

Virtual World Experiential Promotion

Anjala S. Krishen, Andrew M. Hardin, and Michael S. LaTour

*Department of Marketing, Lee Business School, University of Nevada,
Las Vegas, Nevada, USA*

Given that virtual worlds as a promotional vehicle may dramatically alter the existing customer experience, we seek to understand the impact of the virtual environment through interdisciplinary research. We present a conceptual framework, beginning with a qualitative study, and finishing with a quantitative study that includes hypothesis testing. Our findings indicate that virtual world experiential promotion (VWEP) provides better hedonic attributes, such as atmospherics, social experience, and personal/adaptive selling, when compared to “e-tail” environments. Results for the the provision of utilitarian attributes were more mixed, revealing that time savings and convenience were perceived as being less advantageous in VWEP environments than in retail environments, while ease of switching was perceived as being not significantly different across the two channels. As hypothesized, avoiding salesperson pressure was seen as an advantage of VWEP environments over retail environments. In summary, we conceptually introduce the virtual world promotional vehicle, show the importance of the consumer experience within such via two studies, and provide a framework for future research in the virtual world promotion context.

Virtual worlds have the potential to dramatically alter the existing electronic promotional experience. Traditional forms of media have now been augmented by allowing the consumer to socialize and mingle, browse products from all angles, and play games or interact with other gamers in virtual world environments. These environments give advertisers multiple points of contact with their consumers, therefore requiring thoughtful and synergistic integration with promotional strategy (Godes, Ofek, and Salvary 2009). Consumer experiences are by their nature “brain events” that entail the brain’s interpretations of sensory experience and hence are quite malleable and strategically recognized as promotional vehicles (LaTour, Carbone, and Goan 2008). By incorporating the experiential aspects of traditional shopping channels into a Web-based, three-dimensional environment (cf. Ha 2005), virtual world experiential promotion (VWEP) can enhance and mold mental models associated with the brand via the promotional experience. These “mental models” can then act as a forward frame that will impact the interpretation of future experience, be it virtual or otherwise (LaTour et al. 2008). Much as was forecast by research at a conceptual level many years ago (Ranchhod 1998), virtual worlds allow the consumer to become part of a larger social network, sharing brand beliefs and forming a more in-depth brand experience. The

This article was accepted by Claude Martin and James Leigh, previous editors of the *Journal of Current Issues & Research in Advertising*.

Address correspondence to Anjala S. Krishen, Department of Marketing, Lee Business School, University of Nevada, Las Vegas, NV 89154, USA. E-mail: anjala.krishen@unlv.edu

breadth of consumer shopping choices, as well as the merchant's bottom line, may both be augmented in virtual world environments as the technology advances and the use of virtual worlds becomes increasingly more widespread (Mennecke et al. 2007). Even though these virtual world environments share some similarities with their bricks-and-mortar and e-tail counterparts, they offer a very distinctive interactive experience to the consumer, and a means of experiential promotion to the advertisers (Ailawadi et al. 2009; Godes et al. 2009).

Virtual worlds such as Second Life already allow members to buy and sell in-world products,¹ and some companies have begun to explore how real-world commerce can be conducted in virtual-world environments. For example, IBM not only uses Second Life as a collaborative platform for corporate meetings, but also has dedicated in-world real estate called "islands" to market and sell products such as Smart SOA.² Despite the enormous potential of virtual worlds as a future e-commerce platform, scant research has focused on consumer behavior in virtual worlds as strategic experiential promotion. For researchers, the need to develop new theory to understand virtual-world user behavior is critical (Fuller, Hardin, and Scott 2007; Mennecke et al. 2007).

Virtual world research to date has generally focused on the development of conceptual models based on the existing literature (e.g., Park et al. 2008), thus biasing researchers in the direction of existing theory, rather than encouraging them to go beyond their preconceived notions about how promotion might operate in virtual world environments. We attempt to address this gap in the literature by conducting a mixed qualitative/quantitative study designed to first identify consumer perceptions of the advantages of VWEP, and then comparing those perceptions with those of traditional retail and electronic commerce (e-tail).

We begin our article with a short discussion of virtual-world technology. Next, we discuss the Study 1 methodology and summarize the qualitative results. We then develop a conceptual model, and use that model to propose specific hypotheses designed to evaluate the advantages identified in the qualitative analysis (Study 1). Following this, we describe the quantitative methodology and analysis used to test those hypotheses (Study 2). Implications, limitations, and a conclusion are also provided.

