

EXPLORING KEY DETERMINANTS OF VIRTUAL WORLDS BUSINESS SUCCESS BASED ON USERS' EXPERIENCE AND PERCEPTION

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Abstract. Given the growth and popularity of virtual worlds, companies have a strong interest in presenting themselves successfully in virtual worlds. We designed an experimental study to identify the key determinants of virtual worlds business success based on users' experience and perception. The preliminary results indicate that Starbucks, McDonalds, and Paris are the 3 most favorite sites. Furthermore, 5 key determinants (entertainment, functionality, interactivity, reality, and sociality) of business success in virtual worlds are identified in this study. We conclude the practical and theoretical implications of the findings of this study.

1. Introduction

Given the growth and popularity of virtual worlds, companies have a strong interest in branding themselves (i.e. Starbucks and McDonalds) in virtual worlds as well as marketing their products and services to virtual member communities. One example of such virtual worlds is Second Life (SL) where a user is represented by an avatar to walk in the virtual world, chat with others by typing or calling, and engaging in business using the currency of SL called SL dollar. Most importantly to businesses, SL dollar can easily be exchanged for real currencies with a specific exchange rate (i.e., 1 USD = 360 SLD) (Secondlife.com).

Despite many studies have examined the impact of virtual worlds on business from different perspectives in terms of advertising medium (Barnes, 2007), marketing strategies (Lui et al., 2007), brand value (Barnes and Mattsson, 2008), business value analysis (Arakji and Lang, 2008), and user intention and behavior (Guo and Barnes, 2007; Shen and Eder, 2009; Ahmad et al., 2009), no study has attempted to explore the key determinants of virtual worlds business success. Identifying such key determinants certainly contributes to both theories and practices of doing business successfully in virtual worlds. Therefore, the goal of this study is to explore the key determinants of virtual worlds business success to bridge a major gap in the literature.

The short paper is organized as follows. In Section 2, we review virtual worlds SL and avatars. Section 3 discusses the research question and the research methodology. Section 4 presents the preliminary results of the data analysis and identifies the key determinants of business success in virtual worlds. The final section concludes the paper by discussing the implications for both research and practice, and future research.

2. Virtual Worlds Second Life

Virtual worlds are computer based simulations which may provide a platform for social networking and many other business activities. While businesses are utilizing virtual worlds in many ways, including brand and service expansion, human resources, business to business opportunities, and online collaboration, people are still figuring out the best way to make use of virtual worlds (Smith, 2008; Cheal, 2007).

SL is a virtual world created and introduced by Linden Lab in June 2003 (Secondlife.com). It is perhaps the most socially and economically complex virtual world environment that is entirely driven by user-created content. SL is a social environment in which an avatar lives, explores, works, shops and talks to each other, that in many ways is similar to the physical world (Koh et al., 2007; Kim et al., 2007). Residents in SL communicate with one another by controlling their avatars. Many other activities, especially shopping, represent commerce opportunities. Many have claimed that SL is the next big thing and is quickly becoming an arsenal of mainstream application that businesses are using to gain an edge on their competitors (Lagorio, 2007; Metz, 2007; Ringo, 2007). Its popularity is quickly reaching the likes of MySpace and YouTube. More importantly, SL is growing throughout the business sector, as well as in educational environments (Lagorio, 2007; Maher, 1999; Metz, 2007; Ringo, 2007; Smith, 2008; Boulos et al., 2007; Jarmon and Sanchez, 2008). Companies on the cutting edge and even those not traditionally seen as technology based, are using SL to provide additional benefits to their employees, customers, and the general population (Metz, 2007; Cheal, 2007).

Currently, more than 50 major corporations have established a presence in SL such as IBM, Dell, Cisco, Coca-Cola, News Corp, and Royal Philips Electronics (Secondlife.com). These companies in SL are offering services such as product consulting through knowledgeable employees who might not be available on their company's website (Ajzen and Fishbein, 1980; Fornell et al., 1996). Hence, this new emerging platform creates a truly exciting research opportunity about how to do business successfully in virtual worlds. As a preliminary study, virtual worlds business success is defined as the degree of users' engagement with the virtual site based on their experience and perception.

3. Research Question and Methodology

The research question of this study is: What are the key determinants of virtual worlds business success based on users' experience and perception? In order to answer the research question, we designed a survey instrument which includes four parts: 1)

demographics; 2) given 15 sites in SL, identify 3 most favorite sites and record time in minutes spent on these 3 sites, respectively; 3) explain why you picked these 3 sites; and 4) any other comments about your SL experience. The initial version of our survey instrument was refined through extensive pre-testing and discussions. The final version of the survey instrument is shown in Appendix.

Undergraduate students who enrolled in a Management Information Systems (MIS) course from a major American University in United Arab Emirates were used as subjects of this study. In a total of six sections of the course, the students volunteered to participate in this study for receiving a small amount of class participation credit as an incentive. A total of one hundred and six participants completed both an SL assignment and the final surveys that provide the data for our further analysis. The participants did not have any exposure to the goals of the research prior to completing the surveys. As indicated in Table 1 about the participants' demographics, the participants had experience with the Internet and computers and are therefore representing a large portion of current and future Internet users.

