

Social Innovation Labs: Generation and Implementation of Innovations

Prociris consulting GmbH
Ettlingen/Baden

Keywords

Innovation management, Innovation models, Generative innovators, Service-, process-, product innovations, Social Innovation Labs, Living Innovation Labs, FZI House of Living Labs, Oracle Innovation management solution

Abstract

This paper presents a generative innovation model approach. The basic idea is to take as much relevant knowledge, experience, creativity and inspiration as possible from the environment to generate and subsequently implement innovation.

Following an introduction to various innovation models, the solution approach is presented in which domain experts, technical experts from different disciplines, ideally potential customers and external partners in the value chain as well as opinion leaders and providers of ideas are joined in a social network: the innovation community. The community is provided with a web-based collaboration platform that offers intuitive software tools to model processes and services by means of graphical representations in addition to popular social media.

With Living Innovation Labs we will outline an effective enhancement to sole Internet-based collaboration. Practical experience shows that such kind of presence events proves valuable especially in regard to product innovations. The paper closes with a summary.

1 Introduction

Today, integrated solutions for Enterprise Product Lifecycle Management (Enterprise PLM) come along with integrated components to manage innovation and customer needs. Oracle also has a technologically advanced product in its portfolio. These solutions are based on innovation models that understand innovation as part of a process that can be controlled and automated based on predetermined rules. In this paper an approach is described that is built on a generative innovation model. The focus lies on the question of how we can access as much knowledge, experience, creativity and inspiration from the environment relevant to the innovation for the generation and subsequent implementation of the innovation.

Social Innovation Labs will be presented, which are a solution concept in which domain experts, technical experts from different disciplines, ideally potential customers and external partners from the value chain as well as opinion leaders and creative minds come together in a social network - the innovation community. A Web-based collaboration platform is made available to the community, where, next to popular social media, also intuitive software tools for graphical modeling of processes and services are made available.

Thus, in Social Innovation Labs process and service innovations are emphasized. In this paper, however, further solutions by means of Living Innovation Labs will be described. Internet collaboration is added with unique presence collaboration experiences, which not only increases the effectiveness of Social Innovation Labs, but also expands the application field to any type of product innovation.

The paper is structured as follows: First, several popular models of innovation in practice will be introduced briefly and distinguished from one another. Based on this, the characteristics of generative innovation models will be pointed out and the challenges that a generative innovator has to face will be described. One of those models is the basis of Social Innovation Labs, which this paper focuses on. The Living Innovation Lab is an ideal supplement to the Social Innovation Lab. The paper concludes with a summary.

2 Models for Innovation

Before we get to know different innovation models it is important to understand how we will use the term "innovation" in this paper. In marketing, innovations have been summoned almost inflationary in the last decades. Given the alleged necessity to dramatize even minor product improvements in their importance for users, the term has been watered down. In our discussion, we will follow the definitions by Denning and Dunham [2]:

- “Innovation is the adoption of new practice in a community.“
- “Innovation is the art of getting people to adopt change.“

2.1 The Nature of Innovation and Invention

In Fig. 1, also taken from [2], it first becomes clear, that a real innovation always bases on an invention. With that, innovations and inventions are inseparably connected. But while the invention ends with its presentation, the innovation goes much further. It offers the invention actively to the market and undertakes targeted measures to penetrate the relevant target community. Keeping that in mind, we can say that an innovation has been successful, only when the invention has sustainably penetrated the community.

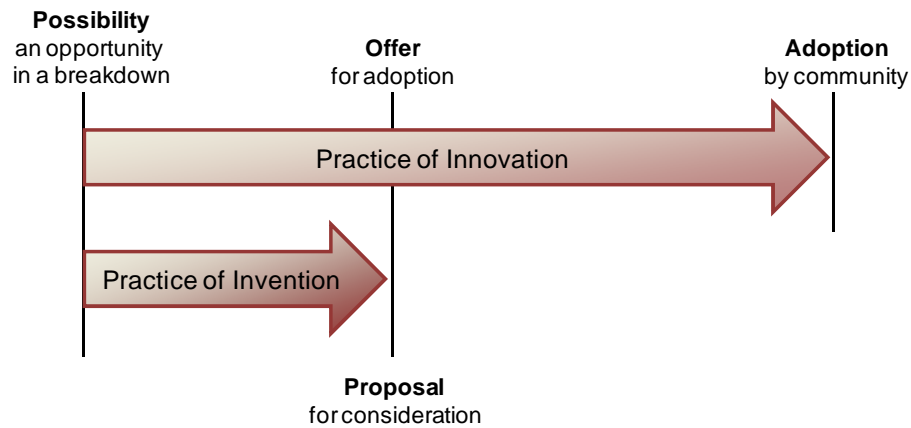


Figure 1: The Nature of Innovation and Invention

2.2 Pipeline Models

The pipeline model is a typical process-oriented innovation model. In pipeline models (for a detailed description see [2]), the focus of analysis is on the invention, inspiration, the generation of ideas and solution proposals by inventors and researchers. Through a sequence of process steps in research and development, production, marketing and sales, and customer service, the product finds its way into the market. A distinction is made whether the market moves the product into the market (pull) or if actors along the process chain actively promote (push) the flow through the pipeline to promote their interests. Particularly striking: sometimes we speak of "funnel models" to make clear that for a result in one process step in each case many entries are needed. As a consequence, only a few inventions and ideas really find their way into the market.

