Experiences from setting up an Internet Shopping Collaboratory

Olov FORSGREN, Anders HULTÉN, Mikael LIND,
Nicklas SALOMONSON, Malin SUNDSTRÖM
University College of Borås, School of Business and Informatics, S-501 90 Borås, Sweden
[Olov.Forsgren\Anders.Hulten\Mikael.Lind\Nicklas.Salomonson\Malin.Sundstrom]@hb.se

Abstract: In today's business there is a legible need to find innovative procedures regarding product- or service development where several stakeholders meet in the same arena. An unresolved quest, however, is how such an arena could be set up and which activities to perform. This paper describes experiences from establishing such an arena, called an Internet Shopping Collaboratory (ISC). The ISC assembled researchers, practitioners, consumers, and solution providers in refining ideas to new products aimed to a future e-market. The basic idea has been to apply a co-design approach. The paper outlines why the ISC project did not work and lessons that were learnt. In the paper we make equivalent comparisons from the characteristics of the evolving ISC to the Living Lab concept. A focus on content was found vital for getting the different stakeholders engaged in the collaboratory. The case described uses an ideal scenario technique and applies a co-design approach.

1. Introduction

Today's business is characterized by globalization due to the use of information technology and use of Internet, an increasing role of e-commerce and by that, more power to the consumer. Traditionally, product- and service development has been performed on the basis of satisfying a potential market. However, in today's competitive world, satisfaction is not enough. In order to create higher value [1] consumers want and sometimes need to be more involved in product- and service development. Porter's [2] value chain model that builds on a sequential logic regarding the creation of value is acknowledged as well as the criticism of it from e.g. Norman and Ramirez [3]. They argue that value is created in a simultaneous and co-operative way between different stakeholders. There is thus a need to find new procedures for innovative product- or service development where several different stakeholders meet in the same arena and together give birth to ideas. In such a cooperative spirit, a great challenge is to decide what joint ideas that should be chosen and in turn, be transformed into products or services in a globalized e-market. Today there are many successful examples of innovative businesses that invite their customers as co-producers in order to develop existing products (e.g. the on-line game Counter Strike). Other challenges are how to capture these ideas since there are a lot of stakeholders that could be seen as co-producers managing both collaboration and competition between the stakeholders. In this paper we describe our experiences from trying to develop and set up an "Internet Shopping Collaboratory" (ISC) as a collaborative working environment which involves researchers, practitioners, consumers and solution providers as co-producers in refining ideas to new products aimed to a future e-market.

The idea of an ISC originated from a vision to build a collaborative research laboratory (or collaborative arena) together with researchers, a few established contacts representing the mail-order industry, potential consumers (students) and at least one technical solution

provider. The vision was to establish a physical lab environment to be used for managing the design- and evaluation process of e-oriented innovation. The initial intent for the project was to:

> *Further develop research collaboration between companies and also between organizations and companies that are trying to use IT in sales and service activities with new and innovative ideas.*

A parallel phenomenon to this project is the increasingly popular strive to establish Living Labs. As Eriksson et al [4] mention this concept refers to: "[…] *a R&D methodology where innovations, such as services, products or application enhancements, are created and validated in collaborative multi-contextual empirical real-world environments*". We recognize a lot of similarities between the efforts of setting up an ISC and a Living Lab. Both approaches have researchers, companies and consumers working together in real settings using a methodological structure often supported with a collaborative IT-platform. However, it has been reported a need for methodological approaches when setting up and running a Living Lab.

2. Objectives

This paper describes the experiences derived from setting up a collaborative environment. We also compare the Living Lab concept to the characteristics of the evolving ISC. The objective, based on the experiences from developing and setting up an ISC, is to provide guidelines/procedures for how to set up a collaborative environment with different stakeholders regarding e-shopping. Another objective is to reflect about the difficulties to set up a collaborative environment.

