power-point presentations that the head of the museum made in order to present the project and how she saw her role in it.

This paper is primarily founded on an analysis of the interview data, which followed an inductive approach to concept development by means of open and axial coding (Gioia et al., 2013). After conducting an initial round of coding using the interview transcripts by assigning open codes to the data, we made an effort to identify similarities and differences among the numerous codes (Strauss and Corbin, 2008): by abstracting from some of the informants' terms, we merged and simplified categories to allow us to work with a more manageable number of categories, and was ultimately able to outline two main themes as presented in this paper.

## RESULTS

"I started off as a guinea pig, 'let's go, let's try, let's explore.'" (Head of the Montréal Insectarium)

Since opening in 1990, the Insectarium of Montréal has distinguished itself by being innovative. Being the first museum in North America dedicated exclusively to the life of insects, the Insectarium has piqued the curiosity of its visitors thanks to its entertaining and engaging approach: as proof of this, the museum welcomes an average of 340,000 visitors per year and this average is increasing. This is so much the case that since its 20th anniversary in 2010, it has become increasingly obvious that the Insectarium faces serious

issues in terms of its ability to welcome all these visitors. Facing this situation, Anne Charpentier, Head of the Insectarium, received the mandate to reinvent the museum in an innovative way, both in terms of the architecture of the building, which has become too small, and in terms of the concept of the museum and the experience that the visitors could have by visiting the exhibitions.

The reinvention of the Insectarium is an ambitious and necessary transformation of this small museum. The ambition? To double the surface area of the building and to completely rethink the relation between the visitors, exhibits, artefacts and insects. Before launching the architectural competition, Anne Charpentier took the time necessary to brainstorm: almost two years, four workshops with different techniques (see Fig2), contributions from recognized entomologists and several afternoons drawing up plans and synthesizing the whole process. Using this type of process had two objectives: (1) to encourage the collective reflection to come up with unusual ideas – ideas that would not have emerged by using a “classical” process or approach – and (2) to create a collective to carry out a common project.



Fig. 2. Experiencing new ideation techniques

### Forming a new perception of the museum

The process allowed the visiting experiences to be ideated and developed further, and brought out what was needed in terms of space. As a result, Anne Charpentier had in the end the required material to come up with a preliminary concept for the future museum. In relation to the first sub-questions of our study, how can collaborative processes contribute to a new perception of the organization, it became evident from our interviews that the experiment did change e.g. the way an insectarium is seen or perceived by the employees, helped develop new types of interaction with insects and in the end provided a shared vision of the future museum (see Tab.1).

Table 1. How experimenting with collaborative processes contributes to a new perception of the museum

Theme	Quotes from interviewees
<i>Rethinking what a museum is</i>	We had this atypical idea for a museum to co-create and to have people that could help us tear down the walls of the museum, figuratively speaking (Head of the Montréal Insectarium)
<i>Reinventing the experience with insects</i>	I have a greater perspective of entomology which includes museology, ideas of space, of being open, of seeing others doing things, of being active, everything that leads the public to be attracted, to interact, the different makeup of visitors, the way we could reach them according to their personality (Head of the Entomological Collections and Research at the Montreal Insectarium)
<i>Shaping a shared vision of the future museum</i>	It allowed me to discover new people I did not know exist such as David Rothenberg who makes music jamming with birds sounds, who collects insect sounds and creates from there. I also discover Festival, a festival that no longer exists but that was organized in London (Head of the Insectarium)
	I realised how the insectarium can become a platform so that the potential of the insect world can radiate more and become more important (External designer involved in the process)
	We have a vision that is clear, common, precise, written and shared (Museologist at Montréal Space for Life)
	I noticed that if there had been no collective co-creative work done, we would have had various divergent opinions put forth to the architects (Head of the Insectarium)