2.3 Diffusion Models

In contrast to the pipeline model, diffusion models focus on the usually very slow running social process of distribution and sustainable penetration of an invention in the target community. The focus is on questions about the dynamics of communication, persuasion and consent in a social system. And it is clear that the duration of the implementation of an innovation in the community plays a mission-critical role. Figure 2 shows the diagram of a generic diffusion model based on a figure from [2]. There you can also find more details on diffusion models.

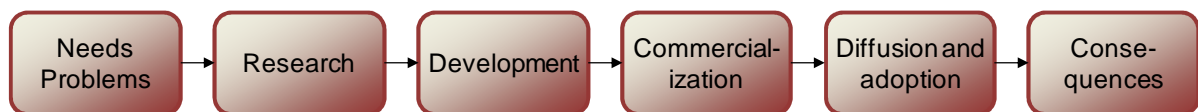


Figure 2: Generic Diffusion Model

2.4 Generative Innovation Models

As a result of a study of innovations in economic, social and political fields, Spinoza et al. have identified a common success pattern. Successful innovations were characterized by the fact that the innovators - entrepreneurs, social activists, smart people - took an active part in the conduct and practices of the community and thus significantly affected the further course of the history of the community. The first generative model of innovation was defined in [8], based on this "history making pattern".

[2] summarizes this pattern under the name "Prime innovation pattern" as follows:

INVENTION

- Innovators find in their lives and work something disharmonious that common sense overlooks or denies.
- They hold on the disharmony, allowing it to bother them; they engage with it as a puzzle.

ADOPTION

- Eventually they discover how the common-sense way of acting leads to the disharmonious conflict or failure.
- They design or discover a new practice to resolve the disharmony.
- They make a deep commitment to getting the new practice adopted in their community.

Figure 3 shows the basic principle of a generative innovation model. The core is the innovation community, which should be the aim of the innovation. The generative innovator takes on the role of an observer to detect disharmonies in the private or professional environment of the innovation community. Such disharmonies are the source of innovation in the community. Undoubtedly, the effectiveness of observation is a very significant factor of success in generative innovation models. The models, however, go much further and also include the role of the innovator as an actor in the introduction and implementation of innovation in the community. Both in the observation and in the active influence of the community, a good social connection of the community that encourages communication and collaboration has proven to be valuable in practice. But the key success factor is the mastery of basic practices conducted by the innovator. A separate section later in the paper is dedicated to this matter.