3. Methodology – co-design approach using scenarios

The methodology used is a co-design approach in which an ideal scenario technique has been a tool of great significance. The technique contributes to facilitating innovative product/service development and knowledge creation involving several stakeholders [5]. According to efficiency-oriented explanations about the firm [6, 7] business and organizations constantly try to capture knowledge about ideal situations for customers or clients which they match with knowledge about resources they possess or can create [8]. In order to be successful business/organizations continuously need to develop their knowledge about customer ideals and their own matching resources. On the other hand, customers or clients constantly imagine and develop knowledge about their own ideal situations and look for affordable resources which in turn can bring them closer to ideal situations. It has been identified that there is a need to report upon application of methods in settings of innovation involving several stakeholders as a mean for cumulative development of such methods. The dynamic interplay between these different actors and processes constitutes the co-design knowledge creation process. In order to capture and convey such ideal situations we have in this project used scenarios as a communication tool between involved stakeholders. [9]. Scenarios as one contribution in the co-design process forms an important part of the methodology to be used in these kinds of settings.

Scenarios can be described as vivid descriptions of plausible futures [10] and scenario planning as a tool for ordering one's perceptions about alternative future environments in which one's decision might be played out right [11]. The scenarios written serve as inspirations for generating ideas and as filters through which new ideas and projects can be passed [10]. It is especially valuable using scenario planning instead of (or together with) traditional strategic planning approaches in times of paradigmatic or non-linear change, i.e.

when products need to be replaced by new ones or in the face of rule-breaking competition [10]. Lindgren and Bandhold [10] further describe three advantages with scenario planning:

- *Complexity-reducing format*. The complexity in the environment can be reduced to a manageable amount of uncertainty.
- *Communicative format*. Scenarios are easy to communicate and discuss and thus can provide a common language and view of life that simplifies decision making in an organisation.
- *Opening-up of diversity thinking*. People train the capability to think the unthinkable, and thereby the ability to foresee unusual events.

In this paper the scenario method has been used for putting forward possible "situations" for particular personas, i.e. the future e-shopper. Two examples of scenarios used are illustrated in the next section.

4. Case description

The idea of setting up an ISC had its origin in an innovation cluster focusing the mail order industry [12] between the years 2003-2006. It consisted of an interdisciplinary research group of informatics and business administration – joined together with the mail order industry sharing the same interest in IT and business design. The thought of setting up the ISC started in January 2006 and developed during the year. Our basic idea was to build an arena involving researchers, practitioners, solution providers and potential consumers (students). An unique situation was identified where the different stakeholders constituted important parts, and if they were brought together (through the ISC), a win-win situation for all parties involved should appear. The idea was to create a kind of network in a physical lab environment where practitioners contributed with concrete problems which they had difficulties to develop and test on their present customers and test groups. The students (seen as customers of tomorrow) were considered as a group of consumers (early adapters) that easily adapts new technology and is willing to give valuable (and even critical) feedback that could be used to make a great leap forward in the development of new ideas and innovations.

The process started with mapping different external stakeholders that could be interested in participating in the project. They were chosen based on previous interactions with them. In order to present the idea, we chose to construct three consumer scenarios regarding future consumers´ use of Internet as a shopping channel. The scenarios were made through an analysis of an earlier consumer study regarding (1) perceptions and attitudes towards new technology, Internet and digital cameras [13] and (2) perceptions and attitudes towards shopping on-line [14]. The initial goal was to develop scenarios which described the role each stakeholder would have in such arena and we wanted to develop scenarios of the future consumer (year 2010) in order to trigger an interest from potentially participating stakeholders in the mail order industry. The scenarios were generated and inspired by three sources:

- previously performed consumer studies by the researchers involved in this project
- technical trends identified by closely related solution providers (e. g. web 2.0) [15].
- insights from a parallel ongoing research project called e-Me [16, 17, 18] where the potential in using an electronic assistant as a filter and agent in our access to the information galaxy.

