Individual motivations and demographic differences in social virtual world uses: An exploratory investigation in Second Life

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ABSTRACT

Emerging social virtual worlds (SVWs) are attracting attention from researchers and practitioners for the potential benefits they offer to many real-life domains such as business and education. The values of SVWs cannot be realized without a sufficient number of users; however, little research has been conducted to investigate the factors attracting people to use SVWs. The purpose of this paper is to explore individual motivations and differences in SVW uses based on the uses and gratifications paradigm and on the literature of Internet uses. Content analysis is adopted to code and categorize the responses from 188 users in Second Life (SL), one of the most popular SVWs. Results show that people use SL because of three types of motivations: functional, experiential, and social. Comparative analysis by gender, age, education, and experience using Chi-square tests suggests that (1) female users are more inclined to shopping, researching, and exploring within SL, whereas male users are more concerned with using SL for making money; (2) younger users are more likely to use SL for entertainment, while older users are more likely to use SL for creating and education; (3) users with higher education exert significantly more effort with in-world research and education than those who with lower levels of education; and (4) relative to their counterparts, experienced users are more aware of the values of SL for creating, education, and commerce. No significant inter-group difference of any experiential motivation has been found regarding education and experience. In addition, no significant individual difference has been found regarding social motivations.

1. Introduction

Virtual worlds open up new ways and channels for users to communicate, collaborate, and cooperate. There is a rising interest from researchers and practitioners in the applications of virtual worlds in e-business, e-education, and e-government (Mennecke et al., 2008). Globally, venture capitalists, technology companies, and media firms have been reported to invest more than US$ 1 billion in 35 virtual world companies from October 2006 to October 2007 (VirtualWorldsNews, 2007). Moreover, Gartner predicts that 80% of active Internet users will have a "second life" in virtual worlds by the end of 2011 (Gartner, 2007).

A *social virtual world* (SVW) is a three-dimensional (3D), Internet-based, immersive, massive multi-user virtual environment wherein participants interact through their virtual representatives (i.e., *avatars*) for various purposes, including business and educational endeavors. Existing in real time, SVWs are places where people create elements (e.g., human beings and landscapes) and conduct activities (e.g., establish a social club, marry a partner, travel to exotic locations with other avatars, or build a business) just as in the real world, but without its physical limitations (Fetscherin & Lattemann, 2007). As a subset of virtual worlds, SVWs are different in two major aspects from online games such as massive multiplayer online role playing games (e.g., Everquest and World of Warcraft), another subset of virtual worlds (Bray & Konsynski, 2007; Hemp, 2006). First, while online games focus more on creating entertaining, fantasy-based virtual worlds where participants adventure together (Bray & Konsynski, 2007), SVWs present more open-ended experiences by providing reality-based thematic settings and the ability to host activities and events that revolve around a wide variety of topics (Book, 2004). Second, there is normally no predefined or expressly developed plot or storyline in SVWs (Bray & Konsynski, 2007). SVWs tend to be more stigmergic or self-organized in the sense that the SVW participants or residents themselves determine the development of the worlds. One of the most popular and widely studied SVWs is *Second Life* (SL) (http://secondlife.com/), which was launched by *Linden Lab* in 2003. In SL, users can create and personalize avatars,

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private virtual spaces (lands), and objects (houses and clothes) (Fetscherin & Lattemann, 2007). They can also buy and sell both virtual and real products using Linden Dollars (L$), the virtual currency in SL, which has a real exchange rate with US dollars (Hendaoui, Limayem, & Thompson, 2008).

Scholars have recognized the potential of SVWs to transform many aspects of human life, including education, business, social events, corporate meetings, social networking, and e-commerce (Bray & Konsynski, 2007). Companies have invested millions of dollars in SVWs for business endeavors such as advertising (VirtualWorldsNews, 2007), conducting meetings and conferences, training and recruitment, building product prototypes, and simulating business environment, among others (SecondLife, 2009). Apart from visionary corporations (e.g., IBM, Michelin, and Xerox), hundreds of leading universities (e.g., Harvard, Stanford, and Open University) use SL as a vibrant part of their educational programs. In addition, governments have indicated interest in SVWs. For example, Entropia is supported by the Beijing municipal government with a vision of "bringing 10,000 work-at-home, pollution-free job opportunities to China" (Allen, 2007).

However, the expected values of SVWs can be realized only if there are sufficient users engaging in these SVWs. The first-to-critical-mass advantage perspective (rather than a first- or early-mover advantage) suggests that entities who can quickly attract high popularity and reach critical mass will most likely be successful (Wang, 2009; Westland, 2010). Therefore, the first step towards the success of any SVW is to build a good understanding of the motivations of various users for using the SVW, because this will enable the SVW operator to attract different kinds of users to participate in the SVW. However, little research has focused on this issue. To fill this research gap, this study explores individual motivations and differences in SVW uses based on the uses and gratification paradigm (Blumler & Katz, 1974) and prior literature on Internet uses. The research questions to be investigated in this study are as follows: (i) What are the specific motivations of individual SVW users? (ii) How do the individual differences of SVW users affect their motivation distinctions? This study seeks to explore the reasons for using SL; the reasons for not using SL are beyond the scope of this study.

