Contents lists available at ScienceDirect

Information & Management

Virtual goods, real goals: Exploring means-end goal structures of consumers in social virtual worlds

Yoonhyuk Jung *, Suzanne D. Pawlowski

Ulsan National Institute of Science and Technology (UNIST), School of Business Administration, UNIST-gil 50, Ulsan 689-798, Republic of Korea

A B S T R A C T

The aim of this study is to understand consumer goals for *virtual consumption* in social virtual worlds. Using a means-end chain approach, interviews with 93 users were analyzed to produce a hierarchical goal map, revealing that virtual consumption enables a diversity of goals beyond the previously identified experiential goals. The article's theoretical contributions include: (1) extending our understanding of user goals/goal relationships for virtual activities and (2) developing *virtual liminoid theory*, which describes transitions between users' real-world and virtual identities and virtual consumption as a transition catalyst. The study illustrates the value of a goal focus for future research on user behavior in virtual worlds.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

With more of life lived online, spending on things that don't exist seems more normal... Consuming things made of bits might sound weird, but actually it offers many of the same attractions that make people consume things made of atoms. (p. 28)
- *The New York Times Magazine* [92]

One of the major developments in the arena of social computing over the last decade has been the introduction of the traversable, three-dimensional cyberspaces called virtual worlds. The virtual world industry has experienced dramatic growth in the number of users, the establishment of new worlds and economic activity. By 2012, the number of virtual world users was 1.9 billion, three times the corresponding figure for 2009 [40]. As an example, *Habbo Hotel*, regarded as the largest teen virtual world, increased from 200 million users in 2010 to 270 million in 2012 [79]. The popularity of virtual worlds is also reflected in the explosion of new virtual worlds, such as *Blue Mars*, *FarmVille*, and *Zynga*, with the estimate that the number of virtual worlds would have reached more than

900 by 2013 [41]. Real-money trades, including user-to-provider and user-to-user transactions in virtual worlds, have similarly experienced dramatic growth. In the popular virtual world *Second Life*, total transactions among users for virtual goods reached $3.2 billion during the decade since its launch in 2003 [46].

In gaming virtual worlds (GVWs) (e.g., *Everquest*, *World of Warcraft*), user activities depend on pre-defined themes and plots imagined and produced by the game designers. Their activities typically have the aim of a quest or level-ups rather than social interactions with other users. In contrast, social virtual worlds (SVWs) (e.g., *Second Life*, *Habbo Hotel*) endow users with the ability to personalize their virtual experiences, which induce various social interactions, under minimum constraints. Virtual worlds have economic systems similar to real-world economic systems [17], and the minimum rules nature of SVWs leads to a wide range of economic activities. As SVWs support transactional systems (i.e., virtual currency, internal virtual markets) and allow users to create and own virtual property, users' activities are extended to the production and real-money trading of virtual goods and property. Such a virtual economic system, replicating the real-world economy, is a favorite attraction of virtual worlds [17] and a compelling lure for SVW users due to their support of a laissez-faire economic system consisting of user-to-user transactions. The study reported in this paper focuses on an essential aspect of user behavior and experience in virtual worlds and a vital segment of the virtual economy - *virtual consumption* in social virtual worlds (SVWs).

* Corresponding author. Tel.: +82 52 217 3122; fax: +82 52 217 3102.
E-mail address: yjung@unist.ac.kr (Y. Jung).

One of the predominant user behaviors in SVWs is the in-world purchasing of virtual goods, or virtual consumption. Virtual consumption is primarily supported by in-world real-money trading. The consumption of virtual goods is not limited to SVWs, but has become widely diffused in diverse online environments such as gaming virtual worlds, social networking sites, and social gaming. In 2012, virtual consumption was estimated at $2.9 billion in the US [62] and predicted to grow to $5 billion in 2016 [33]. Why do the users of *Second Life* and other SVWs, or residents as they are called, purchase rainstorms or the sounds of barking? Gaining insights into this question is key to our understanding of the user experience in SVWs. While the products consumed may be 'virtual,' the economic systems are not. Though often dubbed the 'virtual economy,' this is a real economy with links to other real-world economic systems. The research described in this paper examines the question of *why* users consume virtual goods in SVWs. This question is important not only to researchers interested in user behavior in cyberspace, but it is also fundamental to the creators and sellers of virtual goods and virtual world operators. By understanding the needs and goals that can be satisfied by purchasing virtual objects such as Tudor-style homes or a waterfall for a living room, we can also gain a greater understanding of the essence of the social virtual world experience from the user perspective. This understanding is crucial, as the metaverse of public virtual worlds continues to evolve, entrepreneurs are adopting virtual goods as a business model, and corporations are developing business strategies based on enterprise virtual worlds.

