



User innovation and entrepreneurship in the virtual world: A study of Second Life residents

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ABSTRACT

While prior studies have investigated factors, processes and pathways traversed in user innovation and user entrepreneurship within the real world, there is scant attention for user innovation and user entrepreneurship that take place within the virtual world. We report on an exploratory study of a select group of user innovators-entrepreneurs in Second Life, using virtual participant observation and in-depth interviews. Results suggest that the paths traversed by user innovators and user entrepreneurs in the virtual life broadly resemble those in the real life as reported in the literature. Interestingly, our study also suggests that Second Life as a virtual world breeds opportunities leading to entrepreneurial acts in the 'real' world as well as further opportunities in the Second Life. The virtual world itself, as a technological platform, also generates a range of opportunities. We formulate testable propositions and further link our insights to existing research on the drivers and pathways of user innovation and entrepreneurship in the 'real' world (i.e., the role of prior knowledge and networks), Austrian economics theory of entrepreneurial discovery, and creative collective theory.

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1. Introduction

User innovation has proven to be an effective paradigm of innovation over the past few decades. Research has shown that user innovation has emerged in various forms as a result of innovative acts initiated by individuals, users/consumers and their communities in areas such as rodeo kayaking (Hienert, 2006), mountain biking (Christian et al., 2005), surgical instruments (Hippel et al., 2000) and software for music composition (Jeppesen and Frederiksen, 2006). These examples clearly show that some users take the entrepreneurial plunge (Shah and Tripsas, 2007) or become consumers-as-international entrepreneurs (Chandra and Coviello, 2010).

While prior research has paid some attention to user innovation within the three-dimensional concept of space and time, there is a paucity of research on user innovation and entrepreneurship within the four-dimensional concept of space and time such as in the increasingly popular Second Life environment (www.secondlife.com). Importantly, few studies have explored how virtual user innovators take the entrepreneurial plunge and develop commercial aspirations.

In this study, we start with the following research question: why and how do individuals become user innovators and user entrepreneurs in virtual worlds such as Second Life? More specifically, how do they recognize entrepreneurial opportunities in the virtual world and what happens during the course of their entrepreneurial activities? This paper reports on an exploratory study to better understand factors and processes that influence the ability of users to innovate and commercialize their ideas inside and outside the virtual world of Second Life.

Through in-depth case studies of user innovators and entrepreneurs who discovered opportunities within the Second Life virtual platform, we try to build theory and develop propositions on user innovation and entrepreneurship in the virtual world. In particular, this study shows that (1) user innovation processes in the virtual world such as Second Life resemble those in the real life – from the 'emergence phase' with spontaneous, fun, non-pecuniary reasons to the 'community building phase' where opportunities/innovation are further refined to the 'commercialization phase' or the recognition of the opportunities to commercialize artifacts; however (2) the exploitation process in virtual world also often breeds more opportunities in the real world as well as further opportunities in the Second Life world itself; (3) Second Life as a new technological platform will generate a range of opportunities that are not obvious to all potential user innovators/entrepreneurs including 'non virtual' innovators/entrepreneurs, (4) any given user innovator and entrepreneur will discover only

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opportunities related to his or her prior knowledge but the range and quality of innovation and opportunities discovered/created will depend on the nature of their networks and weak ties, and (5) the virtual infrastructure, e.g., free flow of information, anonymity and scripting language, will simultaneously facilitate and deter user innovation and entrepreneurship which in turn will spur more innovation activities as residents attempt to solve the problems.

This paper is organized as follows. First, we provide an overview of user innovation and user entrepreneurship. Next, we develop a conceptual framework that guides our thinking into the plausible factors and processes that influence user innovation and entrepreneurship in Second Life. Third, we describe the methodology used to build new theory from in-depth cases. We also describe what Second Life is and how innovation and entrepreneurship are incorporated in this virtual platform. Fourth, we report the findings that support or not support our initial ideas and derive a number of propositions from these insights for further testing. In the final section, we discuss the implications of these results for user innovation and entrepreneurship research and practice.

2. User innovation and user entrepreneurship

For many decades, innovation has been associated with activities that originate inside the firm. There is assumption that the best minds often reside within firms and firms know more than users/customers. Recent evidence shows that individual users who “set the trend” for the rest of consumers and who have certain technical knowledge have become increasingly important actors in business. Users experience high level of needs and this induces active search for new solutions to satisfy the needs (see Hippel, 2005; Franke et al., 2006). Knowledge is tacit and local (Polanyi, 1958) and hence self-innovation is seen as a more viable solution among users to satisfy needs and wants rather than waiting for firms’ offering. Users can be companies, producers, or just consumers/users, as long as they currently experience needs that mass users will experience months or years in the future.