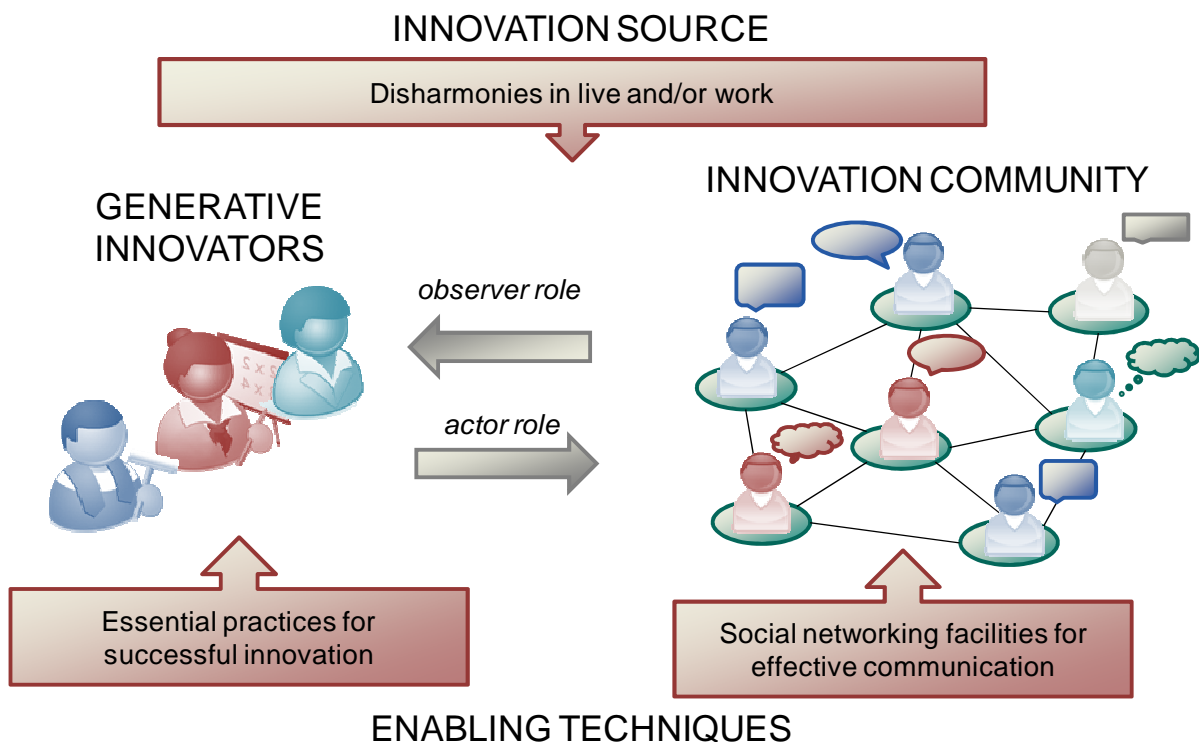


Figure 3: Generative Innovators in Action

2.5 Innovation Success Factors

In [2], this question is answered: When are innovators successful? Experience shows that the success probability is high when the person that acts as innovator is characterized by three important qualities, as illustrated in Figure 4: in-depth knowledge and experience in the innovation community, strong social interaction skills with the aim to convince others, and the strength to recognize innovation opportunities and pursue them actively. In [8] a rule is established based on known examples, stating that success is achieved when at least 10,000 hours of practice experience have been gathered. On the other hand, it shows that a lack of social skills decreases success highly.

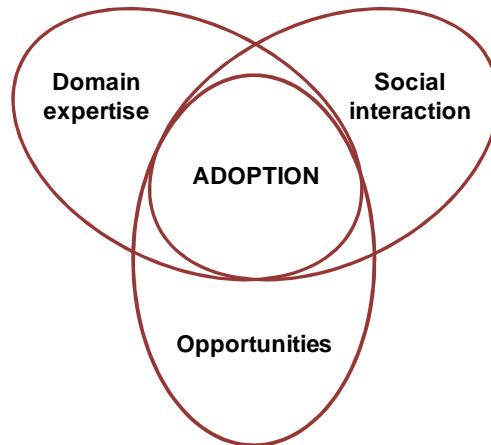


Figure 4: Innovation Success Factors

2.6 Essential Practices for Successful Innovation

Especially in generative innovation models, it is required that the innovator masters specific practices, which are listed below with reference to [2]. They refer to the process of inventing itself or to the implementation of the invention in the innovation community. In addition, practices are dealt with that create the conditions for the application of the other practices.

Main work of INVENTION

- **Sensing:**
Bringing forth the new possibility that would bring value to the community.
- **Envisioning:**
Building a compelling story of how the world would be better if the possibility were made real.

Main work of ADOPTION

- **Offering:**
Presenting a proposed practice to the (leaders of the) community, who commit to considering it.
- **Adopting:**
Community members commit to trying out the new practice for the first time.
- **Sustaining:**
Community members commit to staying with the practice for its useful life.

Building the Environment for the Other Practices

- **Executing:**
Carrying out action plans that produce and sustain adoption.
- **Leading:**
Proactively working to produce the outcomes of the previous six practices, and overcoming the struggles encountered along the way.
- **Embodying:**
Achieving a level of skill at each practice that makes it automatic, habitual, and effective even in chaotic situations.

2.7 Building a Generative Innovation Environment

Figure 5 shows how these basic practices interact in a generative innovation environment. The practices that relate directly to inventing and enforcing the innovations are mostly applied in practice in successive steps. For an innovation-oriented work environment, however, the "enabling practices" are just as indispensable.

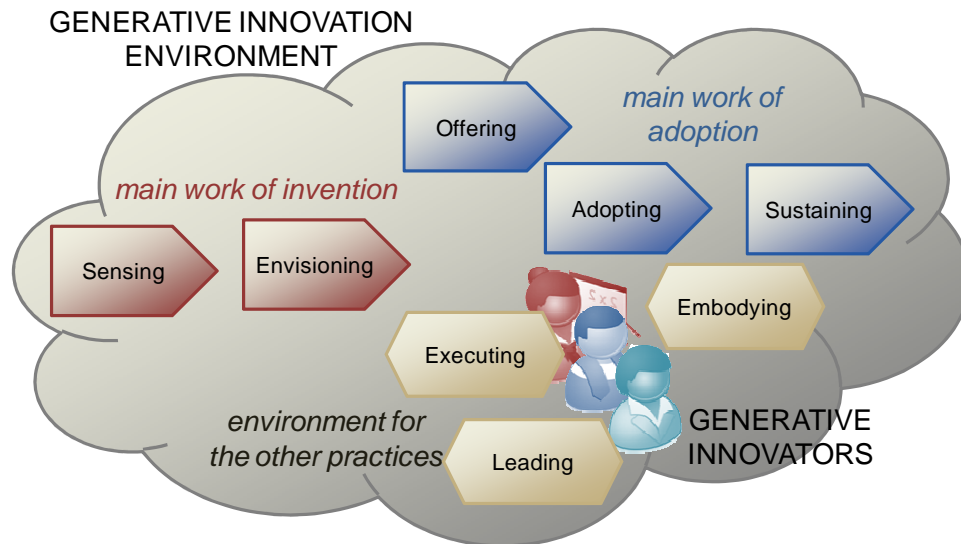


Figure 5: Generative Innovation Environment

3 The Innovator’s Observation Challenge

The discussion above has made clear that the observation of the behaviors and processes in the innovation community is a complex task. Ideally, the innovator has all the knowledge that is available to the community in terms of innovation and relevance. And he should be aware of all factors that drive innovation in the community. This applies equally to private as well as business environments. A complete and objective picture of the innovation community is an essential prerequisite for being able to identify new value added to the community. However, we are deeply influenced by the thoughts of Nassim N. Taleb (cf. [9]) who recommends to do a lot of trial-and-error experimenting to detect many of these opportunities that might create black swans.