To investigate consumer goals related to virtual consumption in SVWs, we employed means-end chain analysis, which is a method for eliciting individuals' goal structures (i.e., goals and their relationships) for an object or event [55]. The goal-centric approach is a novel approach for exploring user behavior in cyberspace, providing a different perspective than previous studies based on a user-adoption framework (e.g., [1,25,48]). In addition, prior studies investigating user goals or motivations in cyberspace have produced sets of separate, individual user goals (e.g., [71,93,95]) but offer little explanation for the relationships among goals. This limitation may preclude the ability to develop a more comprehensive picture of user goals. The means-end chain analysis approach can be used to gain a more comprehensive understanding through eliciting and placing goals within a structure that includes a hierarchical system of interrelated goals [60]. The hierarchical goal map, which is an outcome of the analysis, provides richer information and offers more nuanced understandings of virtual consumption in social virtual worlds.

We begin the paper with an overview of social virtual worlds and the virtual economy, followed by a description of the means-end chain approach, which provided the methodological framework for the study. Next, we describe the research method, including the laddering interview technique used to elicit user goals for virtual consumption, and an analysis of the data to generate the hierarchical goal map. The map is described in detail and interpreted in the results section that follows. Finally, the implications of goal-directed behavior in virtual consumption highlighted by the map are discussed, including preliminary implications for theory and practice.

2. Research background

2.1. Prior research on virtual consumption

An important SVW behavior is "consuming things made of bits," or virtual consumption. SVWs allow users to create and to sell custom virtual objects. Virtual goods production and consumption has created burgeoning economies within SVWs. Real money and increasing transaction volumes have added to the complexity of and issues pertaining to SVWs such as security and taxation regulation concerns [12]. Despite its importance, there is a paucity of knowledge concerning various aspects of virtual consumption [48]. Some research on the virtual economy focuses on legal aspects and economic analysis. One issue engaging researchers in this area is whether real-money trading in these environments should be regarded as real transactions in the legal sense [42]. From an economic perspective, other researchers have performed analyses of virtual goods using concepts such as demand curves, price flexibility, or macroeconomic indicators [16]. While legal and economic research is valuable in understanding the overall environment of the virtual economy, it rarely reflects the perspective of the economic subject, that is, users' understandings of the virtual economy.

More recently, researchers have begun to pay attention to the users of SVWs. This body of research primarily examines factors affecting user adoption of SVWs. In these studies, utilitarian, hedonic, and social factors have been found to have a significant influence on adoption. Based on the technology acceptance model (TAM), Shen and Eder [77] demonstrated that perceived usefulness and enjoyment affect users' intention to use *Second Life* for business. Verhagen et al. [90] found that both experiential factors (escapism and entertainment) and economic value play an important role in users' satisfaction with an SVW. The importance of experiential factors in user adoption of SVWs is confirmed in Holsapple and Wu [31], who report a positive effect of fantasy and enjoyment on users' acceptance of an SVW. Research also reveals that social factors affect user adoption of SVWs [20]. Finally, studies by Zhou et al. [95] and Jung and Kang [32] provide additional evidence that utilitarian, hedonic, and social factors are the primary motivations for SVW use.

While research investigating users' overall adoption behavior has been conducted, there has been little research on specific user behavior in SVWs such as virtual consumption. Given the growing importance of SVWs from a business perspective, it is important to look beyond adoption to explore and gain a deeper understanding of the varied types of user behavior in SVWs. Virtual consumption, which is our target behavior in this study, is a key behavior in that it is widespread in SVWs [1]. To date, very few studies investigate virtual consumption from the user's perspective. Prior studies on virtual consumption are largely an extension of investigations of online shoppers, in which primarily utilitarian and hedonic factors are examined to understand shopper behavior. These studies have demonstrated that both utilitarian and hedonic factors are significantly influential in attitudes towards or intention to purchase online [13,18,39]. Animesh et al. [1] revealed that experiential factors (i.e., a sense of presence, flow) have a significant impact on users' intention to purchase virtual items in an SVW. Another study by Guo and Barnes [25] explored purchase behavior in an SVW from the perspective of intrinsic and extrinsic motivations. In addition to utilitarian and hedonic factors, some studies reveal a significant influence of social factors on users' consumption of virtual goods. Through scrutinizing virtual item attributes in virtual worlds, Lehdonvirta [43] classified key drivers of purchasing virtual goods into three types: functional, hedonic, and social. Similar results were reported in Mäntymäki and Salo [48], demonstrating that users' perceptions of usefulness and enjoyment and network size (the degree of interaction with others in a virtual world) influenced virtual consumption.

While providing initial insights into virtual consumption behavior, prior research regarding virtual consumption also has a significant limitation. While these studies have examined the primary factors affecting purchase intention in a confirmatory manner, they do not address a wide range of user goals for virtual consumption. More precisely, these studies examine factors based