Table 1. Breakdown of study participants

Demographic Categories	Range	Percentage
Gender	Male	33.0%
	Female	67.0%
Major	Finance/Accounting	50.0%
	Management/Marketing	23.6%
	MIS	8.5%
	Economics	1.9%
	Other	16.0%
Academic Rank	Freshman	34.9%
	Sophomore	53.8%
	Junior	9.4%
	Senior	1.9%
Frequency of Using Virtual Worlds (including Second Life)	Daily	1.9%
	Weekly	17.0%
	Monthly	16.0%
	Rarely	39.6%
	Never	25.5%

One issue often raised by researchers is whether the use of students for a study limits the external validity of the results obtained. Prior research illustrates that there are no statistically significant differences between students' and general consumers' beliefs and attitudes (Durvasula et al., 1997). In addition, surveys of Internet users reveal that young people with above average education form the majority of users; therefore, they also form the majority of potential web users (Secondlife.com).

4. Preliminary Results

First, we present count and time for participants' 3 most favorite sites. As shown in Table 2, Starbucks, McDonalds, and Paris are the 3 most favorite sites based on participants' experience in SL.

Table 2. Count and time for 3 favorite sites

	Sites	No.1 Count/Time	No.2 Count/Time	No.3 Count/Time	Total Count/ Total Time
1	Dell	12/114	0/0	0/0	12/114
2	Cisco	2/15	0/0	1/10	3/25
3	IBM	5/62	5/46	0/0	10/108
4	Coca-cola	2/4	0/0	0/0	2/4
5	Starbucks	37/283	5/57	4/42	46/382
6	McDonalds	21/152	21/124	3/14	45/290
7	Noob Island	7/86	1/15	2/23	10/124
8	Fashion Square	3/30	11/101	6/86	20/217
9	Freebie Outlet	3/33	6/71	1/10	10/114
10	The Safari Zoo Sites	7/43	11/88	3/32	21/163
11	Paradise Amusement Park	0/0	14/166	13/148	27/314
12	Museum	1/5	5/47	2/14	8/66
13	Africa	3/55	9/118	8/54	20/227
14	Paris	0/0	14/163	27/302	41/465
15	New York	0/0	1/0	32/317	33/317

Based upon participants' explanations about their picks and other comments about their SL experience (e.g., "I liked Africa because the animals there were nice to see and Paris because of Eiffel Tower and Madonalds seemed close to reality", "In dell I found so many interesting electronics. I like the decoration of Mcdonalds, but unfortunately I was not able to eat there. Paris provided so many historical views which was really nice"), a content analysis was conducted to explore key determinants of business success in virtual worlds. The key determinants of virtual worlds business success are identified and illustrated in Figure 1.

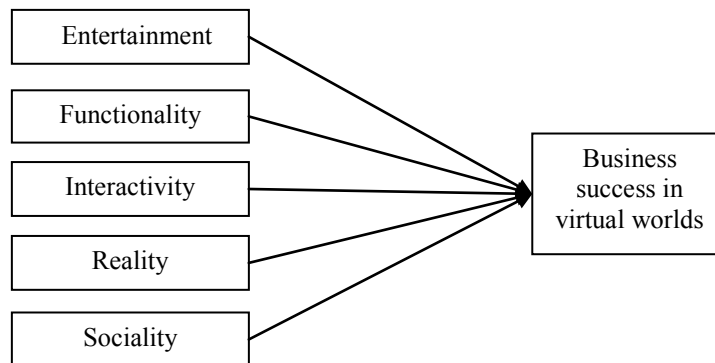


Figure 1. Key determinants of virtual worlds business success

5. Conclusion and Future Work

Based on users' SL experience and perception, 5 key determinants (entertainment, functionality, interactivity, reality, and sociality) of business success in virtual worlds are identified in this study. The preliminary results contribute to both research and practice. Specifically, to the best of our knowledge, this is the first research that tries to explore the key determinants of business success in virtual worlds. Our study also informs IT managers that these 5 key determinants deserve more efforts and resources to present their business successfully in virtual worlds. Developing measurement instruments to empirically test the proposed relationships can lead to promising future research opportunities. Also, future research is needed to examine the gender impact on the proposed relationships between 5 key determinants and virtual worlds business success.

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Appendix: Survey Questions

PART A: ANSWER THE FOLLOWING QUESTIONS

Demographics

1. Major?
 - MIS
 - Finance/Accounting
 - Management & Marketing
 - Economics
 - Others: _____
2. Your current standing:
 - Freshman
 - Sophomore
 - Junior
 - Senior

3. What is your gender?
 - Male
 - Female
4. Your experience with Second Life (SL) or other similar applications such as World of War Craft, and SimCity:
Not at all Moderately Totally
1 2 3 4 5 6 7
5. If yes, how often do you use them?
 - Daily
 - Weekly
 - Monthly
 - Rarely
 - Never

PART B: IDENTIFY THE 3 MOST FAVORITE SITES THAT YOU WOULD LIKE TO VISIT REGULARLY AND RECORD TIME IN MINUTES YOU SPENT ON THESE 3 SITES

Sites		3 favorite sites	Time (minutes) you spent on these 3 sites
1	Dell		
2	Cisco		
3	IBM		
4	Coca-cola		
5	Starbucks		
6	McDonalds		
7	Noob Island		
8	Fashion Square		
9	Freebie Outlet		
10	The Safari Zoo		
11	Paradise Amusement Park		
12	Museum		
13	Africa		
14	Paris		
15	New York		

PART C: WHY DID YOU PICK THESE 3 SITES?

PART D: ANY OTHER COMMENTS YOU WISH TO MAKE ABOUT YOUR SECOND LIFE EXPERIENCE?