Two examples of scenarios used in the discussions with stakeholders were "The flower buyer" and "The furniture buyer" illustrated below. The shops Nation Flowers and Cyber furniture do not exist.

The flower buyer

Flowers are valuable in so many ways for Marie-Louise. She sees it as a reward to her self, as home furnishing, as an appreciation, and as the perfect gift to someone that she loves or like. Nation Flowers is her favourite shop on the Internet because she believes they have realised that customers like herself is buying more than just a product. In different situations the customer demands different things, depending on what, why and from whom she is buying. Nation Flowers has many different affiliates and can offer Marie-Louise other types of products together with flowers, for example jewellery, chocolates, books and compact discs. Marie-Louise has also given Nation Flowers access to her private e-Me account on the Internet which makes it possible for them to automatically check her calendar. In her calendar Marie-Louise has marked the birthdays and other important dates for her nearest and dearest. Nation Flower is aware of these dates and sends her reminders with suggestions of gifts or flowers well in advance for the occasion. In this way she avoids the dilemma of forgetting what she has given, to who and when – Nation Flowers never sends her a suggestion for the same gift for the same person twice. It is also easy to make the payment to Nation Flowers, since BankID is connected to Marie-Louise through her e-Me - just a few quick clicks on the computer keyboard and the order is paid and delivered.

The furniture buyer

To Karin and Per their home is their castle. It is their identity and they put their pride in decorating every single room according to specific concepts and trends. In the virtual store, Cyber Furniture, they not only buy furniture, they buy knowledge, the right trends, timely delivery and ideas. All spaces and measures in their home are known to Cyber Furniture; new trends are distributed instantly on the e-mail or to the cellular phone. When they want to change a room Cyber Furniture delivers the right concept and feeling, from designer furniture, matching textiles, high tech illumination to art and plants. Karin and Per get their main source of inspiration through their social network and the network Compact Living. There they meet other users and their personal networks. They can share ideas and inspiration from pictures, movies and 3-D models that the users upload.

The scenarios were used as a basis for further improvements in the interaction with chosen e-commerce companies (e.g. eBay, RedCats Nordic). Feedback and new innovative ideas came as a result from this interaction. An interesting phenomenon that appeared in the interaction was that most of the practitioners did not find the scenarios challenging enough regarding a futuristic perspective. Instead most of them meant that the scenarios described the present instead of the future of year 2010. This is a possible expression of awareness of the future among the practitioners more than it is a description of the present technique used by the e-commerce companies. Nevertheless the future perspective, in this special scenario-form, made it possible to address and discuss important ideas and values that should control the development of e-driven activities for e-commerce companies. This also resulted in a rejection of our original idea regarding a physical lab environment. However, after discussing alternative ideas, we could sum up a different set of ideas that related to our original idea, but somewhat adjusted. As concluded we had too much focus on structure and too little emphasis on content in the ISC.

We learned that the response for an ISC was low, however, the interest for an ongoing project (e-Me) was huge. The original scenario-idea became influenced by the personalized IT-use (also covered by the e-Me project) [16]. So the content of the ISC as a network with different participators, but with a common ambition to develop new ideas for the e-commerce companies, also made a great leap forward when it became influenced by the personalized IT-use. The personalization that e-Me offered, in combination with the presentation of new techniques used on the Internet that were described in the first versions of the scenarios, made it interesting for all parts to take one step further. Based on that the final nine scenarios were developed.

When we look back on the initial setting with four different stakeholders, and with an idea of trying to use IT in sales and service activities with new and innovative ideas, we can see that we had to much focus on the infrastructure of an ISC as such. It was easy to think that we would have an interesting research project if we made the physical setting ready

and offered the companies a critical group of students that could act as potential consumers. This was not the case. The companies involved seemed to be able to solve their e-development issues with their present solution providers and it was not enough to just receive valuable evaluations and reflections from the students as a test group. Instead of focusing on the perfect settings and infrastructure the project turned towards discussions about scenario content.