3.1 Innovation Drivers along the Value Chain

Figure 6 shows the main drivers of innovation, which affect the operational value chain. What is interesting is not only the (incomplete) set of these drivers, but also the width of the spectrum, which ranges from customer needs to societal changes. Especially for users of powerful Product Value Chain Solutions, as offered by the major manufacturers, of course, begs the question, what these solutions actually contribute in the context of the observations made by the innovator and what their influence is on the economic efficiency of innovation management.

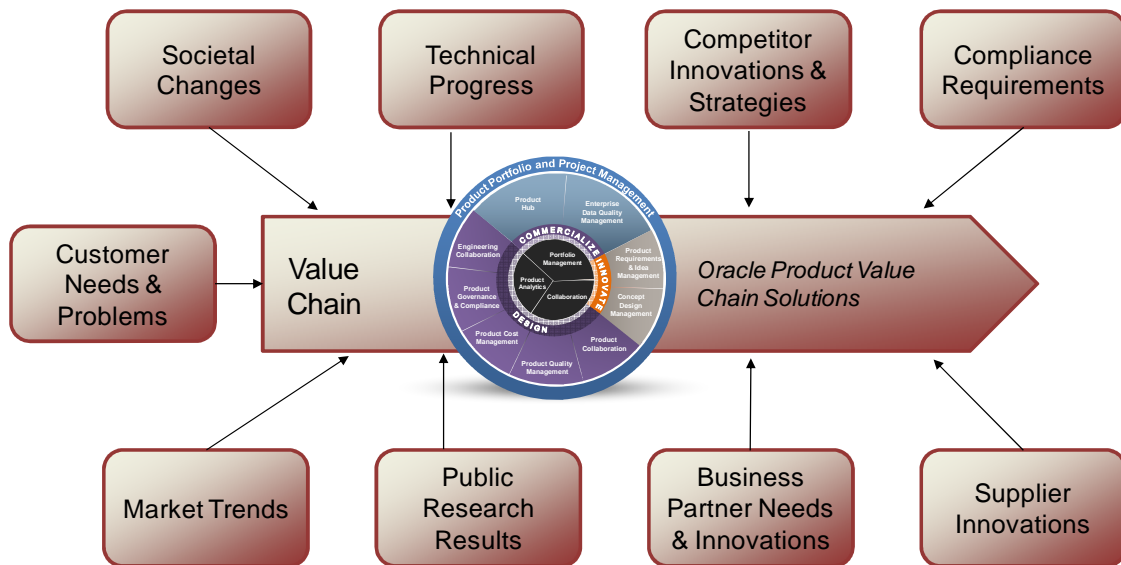


Figure 6: Innovation Drivers along the Value Chain

3.2 Oracle’s Innovation Management Solution

Oracle - as a leader in Product Value Chain Solutions - offers a wide range of products, which are used in the implementation of the various innovation models presented in this paper. They define a knowledge management solution that supports the innovator in his monitoring and implementation activities. In Figure 7, the most important product groups are presented in an overview. These are, in addition to the dedicated Fusion Innovation Management applications that have a primary focus on the management of customer requirements, applications in the areas of service and support as well as customer loyalty and marketing management. Of great interest are applications for Social Relationship Management, which provide a very good insight into the behavior, preferences and needs of the customers not only in business, but also in the consumer area.