### Changing the way the museum works

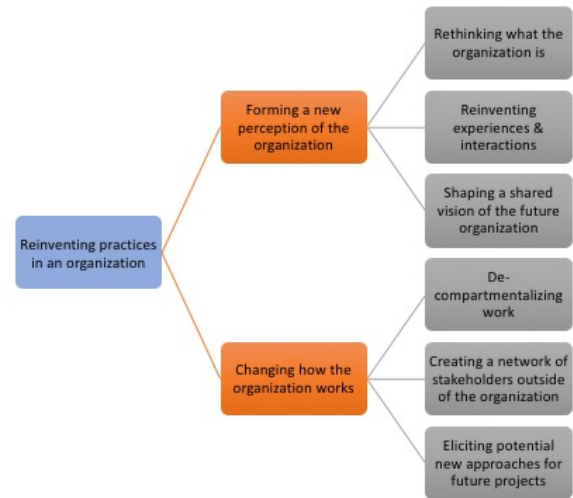
If the Head of the Insectarium had carried out the project just by herself, her teams would for sure have been confident and followed her, but the risk of becoming frustrated and disengaged would have been great, especially due to the potential impact of a complete reformation of daily practices within the organization. In terms of creative climate, a greater feeling of openness was created between the working teams. This allowed the employees to get more involved in the technical aspects of the museum and the breeding of the insects, but also to open themselves up and to learn how to put themselves in the shoes of the visitors. In addition to this, many members of the organization began to see their work differently, richer and more varied than they had seen it before. As a response to our second research question, how can collaborative processes contribute to change the way the museum works, we find that experimenting with collaborative innovation did change the way the museum works e.g. by de-compartmentalizing work, by creating a collective of stakeholders and by demonstrating new ways of working for future projects (see Tab 2).

**Table 2.** How experimenting with collaborative processes contributes to change the way the museum works

Theme	Quotes from interviewees
<i>De-compartmentalizing</i>	<p>The Metamorphosis process helped the ability to work together in the museum: as I could not get everyone involved in the creativity sessions, I involved representatives from all sectors, and they had the mandate to discuss it with their colleagues and from time to time brainstorming was done with everyone. This has helped a lot in changing the way we now work together (Head of the Insectarium)</p> <p>The insectarium today is a solid team with no turnover at all and you feel it in the mood. After this process, people were singing at work truly. As if they had let things loose in themselves, as if you could be a human being on top of being a professional (External consultant who acted as a facilitator during the workshops).</p>
<i>Creating a network of stakeholders outside of the museum</i>	<p>During the public workshops at the end of the process, there were people who came back, for a second and third time there were really people who liked to participate in these meetings. I am certain that I will find the same participants when we are going to make a similar participatory workshop next autumn. (Head of the Insectarium)</p> <p>It is easier to call on our colleagues: I used to contact people from the botanical garden, my former colleagues who do the same work as me, but now I do the same thing with the biodome, with the planetarium, which I did not do at the beginning. I feel more like I am part of the Space for Life. (Head of Education at the Montréal Insectarium)</p>
<i>Eliciting potential new approaches for future projects</i>	<p>Before the Living Lab, we would have used a classical way of finding things, but with the Living Lab, we learned at the same time a way of opening doors in order to find new ideas - to go outside our comfort zone, to be able to inspire ourselves and give ourselves the means to come up with good ideas (Entomological technician at the Montréal Insectarium)</p>

**Summary**

Our overall research question related to how experimenting with collaborative innovation stimulate the reinvention of practices in an organization. To summarize the experiences from the collaborative process undertaken by the museum and based on our thematic analysis, an illustration (see Fig 3) is presented relating what can be described as key steps to achieve a reinvention of practices through experimenting with collaborative innovation.



**Fig. 3.** Key steps to reinvent practices in an organization

**DISCUSSION AND CONCLUSIONS**

The experimentation with a collaborative innovation process in the case of reinventing the Insectarium opens up for a more profound understanding of the role of experiments in the renewal and change of organizations. Our paper contributes to research on organizational experiments as it enriches previous knowledge of experimentation in innovation studies (e.g. Mäkinen et al., 2015) as we show that it not only appears to be a useful process to reinvent a specific object (in our case, the visiting experience of a museum), but the experiment can also become a vehicle to reinvent the organization itself, in particular its purpose and its practices, which brings about organizational implications beyond the specific experiment.