The explorative research performed in this project has gone from the idea of setting up a stabile infrastructure as an ISC to a more temporary project oriented ISC. Such development provokes the need for guidelines. In this sense guidelines are seen as instruments to be used for setting up an ICS for a certain purpose.

Our results on this matter are completely similar as found in research about successful community development. Without focusing interesting content most communities fail despite a good supporting structure and techniques [19].

5. Results

The ISC described could be seen as a special case of an innovative collaboratory. In this section, some recommendations for setting up an innovative collaboratory is derived based on the experiences from setting up the ISC. We also examine the Living Lab concept to the characteristics of the evolving ISC.

How to set up an innovative collaboratory: From a stakeholder driven to a vision driven approach
- Researchers should base themselves on *solutions that could work in different contexts*. They should provide general ideas that trigger the thinking among the practitioners to be used in different interactive settings. In this interactive setting the general ideas do however need to be translated, interactively by involved stakeholders, to the actual situation.
- *Avoid constructing future-based-scenarios* and afterwards present them to the stakeholders. The scenarios need to be developed together with the different stakeholders.
- Be aware that *ideas always live their own lives*. It is in the interaction between different stakeholders and researchers that these ideas can flourish and sometimes take a rather surprising turn.
- *Never claim ownership to the original idea*. Instead listen to people, interact and react, which in turns affect the idea. In this way the idea will continually grow and become filled with content. This process can be described as a metamorphosis of the original idea but also for the different stakeholders involved in the project.

These recommendations should be seen as important aspects when performing activities in a collaboratory. In order to give an understanding of the knowledge creation process key activities, stakeholders, basis, and results are depicted in figure 1. As the figure shows it is important to have an initial vision before entering a series of incrementally related activities. There must be content before entering the development-test-evaluation "wheel". This "wheel" is inspired by the PDCA-wheel [20].These activities are jointly performed by (preferably) several of the associated / identified stakeholders. Note however, as in the case reported in this paper, one sometimes need to adopt a certain stakeholder's perspective, rather than in concrete terms having the stakeholder present. As a result from this process there could potentially be evaluated scenarios to be used by different stakeholders for different purposes.
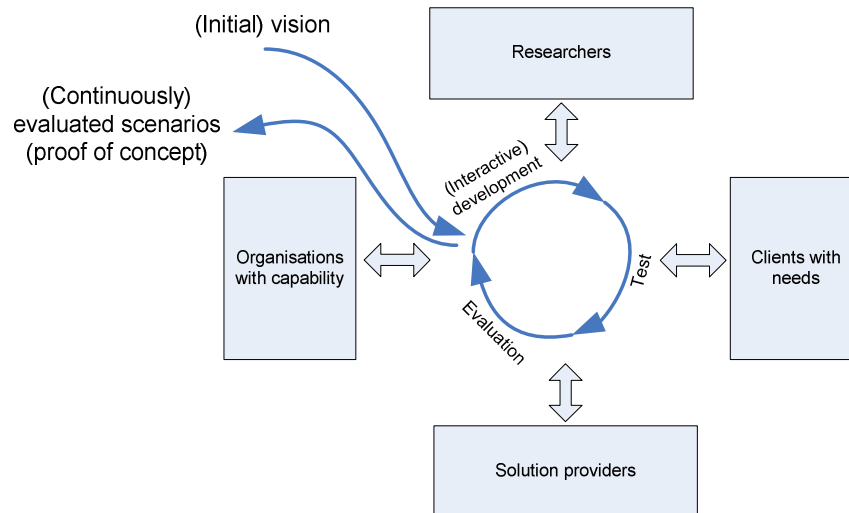
Figure 1: The co-design knowledge creation process constituting an innovative collaboratory

How does the ISC match the concept of Living Labs?