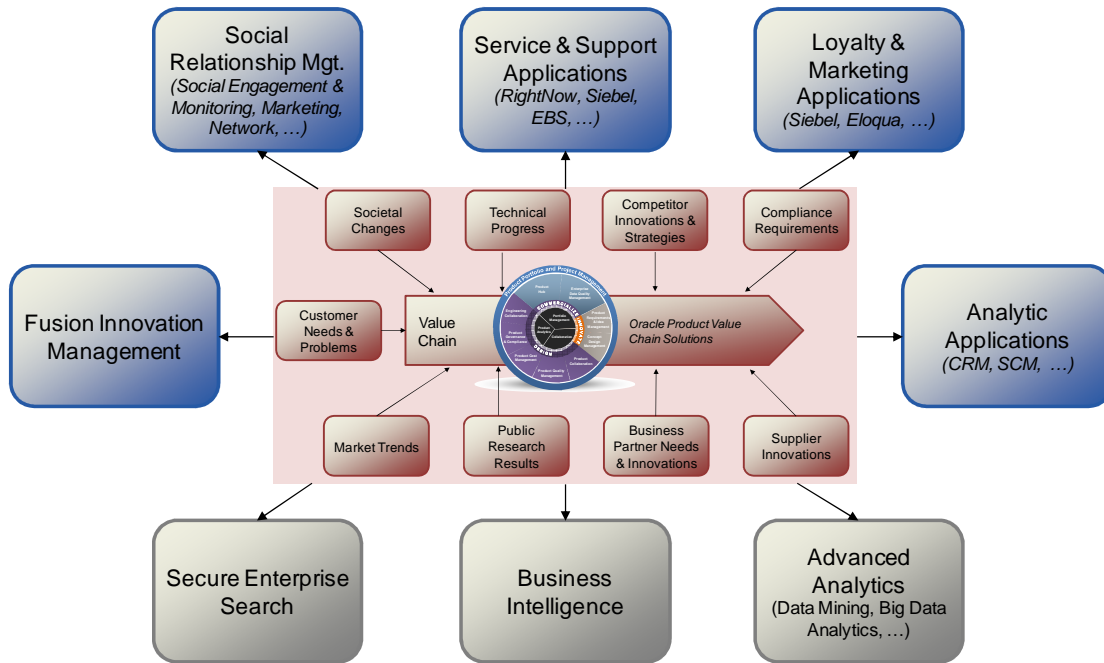


Figure 7: Oracle's – sometimes hidden - Innovation Management Solution

Essential components of any Oracle innovation management solution are the applications and technologies in the field of Business Analytics. They provide meaningful knowledge in regard to customers, suppliers and business partners. In addition to backward-looking analysis, they offer support with functionalities for trend analysis and forecasting, and help with data mining to discover previously unknown relationships between existing data. More and more, Advanced Analytics are used for the analysis of big data sources.

3.3 Where Traditional Knowledge Management Fails

Undoubtedly, the variety of enterprise applications, search and analysis technologies that are in use in businesses today, are a valuable contribution to the innovator's knowledge management activities, both in his role as an observer and in the implementation of innovations. This applies in particular when the tools are able to associate company data to external data from the Web.

However, the time and effort of this knowledge management should not be underestimated. And it always raises the question of what contribution a more past-oriented knowledge management has to offer in the context of innovation management and to what extent the expense is justified. In any case, it should not be expected that the processes addressed will reveal the real "innovation secrets" that arise from human creativity, the imagination, as well as communication and collaboration processes. At this point, the Social Innovation Labs, which are presented below come into play.

4 Social Innovation Labs

The basic idea of Social Innovation Labs is that the members of an innovation community collaborate in a Web 2.0-based social network, to exchange ideas about how to overcome identified disharmonies, to define objectives, strategies, product structures, and requirements, to prepare models of business processes and services or even "just" to find a common understanding of a disharmony and solution requirements. This is often difficult in practice, which is why we have shifted the collaboration into a Web 2.0-based lab environment.

Participants perceive the Lab as a unique experience in which they accomplish tasks together as a team, take on responsibility and contribute new ideas. Group dynamic processes empirically provide for quite some surprising results that will help overcome barriers, finding compromises and strengthen the sense of community. The Lab acts as a catalyst for creativity and willingness to compromise and helps to form a common understanding of disharmonies, products, processes, and services. Finally Lab collaboration sometimes leads to exceptional situations in which the participants have to deal with uncommon or incorrect behavior of collaboration partners, with poor quality of results, with misleading instructions etc. And with respect to the Black swan theory (cf. [9]) this might perhaps be the best innovation climate ever.

4.1 Participants in the Social Innovation Lab

In Social Innovation Lab, the entire innovation community should be represented, so ideally, employees across all relevant organizational units of all hierarchical levels, customers across all target market segments, strategic business partners incl. suppliers, and external advisors (consultants, spin doctors, researchers). This does not necessarily mean that there has to be one member from every community group involved - often it is sufficient if a community member represents the interests of an entire group. It is necessary, however, that the representative provides a distinct understanding of the needs, feelings, goals of the group she or he represents.

4.2 Roles in the Social BPM Lab

The *Moderator* indicates an initial structure of the innovation sphere, in which he forms groups (teams) of innovation community members. An essential task is to guide community members through the Lab. The *Lab participants* are allocated to the teams according to their competence and their expertise, developing multi-site innovation teams. In each team a *Leader* will be determined who will take over integrative tasks and the responsibility for the team results. Depending on the size of the Lab and the knowledge of the participants, *Quality managers* are appointed for technical and substantive review of the resulting models. *Experts On Demand* are available as a point of contact for questions on methodology, modeling and tool use.

4.3 Phases of a Social Innovation Lab

A Social Innovation Lab develops in different phases, which last differently, according to the planned overall time span:

- *Preparation of the Lab*
Creation of a business case that forms the starting point respectively the framework for the work in the Lab.
Time: 1 to 4 days, depending on scope and intricacy
- *Methods and tool training*
Participants will be trained according to their knowledge in the form of webinars in the application of the modeling method and the tools.
Time: 30 minutes to 2 hours, depending on previous knowledge

- *Introducing participants*
During a web conference, the moderator explains the framework and the implementation of the experiment.
Time: 10 to 20 minutes
- *Collaborative working in the Lab*
The Lab participants act according to their roles and desired outcomes.
Time: 4 hours to several days, depending on the task
- *Finishing line*
The moderator summarizes the progress of the experiment and gives a first overview of the results generated.
- *Lab follow-up*
Merging and documenting the results if not already done in the Lab. Analysis of results and follow-up activities.
Time: 0.5 to 4 days, depending on scope and intricacy