**Forming a new perception of the museum**

Forming a new perception of the museum was according to our findings at the very core of innovating the museum experience, and the work of forming this new perception seemed to be a crucial step in the collaborative process to bring the project participants together. Our findings thus complement previous research as we not only describe the need and value of innovating museum interaction and experiences (e.g. Pullman and Gross, 2004, Bate and Robert, 2007, Ellis and Rossman, 2008, Peacock, 2008, Moore 1999, Hein, 2014), but show how a collaborative process can be used to do this in an experimental way.

**Changing the way the museum works**

As a parallel process to forming a new perception of the museum, it became important to also reconsider the way the museum worked, as it can be argued that these

two aspects need to be closely interrelated for the organization to function at its best. As our findings indicate, the museum's efforts to work in a more collaborative way is in line with current research on the value and need of collaboration and co-creation to achieve innovation (e.g. Keys and Malnight, 2012, Schroll and Mild, 2011, Baldwin and von Hippel, 2011, Aranboldi and Spiller, 2011, Fayard and Metiu, 2014, Fischer, 1999). Still, this is something which requires continuous practice for an organization and its employees to develop their collaborative capabilities and internalize new practices, suggesting that this kind of experimental process can be a good starting point but is by no means the final station.

### Organizational and managerial implications

We can identify two types of unexpected spill-over effects from experimenting with collaborative processes which has implications for how to view the organizational impact of the experiment.

First, experimenting with collaborative processes is a means for all the participants to discover new ways of interacting as well as new ways of reasoning together. Such awareness becomes a key learning that would influence other on-going and future activities, providing a strong bond based on a common understanding and a shared experience of different behaviours that are beneficial to innovation.

Second, such approach supports the development of a leadership style engaged in continuous sense-making and translating the key learnings for all the stakeholders to recognize as the process emerges, as we can see is valuable from Anne Charpentier's and her collaborators' experience. The leadership and managerial skills that are formed as a result of engaging in experimentation may also benefit the organization at large and ultimately change e.g. management training.

### Further studies

Our study opens up new avenues for experimenting with collaborative innovation. Future research may build on the 4 steps protocol elaborated by the head of the museum (see fig 1) to experiment with collaboration and innovation within an organization, and thus impact daily practices, ranging from how teams work together to sharing a common vision of the future evolution of the organization. This process could be experimented for example with dedicated scientists/engineers from various organizations mixed with student teams as part of Challenge Based Innovation Program at IdeaSquare@CERN, (<http://ideasquare.web.cern.ch/>) or similar programs.

To further the results from this study, we would propose a longitudinal study in various organizations that offers the possibility of determining both short-term and long-term organizational effects of engaging in this kind of organizational experiments. We find it particularly

relevant to better understand how long an organizational experiment can continue to influence the organization or if continuous experimentation is needed to keep the innovation spirit alive.

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**APPENDIX A**  
**Key themes and questions in the interviews**

<p>Intention to participate in the process</p> <ul style="list-style-type: none"> <li>- What is your occupation and your background?</li> <li>- What do insectariums represent for you?</li> <li>- How do you perceive the Montreal Insectarium?</li> <li>- Why do you think you have been approached to participate in the Living Lab?</li> <li>- What were your motivations to participate?</li> </ul>
<p>Participation in the process</p> <ul style="list-style-type: none"> <li>- What was your initial understanding and knowledge of the Insectarium project?</li> <li>- How was your integration within the group?</li> <li>- Where did your ideas come from? (professional knowledge, experiences, etc.)</li> <li>- How do you think you have helped in the evolution of the project?</li> <li>- What elements of co-creation process have you noticed the most?</li> <li>- What improvements would you make?</li> </ul>