VIRTUAL-WORLD TECHNOLOGY

Virtual worlds such as Second Life, There, and Active Worlds provide a three-dimensional, Web-based environment in which users interact through the use of a virtual simulation of themselves, or an "avatar." Virtual worlds originated as entertainment platforms, but have recently become popular for both business and educational purposes (Castronova 2005). Organizations such as IBM and Sun Microsystems employ virtual-world technology to facilitate business activities such as collaboration, and the marketing and sales of information technology (IT)-related offerings. Retail companies also use their presence in Second Life to advertise and promote their real-world products.

New initiatives that have been endorsed by major corporations such as IBM have recently been put into action to address some of these limitations. For example, IBM partnered with Linden Labs to host its Second Life presence behind IBM's corporate firewall. Sun Microsystems

¹Wealth in excess of \$1,000,000 has been attained through in-world commerce (Hof 2007).

²Smart SOA is a set of guiding principles developed by IBM, based on its extensive experience working with customers using service-oriented architecture (SOA).

is now developing of its own virtual world called Project Wonderland. Finally, the Metaverse project has been introduced as an open source initiative aimed at the development of a pervasive three-dimensional (3D) network in which virtual worlds can be developed much the same as Internet-based webpages. Using similar logic structures, avatars would be able to link to different 3D virtual worlds within the Metaverse, retaining their appearance and other in-world characteristics. The development of such a capability would greatly aid in the advancement of virtual-world technology as a mainstream commerce platform, and we propose that this potentially adds a crucial emerging experiential component (cf. Godes et al. 2009) to strategic integrated marketing communications (IMC).

STUDY 1 (QUALITATIVE)

To help identify new theory, our study begins with a qualitative inquiry, asking subjects to answer a series of open-ended questions regarding the perceived advantages and disadvantages of VWEP.

Methodology

As virtual worlds are a relatively less explored context in marketing literature, and we seek to gain further understanding of how consumers behave in them, we first collected data using a qualitative design (Russell and Puto 1999; Brady and Cronin 2001; Drumwright and Murphy 2001). Qualitative data for this study were gathered via an open-ended Internet-based descriptive survey in a two-sample multiple cross-sectional design.

Sample and Procedures

One Study 1 sample consisted of 57 undergraduate business school students, while the other consisted of 36 EMBA (executive master's degree in business administration) students who are working professionals, in the western region of the United States. Participant identification and responses were kept confidential. Sample 1 consisted of 31 females and 25 males with an average age of 20 years. Sample 2 consisted of 16 females and 20 males with an average age of 30 years. Respondents were asked to complete an open-ended questionnaire consisting of the following virtual-world scenario: "Imagine that you have just entered Second Life": (1) What types of activities would you like to do? (2) What features of the technology would you most like to use? (3) What advantages does the environment provide for online shopping? Given our interest in virtual-world promotions in particular, we inserted questions 1 and 2 as fillers in our study and focused on the responses given for question 3.

Analysis

As is the case in many qualitative studies, conceptual categorization of the findings must be derived in order to classify the data (Spiggle 1994). Two trained graduate students, one male and

TABLE 1
Study 1 Sample Qualitative Responses of Virtual-World Advantages

<i>Advantages</i>	<i>Sample response</i>
Atmospherics	"More fun, gives more of a real life feeling. It is visual. A more real transaction process. More creativity."
Social experience	"You can have social interaction with other shoppers."
Personal/adaptive	"You can communicate with the seller. You might explore new things that you might not have known before."
Time savings and convenience	"Ease of access, being convenient, time savings."
Lower switching costs	"You have more choices, numerous products and many vendors in second life. You can see a variety of products on the same site. The variety of choices out there."
Avoiding salespeople	"You don't have to deal with people like at the retail store. No face to face shopping hassle."

one female (Kiecker, Palan, and Areni 2000), who were unaware of the research topic, served as content analysis coders (Reynolds and Arnold 2000). Each coder independently analyzed and categorized the data from the survey into key themes. Following this process, the authors of the article worked independently to further classify the data into distinct categories. Finally, the authors met and agreed on the key themes. These themes came from the existing e-commerce and retailing literatures that identify the reasons that shoppers choose particular environments for their shopping needs (e.g., Reynolds and Arnold 2000; Dholakia and Uusitalo 2002; Sicilia, Ruiz, and Munuera 2005).