4.4 Social Innovation Lab Infrastructure

The Social Innovation Lab requires a technical infrastructure where both the modeling tools as well as a Web 2.0 social networking (collaboration) platform are available for all lab participants. Of particular importance is a central repository in which the participants can file their results and where then also consolidation and quality assurance of the results take place. In practice, it has proven useful to provide the Lab infrastructure as a cloud service to the participants. This has the advantage that a homogeneous and consistent infrastructure is available to internal and external participants directly through their web browser, which also requires no significant installation effort. Moreover, also mobile users with their portables, tablets and smartphones can be integrated. An exemplary infrastructure is shown in Fig. 8.

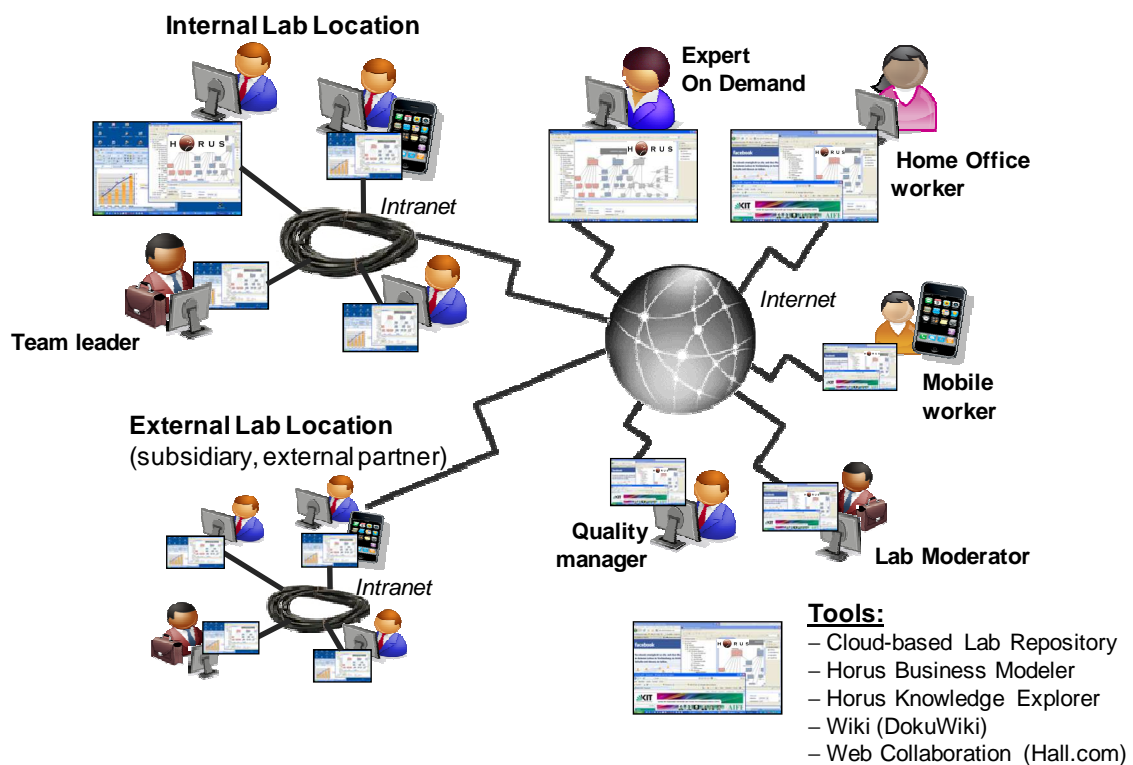


Figure 8: Social Innovation Lab Infrastructure

4.5 How to Support Invention- and Adoption Processes

Social Innovation Labs support particularly the innovator's skills for social interaction. And these skills are of paramount importance especially in generative innovation environments. Therefore, there are interesting applications for Social Innovation Labs (also see Figure 9) during all stages of innovation. They range from supporting brainstorming activities to the concrete experience of disharmony through to modeling products, services and processes. By using the Horus tools in the context of the Labs, extensive analyses and simulations are possible with reasonable effort. For service and process innovations, Horus also supports the construction of prototypes and piloting of innovation. Of course, Social Innovation Labs also contribute in training members of the innovation community.