Eriksson et al [4] described the Living Lab concept as a R&D methodology where innovations are created and validated in collaborative multi-contextual empirical real-world environment. According to them [4] the users/consumers/citizens are brought into a system of innovation and thereby leveraging on a larger mass of ideas, knowledge and experiences etc and substantially boosting the innovation capability. The user-centric (or human-centric) approach, instead of the technology-centric, means that it focuses the individuals in their role as citizens, users, consumers, or workers.

Even though the ISC did not reach a prototype stage or an actual physical test lab we still find similarities with the Living Lab concept when it comes to the methodology used in the project. We engaged different stakeholders in a collaborative process to find a new innovative way to test Internet shopping solutions in a real-world setting. As a direct result of the collaborative process we identified that the original idea of an ISC was not appealing enough for the companies involved in the process. They were more caught by the evolving e-Me project. We thus introduced an idea that probably should have been discussed at an earlier stage with the stakeholders. An idea however needs to start somewhere in order to be tested by others and from there be refined or evolve in to something new. Based on previous interactions with companies and consumers and studies about interactions between companies and consumers we also formulated scenarios about future consumer behaviour. The scenarios were then in a collaborative way tested on companies. This can be seen as a user-centric approach and another example of a methodology in the spirit of the Living Lab concept. It can be seen as an initiative to create a co-design process where users (consumers), researchers, solution providers, and companies work together in an active way to create new innovative solutions. Our project did as illustrated not move beyond the idea phase. In order to more fully move towards a sufficient working Living Lab we need, together with other stakeholders, to provide access to state-of-the art technology. That can further stimulate the innovative process. As Eriksson et al [4] recommends it should not only be one kind of technology but instead competing ones delivered through different business models.

6. Business Benefits

In this section we discuss the difficulties of setting up a collaborative environment for innovative product or service development in today's business.

Reflections about the difficulties to set up a collaborative environment

It is not unusual to hear a pronounced request from both industry and academy of deeper integration in each others activities. But as many of us know this it is not an easy task. The exertions often consist of the fact that the stakeholders have different "drivers" or "motivators" for the common work. Even if involved companies declare that they have no outspoken vision of profit in these collaborations, it is in their nature to make profit and compete with other companies. So therefore it is interesting that we found a common driver (the vision of e-Me) that helped us to maintain the interest in this co-design work with the ISC.

In this type of vision-driven project it is at the beginning often challenging to establish and keep some kind of structure around the project-idea. The idea is only something that exists and lives among the participants in the project. There must thus be a balance in the presentation from the initiator (in this project the academy) to entice the interest of profit driven companies. It is difficult to make a presentation that sets the frames in one way and at the same time shows that there are no limits of what this project can contain and develop if we design, work and develop this together. We have found that the scenario technique is a possible way to handle the problem with different intentions that comes with diverse views of different stakeholders.

Even if the first, and from us originally designed scenarios did not entice a great amount of reflections from the receivers (practitioners), there were nothing that prevented us from redesigning and developing the scenarios together with them in the next step. There was no prestige involved in the design-work at this stage. One written or told scenario led to another. At the end of this first step of envisioning an ISC the scenario technique made it possible for all stakeholders to agree upon the common goal for this project. The scenario technique has proven to be an effective tool when it comes to designing and developing an ISC.

7. Conclusions

We have learned that in order to reach a successful outcome of a collaborative environment, one must have a generative idea that is of concern for different stakeholders who want to explore, in this case, new e-commerce opportunities. Such temporary collaborative settings go through different incremental steps of development. This development is characterised by inter-twined steps of development, test and evaluation. In these phases we have found that the development of scenarios gives an important contribution for refining an original idea towards new ideas with the common objective to reach an attractive solution. This process is dependent on the ability to engage and listen to different stakeholders that share a common vision. Another important issue is the open-mindness of participating stakeholders, i.e. their ability to welcome and embrace surprises.

