

# Enabling co-creation of e-services through virtual worlds

Thomas Kohler<sup>a</sup>,  
Robin Teigland<sup>b</sup>, and  
Elia Giovacchini<sup>b</sup>

<sup>a</sup>Hawaii Pacific University, College of Business Administration,  
tkohler@hpu.edu

<sup>b</sup>Stockholm School of Economics, Department of Marketing and Strategy  
{robin.teigland, elia.giovacchini}@hhs.se

## Abstract

The recent penetration of the Internet has provided a fertile ground for the rapid rise of e-services, and as a result, the e-services market is by its nature global and highly competitive. One of the keys to success is to anticipate and fulfil user needs through the constant development of new offerings. However, innovation is complex and characterized by a high failure rate - especially when customers have a diverse set of needs due to their being spread across the globe. Both theory and practice therefore recommend collaborating with users during the innovation process to overcome this challenge. Of interest is that recent developments within virtual worlds or the immersive Internet offer unprecedented opportunities for firms to tap into the innovative potential of consumers and consumer communities for new service creation. Inspired by these opportunities and drawing upon theories of co-creation, our aim is to shed light on the opportunities and challenges that virtual worlds offer to support co-creation processes for e-services innovation. Using a design research approach, we developed a user-driven service innovation workshop within the virtual world of Second Life. We collaborated with the e-tourism start up called Travel for change, which develops an international web community for volunteer travellers who aim make a positive impact on underprivileged communities around the world. We discuss the setup of the research setting to highlight the opportunities presented by virtual worlds for organizations aiming to develop new services with customers during virtual co-creation workshops.

**Keywords:** co-creation, service innovation, e-services, virtual worlds, new ventures, entrepreneurship

## 1 Introduction

In the last decade, we have witnessed the emergence of services delivered through the Internet (Baida, *et al.*, 2004). This e-services market is by its nature global and rich with competitors requiring companies to be very dynamic and competitive (Menor, *et al.*, 2002). One of the usual means suggested by scholars and practitioners to gain competitiveness is to invest in innovation. However, more than 40% of e-service innovations are not successful (Eklund, 2009). The ineffectiveness of traditional approaches to service innovation has resulted in the integration of users into the innovation process (Alam, 2002; Thomke, 2003). This process of co-creation, has

been greatly facilitated by the rapid evolution of web 2.0 technologies (Sawhney, *et al.*, 2005). As these more traditional Internet technologies offer a limited ability to support user interaction due to restricted sensorial and interaction cues, organizations are beginning to experiment with the 3D Internet and in particular virtual worlds to overcome these limitations. Building on the co-creation paradigm put forward by Prahalad and Ramaswamy (2004), a number of pathfinding companies are integrating users of virtual worlds into interactive new product development processes to tap their customers' innovative potential and knowledge. For instance Alcatel-Lucent, Osram or Coca Cola hosted idea competitions, Steelcase invited furniture designers to co-create, and Aloft tested a virtual hotel (Kohler *et al.*, 2009). This concept of co-creation in virtual worlds - labelled "avatar-based innovation" - has been explored in several cases primarily for tangible goods with little attention paid to services. Thus, with this research we intend to investigate the use of virtual worlds in co-creation for e-services. This leads us to our overarching research question: To what extent can virtual worlds support co-creation processes for e-services? To investigate our exploratory research question, we followed a design science research approach in developing co-creation workshops in the virtual world of Second Life for a small to medium enterprise (SME) active in the e-service industry, specifically "Travel for change". This web-start-up is developing an international web community of volunteer travellers who seek to make a positive impact on underprivileged communities around the world. By building and linking a community of travellers to local communities in need, the web platform is the starting point for a number of ways to take action and address the most pressing problems. In this paper, we present the setup of the workshops within the virtual world of Second Life in order to highlight how virtual co-creation activities can support the service innovation process.