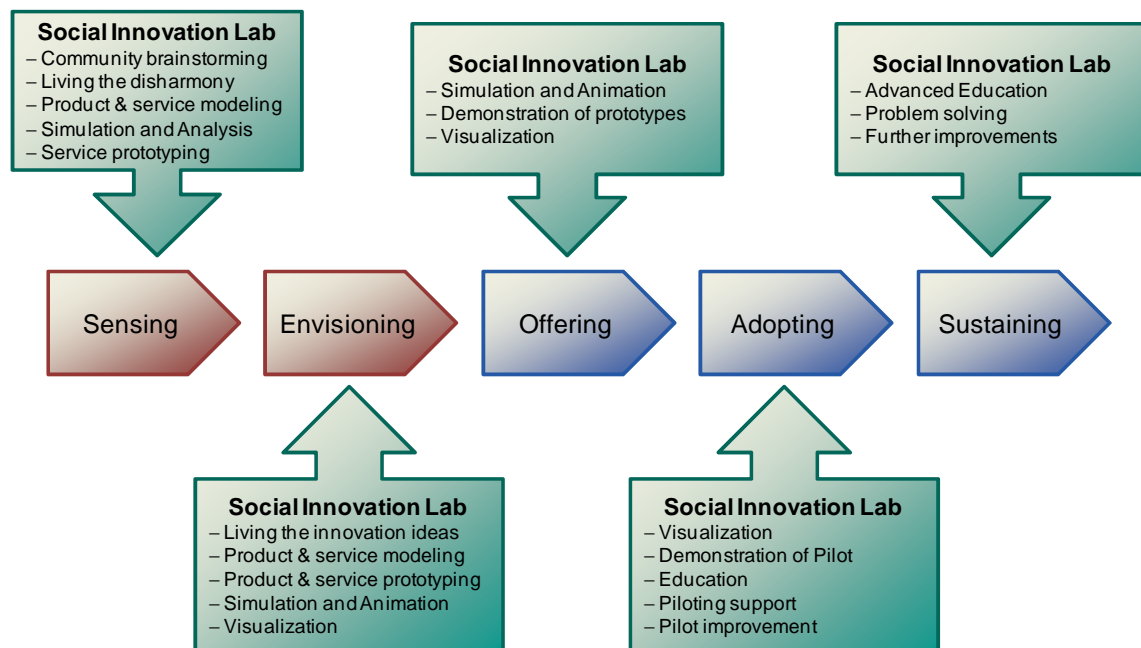


Figure 9: How to Support Invention- and Adoption Processes

4.6 Practical Experience

Social Innovation Labs are a new solution approach, that were derived from Social BPM Labs, which are part of the Horus Method described in [6, 7]. Different application scenarios for Social BPM Labs in Oracle environments are described in [4, 5].

- Horus Endeavor** (<http://www.horus.biz/en/horus-iinsidei/partner-for-innovation.html>)
 Horus Endeavor describes a group of innovation partners dealing with the Horus Business Process Engineering Method and Tools (see [6, 7]). Besides industrial partners, they also include the Institute AIFB at the Karlsruhe Institute of Technology (KIT), Business Process Engineering Group of the FZI Research Center for Information Technology at the KIT, Database Group of the Westphalia Wilhelms University of Muenster (WWU), University of Applied Sciences Konstanz (HTWG). A key tool of innovation management are Horus Social Innovation Labs, where the staff of involved Endeavor partners research on innovative solutions for Horus together with employees of cooperating research and training institutes. The result is a sustainable flow of product and service innovations in the context of Horus.

- ***PROMATIS Enterprise Cloud Services***
An innovation community with members of PROMATIS, Institute AIFB at the KIT, and FZI Karlsruhe created a family of Cloud services supported by dedicated on-demand business services. Most of these Cloud services are based on Oracle Fusion Applications Cloud Services. The Labs proved their worth in the collaboration of distributed innovation communities. Moreover they acted as a kind of catalyst to improve the quality of interdisciplinary work.

In practical use, the Social Innovation Labs have shown that they are a very efficient means to promote social interaction and also the creativity of innovators. In the extension of the circle of participants to representatives of the entire innovation community, additional application possibilities are created - especially in the observation of behavior and practices within the community.

It has been shown that Web-based communication and work with abstract models in terms of process and service innovations promise very good results. In the context of product innovations, however, often practical methods for concrete testing of solution ideas are required (see also [1]). From this experience, we offer the extension of Social Innovation Lab to Living Innovation Labs, which are described briefly below.

5 Living Innovation Labs

We understand Living Innovation Labs as a presence event, in which participants try out innovative ideas in practice. At the location chosen for the lab, participants should have quick and easy access to all relevant technologies in the field of innovation. Also important are an innovation-friendly environment and good working comfort. The environment should consciously promote collaboration, creativity and innovation.

The Living Lab will be part of a Social Innovation Labs instead of or in the wake of this. For practical considerations, often only one or more selected teams of social innovation labs have the opportunity to work directly in the living lab and do research.

5.1 FZI House of Living Labs – Living and Working Environment of the 21st Century

We implement the Living Innovation Labs in cooperation with the FZI Research Center for Information Technology at the Karlsruhe Institute of Technology (KIT). The FZI has built the House of Living Labs (HoLL; <http://www.fzi.de/en/fzi-house-of-living-labs/>), providing 2.000 square meters of research environment, which is especially suitable for interdisciplinary research and development activities.

HoLL features highly modern technical equipment, mobile and stationary information and communication technologies and vehicles, various equipment and building technologies. Innovative solutions can be tested in an environment in which they are to be used later. Figure 10 illustrates the research environments available at HoLL.