The remainder of this paper is organized as follows. The next section describes SVWs and reviews previous research on SVWs. Section 3 elaborates on the theoretical background for investigating individual motivations and concerns for using SVW. Section 4 describes the research method. The results of content analyses are presented in Section 5. The paper concludes with a discussion of core findings, implications for research and practice, limitations, and suggestions for future research.

2. Research background

2.1. Social virtual worlds and Second Life

Virtual worlds are interactive systems built for users to inhabit and interact with each other and with software agents via avatars (Davis, Murphy, Owens, Khazanchi, & Zigurs, 2009). In the early 1990s, virtual worlds were two-dimensional, and built as online gaming networks or chat applications (Bray & Konsynski, 2006). Then, 3D virtual worlds were developed as platforms for gaming, entertainment, and "getaways" (Bray & Konsynski, 2006). Recently, 3D virtual worlds have been adapted to move beyond game-play spaces and have become extensions of the earth (Castronova, 2005). This kind of virtual world (i.e., SVW) is dedicated mainly to social and economic interactions, but not to game-play activities (Hendaoui et al., 2008). For example, SL and *Entropia Universe* use virtual currencies to support in-world economies, while *Cyworld*

is a community-oriented virtual world combining personal virtual rooms with social network features (Bray & Konsynski, 2006, 2007). A typical SVW is an immersive, interactive, persistent multi-user share space (normally with graphical interface) that provides its users the experience of immediate real-time interaction for various applications such as socialization, communications, businesses, education, and entertainment, among others (Book, 2004). Due to their 3D nature, SVWs possess an aspect of immersion that provides immersive and interactive experiences that engage their users. Hence, user motivation in SVW participation should be different from user motivation in 2D Internet participation.

A large number of publicly accessible online virtual worlds are designed for a variety of functions, as well as a diverse set of target markets (Mennecke et al., 2008). These "worlds" include SL, There, and Active Worlds, etc. In this study, we focus on SL, the most popular and widely investigated SVW. SL allows participants to create personalized avatars and interact with other avatars in simulated environments largely built by participants (Jacoby, 2008). The exploited virtual spaces of SL grew from 64 acres in 2003 to 65,000 acres in 2008, and the population of SL grew from 2 million residents in December 2006 to more than 9 million in 2008 (Hendaoui et al., 2008). Approximately half a million users visit SL regularly and spend more than a million dollars within it every day (Hendaoui et al., 2008).

SL has developed into a micro-economy brimming with commercial activities facilitated by L$ (Book, 2004; Vitzthum, Kathuria, & Konsynski, 2009). Many real-world institutions, including corporations (e.g., Dell, Cisco, IBM, Microsoft and Intel), universities (e.g., Harvard) and government branches (e.g., the National Oceanic and Atmospheric Administration) have been reported establishing their presence in SL for performing in-world advertising and brand building, selling real-world products and services through SL, conducting training, building product prototypes and/or simulating business situations in a safe learning environment, and holding virtual meetings, among others (SecondLife, 2009; Vitzthum et al., 2009). A large number of SL-based businesses (e.g., VirtualCircle) are dedicated to the sale and resale of user-generated virtual goods. Some innovative firms (e.g., Starwood Hotels and Coldwell Banker) have integrated SL into their overall business model and conducted more innovative uses of SL by providing an immersive virtual experience of buildings and properties that are for sale in the real world (Vitzthum et al., 2009).

However, as an emerging technology innovation (Venkatesh, 1999), SVWs such as SL realize their value for business or other aspects only if they are accepted and used by a sufficient number of users. In prior research, motivation is widely considered to be an essential factor driving perceptions and behaviors of Internet users (Stafford, Stafford, & Schkade, 2004). Moreover, based on motivation-oriented perspectives, Information Systems (IS) researchers have demonstrated that motivations (intrinsic and extrinsic) are important determinants of the intention of individuals to use technology (Davis, Bagozzi, & Warshaw, 1992; Venkatesh, Speier, & Morris, 2002). Hence, in order to promote user participation, SVW operators need to establish a nuanced understanding of consumer concerns and motivations regarding SVW uses.

2.2. Overview of previous research on SVW

Since the emergence of SVWs, only a few researchers have conducted theory-based work on the acceptance of SVWs such as SL. For example, Shen and Eder (2009) have examined the factors influencing the intentions of users to use SL for business by extending the technology acceptance model (TAM). They found that the intention of users in using SL for business is primarily determined by perceived usefulness and enjoyment (Shen & Eder,