The paradigm of open innovation comes to mind as customers are generally seen as a very valuable source of innovation (Chesbrough, 2003). As user communities transfer to the internet, they become an even more accessible source for capitalizing on users’ innovative potential and knowledge. However, instead of seeing virtual worlds as the latest technology where real time, media-rich, and highly interactive collaboration can take place, we look at the virtual world as a world in itself where users can start businesses themselves based on what they know or what they learned from others.

Recent research shows that user innovators-entrepreneurs do not necessarily have to be “lead” users who are ahead of the market or are experts in certain fields (see Chandra and Coviello, 2010). Users who experience unique needs and own certain types of prior knowledge and resources could become user innovators/entrepreneurs. Chandra and Coviello (2010) gave examples of eBay users who act as arbitrage entrepreneurs and Second Life users as innovative entrepreneurs. There are other emerging e-commerce platforms that cater specifically to hobbyists and where hand crafted products can be sold (e.g., Etsy.com). On Etsy, \$40 million of sales were generated through close to 2 million transactions in June 2011 alone. So, in this research, we do not aim to focus on lead users but rather users in general that highlights the role of individual users, not firms or professionals, as firm-independent ‘virtual’ entrepreneurs with expertise in certain areas.

Research has provided evidence that user innovation can achieve commercial success. An example includes a software

product concept developed by users, which proved to be commercially more attractive than that developed by traditional marketing research (see Hippel, 1988). Other study found that 48% of surgery equipment was designed by surgeons and had turned into a commercial success (see Franke et al., 2006). More recently, research showed that parents and caregivers, who are users in the juvenile products market, successfully developed and commercialized baby-related products (Shah and Tripsas, 2007). A recent study in international entrepreneurship found that many born global entrepreneurs in knowledge-based industries were previously users who later took the entrepreneurial plunge (see Chandra, 2007).

The literature indicates that user innovation and entrepreneurship tend to develop in a certain pattern (Shah and Tripsas, 2007, p. 129; see also Hippel, 2005). The emergence phase of user innovation is often spontaneous, contains the elements of surprise, and is often initiated for fun or other non-pecuniary reasons. It can be an individual act or an outcome of collective thought. After its birth, innovation diffuses among early-adopters, who are clustered around the inventors (users) themselves. At this point, the innovation is available to anyone to modify and contribute. Although users may start innovating just for fun or out of personal need, once they recognize the possibilities of making profit, they may start scaling up and enter the commercialization and phase. It is reasonable to expect, however, that only a small proportion of users take the entrepreneurial plunge.

3. A framework of user innovation and user entrepreneurship in the Second Life environment

Before starting the fieldwork, we conducted a broad literature review from extant research that is relevant to this study as a starting point. Eisenhardt (1989) provides a roadmap for theory building research and labels this step as “getting started”. We merely used this step to highlight a-priori constructs and highlight some important properties of the virtual platform. Our review highlights not less than three interesting factors and processes that may influence the type and scope of user innovation and entrepreneurship in virtual environments such as Second Life.

3.1. Prior knowledge of user innovators and entrepreneurs in Second Life

Due to the unequal distribution of information in society (see Hayek, 1945), people tend to accumulate different type, quality and amount of prior knowledge. As life experience evolves over time, differences in initial prior knowledge among people may grow in a path dependent manner and lead to more differences in the stock and type of prior knowledge. Prior knowledge creates a ‘corridor’ that allows individuals to discover opportunities that other people may be blind to (see Venkataraman, 1997; Shane, 2000).

Knowledge manifests itself in different types. Scientific knowledge was long believed to be the ‘sum of all knowledge’ (Hayek, 1945), but there are other elements of prior knowledge that are equally important and that can affect user innovation in Second Life. Work experience and education in real life are critical sources of prior knowledge (see Roberts, 1991). Individuals may transfer their previous solutions to old problems to solve a new problem. Prior research has shown that entrepreneurs discovered opportunities and started new business in the field related to their previous work experience or prior knowledge (Shane, 2000).

Although research on innovation in relation to virtual worlds is still in its infancy, there are studies that have focused on the link

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