FZI House of Living Labs (HoLL)

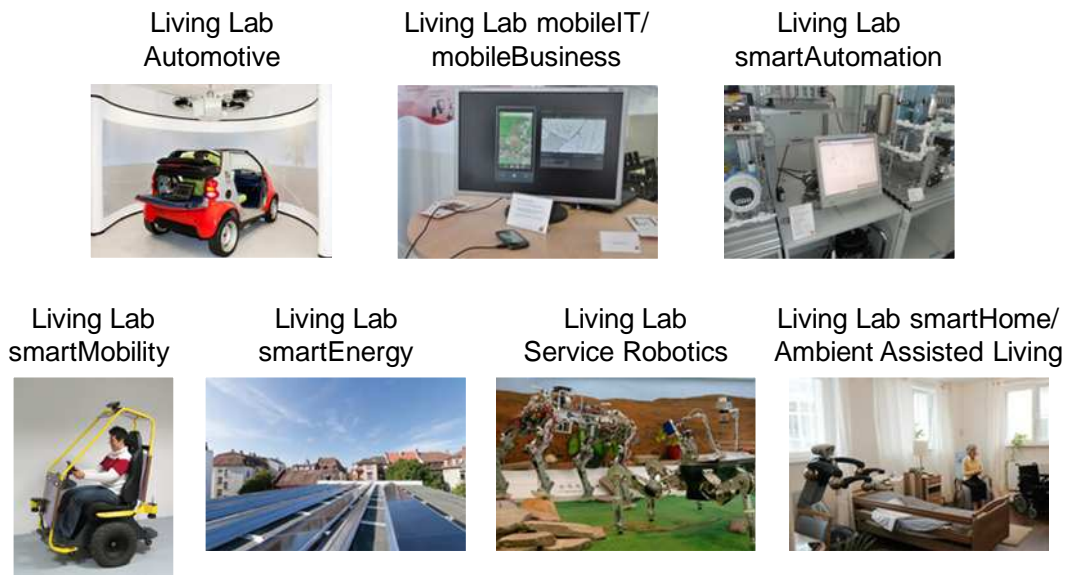


Figure 10: FZI House of Living Labs (HoLL)
 [Source: <http://www.fzi.de/en/fzi-house-of-living-labs/>]

6 Summary

Starting from a clarification of the concept of innovation, different classes of innovation models were presented and distinguished from one another: pipeline, diffusion and generative innovation models. Furthermore, success factors for innovation were identified. Based on this, a generative innovation model has been introduced, which emphasizes the role of the innovator and understands his or her abilities as a key success factor. Key practices that the innovator should be able to master were presented.

In business environments, enterprise applications in conjunction with search and analysis technologies offer a good basis for the innovator’s knowledge management, particularly if the company data is to be linked with external data from the Web. Based on the Oracle solution, the limits of this knowledge management have been shown and with Social Innovation Labs, a comprehensive solution was described that brings creativity, imagination, and human communication and collaboration processes into innovation management.

As a result of initial experiences with Social Innovation Labs, Living Innovation Labs were presented additionally. They make innovative ideas tangible and understandable, and are suited especially for product innovations. For service and process innovations, however, the possibilities of the Social Innovation Labs are sufficient in most cases.

References

- [1] Brown, T.; Katz, B.: Change by Design. How Design Thinking can Transform Organizations and Inspire Innovation. HarperCollins Publishers, New York, NY, 2009.
- [2] Denning, P.J.; Dunham, R.: The Innovator's Way: Essential Practices for Successful Innovation. The MIT Press, Cambridge, MA London, GB, 2010.
- [3] Gladwell, M.: Outliers: The Story of Success. Little, Brown and Company, New York, Boston, London, 2008.
- [4] Schoenthaler, F.: About The Unique Nature of Fusion-Enabled Business Processes. In: Proc. Collaborate 12 Conference, IOUG - OAUG – Quest, Las Vegas, NV, USA, 2012.
- [5] Schoenthaler, F.: Fun and Simple: Better Business Processes with Social BPM Labs. In: Proc. Collaborate 13 Conference, IOUG - OAUG – Quest, Denver, CO, USA, 2013.
- [6] Schönthaler, F.; Vossen, G.; Oberweis, A.; Karle, T.: Geschäftsprozesse für Business Communities: Modellierungssprachen. Methoden, Werkzeuge. Oldenbourg Wissenschaftsverlag, München, 2011. (In German)
- [7] Schoenthaler, F.; Vossen, G.; Oberweis, A.; Karle, T.: Business Processes for Business Communities: Modeling Languages, Methods, Tools. Springer Heidelberg Dordrecht London New York, 2012.
- [8] Spinosa, C.; Flores, F.; Dreyfus, H.: Disclosing New Worlds: Entrepreneurship, Democratic Action, and the Cultivation of Solidarity. The MIT Press, Cambridge, MA London, GB, 1997.
- [9] Taleb, Nassim N.: The Black Swan: The Impact of the Highly Improbable, 2nd Ed.. The Random House Publishing Group, a division of Random House, Inc., New York, 2010.

Contact data

Prociris consulting GmbH
 Pforzheimer Str. 160
 76275 Ettlingen, Germany

Tel.: +49 7243 2179 0
 Fax: +49 7243 2179 99

mailto:info@prociris.biz
 www.prociris.biz

Date of documentation: January 2014