## **2 Background**

### **2.1 E-services: service in the digital era**

E-services is defined as all the services provided through an electronic network (Rust, *et al.*, 2002), most notably the Internet (Boyer, *et al.*, 2002; Reynolds, 2004). The importance of the e-service sector is increasingly evident in general (Riedl, *et al.*, 2009; Santos, 2003) as well as for the tourism sector specifically (Susskind, *et al.*, 2003). The dynamics of the e-services sector is strengthened by the potential rapid development of new e-services, fuelled by the opportunity of constantly improving the service (Oreilly, 2007), as well as by the threat of imitations from new entrants or established competitors (Menor *et al.*, 2002). However, these dynamics imply several challenges for entrepreneurs - requiring them to approach the development of a new e-service with an adequate innovation strategy to be successful.

### **2.2 Co-creating service innovation**

Successful service innovation is based on understanding customer needs and developing services that meet or exceed those needs. As travellers' needs are constantly changing (Stamboulis *et al.*, 2003), also e-tourism services could benefit from involving users in the innovation process, rather than relying on market research to access this information. For instance, Kristensson *et al.* (2004) point out that the involvement of users in the ideation and design phases of service innovation strongly

increases the chances for success since user involvement not only delivers products better tailored to the users' needs but also provides the opportunity to easily access marketing intelligence and to identify emerging trends (Day, 1994), thus improving the company's overall responsiveness (Matthing *et al.*, 2004). Additionally, the ability to receive "transparent feedback" or to constantly monitor in real-time the use of the e-service as well as to conduct a dialogue with the user through web-based functions, e.g., forums, chat, further enables the entrepreneur to tailor the service to the users' needs. Beyond that, users have been identified as the source of innovative solutions in many industries (Herstatt *et al.*, 1992; Urban *et al.*, 1988) in consumer markets (Franke *et al.*, 2003; Lüthje, 2004), and recently in the service industry (Oliveira *et al.*, 2009). A considerable body of literature discusses the involvement of users in the new product development process, but only recently a number of scholars have started to explore the potential for user involvement during service innovation (Alam, 2002; Magnusson *et al.*, 2003). User involvement in the service innovation process has been defined as "processes, deeds where a service provider and interactions collaborates with current (or potential) customers at the program and/or project level of service development to anticipate customers' latent needs and develop new services accordingly" (Matthing *et al.*, 2004).

### **2.3 Achieving co-creation through virtual world technologies**

The process of co-creation has been greatly facilitated by emerging information and communication technologies. While Web 2.0 has received considerable attention as a co-creation platform, virtual worlds could be the next leap in the evolution of co-creation. Virtual worlds are computer-generated physical spaces, represented graphically in three dimensions that can be experienced simultaneously by many users, or so-called avatars. Avatars are the graphic representation of a person's self in a given physical medium that other users can see or interact with within a virtual environment (Steuer, *et al.*, 1995). Due to recent advances in 3D graphics, bandwidth and network connectivity, these worlds are becoming increasingly sophisticated and realistic, enabling organizations and individuals to "step into the Internet" to communicate, collaborate, create, and even organize economic activity. Linking co-creation with the emerging technology of virtual worlds results in avatar-based innovation, which refers to companies' efforts to collaborate with virtual world avatars to generate value through their innovation activities (Kohler *et al.*, 2009). Virtual worlds are seen as an enabling technology for co-creation for two main reasons. The first aspect captures the notion that existing co-creation tools need to capitalize on the advances of ICT. In particular, virtual worlds build on avatar-mediated communication, which differs from traditional Internet communication that is characterized by three significant disadvantages: generally asynchronous, lacks place, and is descriptive rather than experiential. Virtual worlds partly eliminate these communicative shortcomings or at least improve the existing technology to approximate the opportunities of physical face-to-face contact (Ondrejka, 2007). Interactivity between users as well as between users and the virtual objects and the virtual environment allow for rich collaboration opportunities. Influenced by interactivity and media richness (Steuer *et al.*, 1995), virtual worlds increase telepresence (Suh, *et al.*, 2005). Telepresence can be understood as the sensation of "being there" in a mediated environment in time and place (IJsselsteijn *et al.*, 2000).