The original idea about an ISC (the case described) was thus in some way rejected and instead substituted by other ideas that better described the current needs for the collaborative stakeholders. Researchers should not provide context dependent solutions; instead rather provide general ideas that trigger the thinking among the practitioners to be used in different interactive settings. Another important experience is the problem with constructing future-based-scenarios and then presenting them to the industry. The scenarios need to be developed, tested and evaluated together with the different stakeholders in order to get their view and knowledge about the phenomenon studied.

Acknowledgements

References

[1] S. Wikström, The Customer as Co-Producer, European Journal of Marketing, Vol. 30, Issue 4, 1996.

[2] M.E. Porter, Competitive Advantage: Creating and Sustaining Superior Performance, The Free Press, New York, 1985.

[3] R. Norman, and R. Ramirez, From Value Chain to Value Constellation: Designing Interactive Strategy, Harvard Business Review, July/August, 1993, pp. 65-77.

[4] M. Eriksson, V.P. Niitamo, and S. Kulkki, State-of-the-art in ulizing Living Labs approach to user centric ICT innovation – a European approach, White paper, 15 December, 2005.

[5] Å. Grönlund, Managing electronic services: A Public Service Perspective London: Springer, 2000.

[6] R.H. Coase, The nature of the firm, Economica, Vol 4, 1937, pp. 386-405.

[7] A. Muller, and L. Valinkangas, Extending the boundary of corporate innovation, Strategy & Leadership, 2002, 30.3, pp 4-9.

[8] G. Goldkuhl, and M. Lind, Developing e-interactions – a framework for business capabilities and exchanges, accepted to the 12th European Conference on Information Systems, June 14-16 2004, Turkku, Finland.

[9] L. Albinsson, Using Cartoons to Engage Stakeholders in Innovation and Design of IT Artefacts. in WONDERGROUND, Design Research Society International Conference 2006. Lisbon, Portugal: CEIADE – Centro Editorial do IADE.

[10] M. Lindgren, and H. Bandhold, Scenario Planning: The Link Between Future and Strategy, Palgrave Macmillan, New York, 2003.

[11] P. Schwartz, The Art of The Long View: Planning for the Future in an Uncertain World, Currence Doubleday, New York, 1991.

[12] A. Edström, M. Lind, and J. Ljungberg, Learning, Innovation and IT-usage – a Research Approach to Regional Development, HICSS'37, IEEE Computer Society, 2004.

[13] M. Sundström, Women and Digital Cameras – A Report on Perceived Obstacles and Opportunities with Digital Photos and Services/products Offered by ExtraFilm, Assignment Report to ExtraFilm AB, Tanumshede, 2006.

[14] M. Sundström, M. Carneskog, and M. Davarinou, A Report on Design of the Virtual Store, Assignment Report to NetOnNet AB, Borås, 2005.

[15] T. O´Reilly, What Is Web 2.0 - Design Patterns and Business Models for the Next Generation of Software, [Online] http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html, 2005.

[16] L Albinsson, O. Forsgren, and M. Lind, e-Me Stories & Scenarios - The Ideal Electronic Galaxy of the Student, University College of Borås, Sweden, 2006.

[17] L. Albinsson, M. Lind, O. Forsgren, and H. Ozan, Turning the Internet Around – e-Me: The Students Ideal e-Service. in *eChallenges 2006*. Barcelona, Spain: IOS Press, 2006.

[18] S. Lindell, M. Lind, and O. Forsgren, Students as e-Citizens – Deriving Future Needs of e-Services for Students. in The International Workshop on E-Services in Public Administration (WESPA2006). Borås, Sweden: University College of Borås, Sweden, 2006.

[19] L. Albinsson, G. Curtin, O. Forsgren, and M. Wall, The community Triangle - Success factors for leading Purposeful communities, submitted to eChallenges e-2007, The Hague, The Netherlands, 2007.

[20] W.E. Deming, Out of the Chrisis. Massachusetts Institute of Technology, Massachusetts, 1996.