Hence, new ways for virtual experiences are created (Jiang *et al.*, 2007). The second aspect relates to the nature of virtual worlds and their inherent ability to promote creativity. Virtual worlds such as Second Life build on a new mode of production where the hosting platform firm facilitates unrestrained consumer freedom and empowerment (Bonsu *et al.*, 2008). The built-in tools encourage users to experiment and to iteratively and interactively create almost anything imaginable, while simultaneously or asynchronously sharing the act of creation with other users. Several established companies have already tried to leverage the innovative potential of virtual worlds and asked avatars to engage in different innovation activities along various stages of the development process for new products (Kohler *et al.*, 2009). While these initiatives are indicative of the potential of tapping into avatar creativity throughout the service development process (Alam, 2002), to the best of our knowledge, no research exists that investigates the role of virtual worlds in service innovation. The above thus leads us to our research question: How can virtual worlds support co-creation processes for e-services?

### **3 Research setting**

#### **3.1 Virtual co-creation workshops**

To come up with our research setting, we adopted a Design Science Research approach as illustrated by Hevner *et al.* (2004) and Vaishnavi and Kuechler (2004). Inspired by the co-creation concept and the characteristics of virtual worlds, we chose the virtual world of Second Life as the “site” for our research due to its relative user-friendliness, the ability to create a process easily, and the ability to reach out to a diverse set of users across the globe. During the fall 2010 we will conduct a series of co-creation workshops to assist Travel for change in developing their service. This is the second round of workshops after the successful collaboration with RunAlong, a Swedish e-service company.

#### **3.2 The co-creation process**

*Step 1: Get Inspired.* Upon arrival, participants are presented with several informative panels providing a summary of the workshop steps. In addition, this step seeks to immerse users in the problem context and inspire them with the opportunities presented by the travel for change project. During this early step it will be important to induce a feeling of social co-presence as well as to provide an ice-breaking moment for people to interact with one another. The environment will feature 3D immersive objects that seek to stimulate the playfulness of the participants and enable them to experience the situation. The first step concludes with a brief introduction by the moderators of the workshop purpose and some insight into the upcoming activities.

*Step 2: Get active.* The moderators splits the participants into groups based on where the avatars are sitting on the plenum platform. The break out sessions take place on the dedicated platforms with groups of participants and a facilitator to support socially rich interactions and communications as suggested to be fundamental in transferring tacit and sticky aspects of information and knowledge (Gales, *et al.*, 1995; Von Hippel, 1994). The questions focus on the challenges faced by the participants and as well on emerging trends they have experienced or have learned about during their travels, thus unleashing knowledge for discussion and new creations.

*Step 3: Get creative.* The participants continue working in the breakout setting and are invited to discuss in detail the development of a web community for travellers.

*Step 4: Get critical.* After finishing the discussions in the breakout sessions, participants gather together on the main platform, where the note takers briefly summarize the outcomes of their discussion group. Here the goal is to exchange ideas and to facilitate discussion between the two groups. The group is then introduced to a tool called the BrainBoard that enables the participants to write their ideas on the board as well as to vote on which ideas they prefer. The purpose of the Brainboard is to enhance interactivity during the session, allowing the users to interact with a tool and to easily display and summarize the outcomes of the workshop. The session concludes with a short wrap up from the entrepreneur commenting on the ideas proposed.

#### **4 Preliminary results and discussion**

With this ongoing research project, we seek to understand the potential and effective use of virtual worlds in supporting e-service innovation. What we have already realized is the potential of the medium to bring together people from several continents, effectively sharing their knowledge as well as fuelling the innovating e-service organization with new ideas for growing the business. This enables the so-called conversational approach in new service development (Lundkvist, *et al.*, 2004), where a relationship based on mutual trust allows easier collaboration and alignment of goals delivering tremendous value for the future of the company. Clearly this approach suffers from limitations. One of the major concerns is related to the usability of the interface, which makes it difficult for inexperienced virtual world users to contribute to their fullest potential. A related challenge is recruiting a sufficient number of participants with the necessary skills and motivation. Our research should be of interest to e-service practitioners from the tourism domain as it sheds light on how to design virtual world spaces and activities for co-creation. Moreover, we expect our study to provide significant insights into how the aspects of service co-creation relate to and interplay with one another as well as impact co-creation outcomes, which is of interest to both academics and practitioners.

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