Results

Table 1 summarizes the key themes that emerged as a result of our qualitative study. Consistent with the hedonic aspects of a retail shopping experience as a means of promotion (Ailawadi et al. 2009; Godes et al. 2009), participants identified as advantages of virtual-world shopping (1) atmospherics, (2) the ability to support a social experience, and (3) the ability of the environment to support a personal/adaptive experience. Consistent with the utilitarian characteristics of an e-commerce shopping experience, participants identified as advantages (1) time savings and convenience, (2) lower switching costs, and (3) the ability to avoid salespersons.

Having identified the key advantages perceived by the participants in the qualitative study, we next develop a conceptual framework, and then use that framework to develop our formal hypotheses for Study 2.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

As depicted by Figure 1, our qualitative results suggest that consumers perceive that the advantages of VWEP exist at the intersection of retail and e-tail. Advertising academics categorize virtual reality research as an Internet segment and study it as a facet of Internet-related research (Cho and Kang 2006). Still other literature argues that the Internet itself allows for virtual product



FIGURE 1 Conceptual model of virtual world experiential promotion.

experiences (Klein 2003) and provides a virtual environment in which consumers can reach a flow state (Novak, Hoffman, and Yung 2000; Schlosser 2003; Sicilia et al. 2005). Further, the Internet “of the future” has been classified as a virtual communication tool, in that it allows for human–message interaction (Ko, Cho, and Roberts 2005), and this idea underscores the need for our notion of VWEP. In effect, we conceptualize virtual worlds as an extension of both Internet shopping and retail shopping, in that they allow for an even more experiential promotional environment. Our hypotheses underscore the idea of VWEP as providing for several of the utilitarian advantages of e-tail and several of the hedonic ones of retail.

Burke (1997) made a call for retailers to experiment carefully while moving into the Internet; we view our research as a similar call for retailers and e-tailers, as they move into the virtual world experiential promotion (VWEP) environment. The term “experience economy” describes how consumers today view their shopping interactions, whether in a retail or e-tail environment (Mathwick, Malhotra, and Rigdon 2001). While to some extent capable of providing both hedonic and utilitarian promotional experiences, retail channels are generally associated with a more hedonic shopping experience (Arnold and Reynolds 2003), while e-tail channels have been generally associated with a more utilitarian experience (May 1989; Monsuwe, Dallaert, and Ruyter 2004). Thus, developing a conceptual framework of VWEP based upon the advantages associated with both retail and e-tail commerce fits nicely with our qualitative findings, as well as prior research suggesting that virtual-world environments support both hedonic and utilitarian experiences (Fuller et al. 2007; Mennecke et al. 2007).

In virtual worlds, consumers no longer have to sacrifice the social aspects of a shopping experience in order to realize the utilitarian benefits of e-commerce. Functioning as a form of interactive media (Stewart and Pavlou 2002), virtual worlds allow consumers to become more active in

controlling their communications environment with advertisers. Three-dimensional virtual worlds allow consumers to interact with vendors using gestures, heads-up displays, and voice-enabled communication technologies. This array of technologies allows consumers to interact with the providers of products and services in a communication-rich environment that surpasses current Internet shopping channels. For example, consumers can interact with “virtual concierges” that can assist them with their purchasing decisions much like in traditional shopping environments. While e-tail channels provide online chat, or telephony assistance (Xiao and Benbasat 2007), the virtual-world concierge can actually communicate with the in-world consumer while manipulating products in a manner consistent with traditional bricks and mortar providers and hence functions as a highly experiential promotion experience.

In addition, consumers may enjoy the virtual-world shopping experience with their friends and family much like traditional shopping outings at the local mall. Consumers can communicate with each other using voice technology and gestures, while interacting with three-dimensional products. If consumers and their shopping companions wish to take a break from the shopping experience, they can visit a simulated beach or even a nightclub, complete with dancing and socialization. Note that the virtual-world shopping experience has the additional advantage of allowing consumers to shop from the convenience of their homes with friends and family who may have relocated and live far away, something that cannot easily be done in retail environments.

Enjoying the hedonic shopping experience of virtual worlds does not mean that consumers have to sacrifice more utilitarian goals such as time savings, convenience, and low switching costs. Virtual worlds are based on Web technology and can therefore be accessed from anywhere a connection to the Internet is available. Virtual-world shoppers can easily locate products by using in-world search functions, and can “teleport” from store to store as easily as clicking on a hyperlink when shopping online (Schlosser 2003).

Despite the obvious potential of virtual worlds for supporting a hybrid model of commerce, little is known about how the VWEP environment will influence consumer shopping behavior. While there is a plethora of literature on consumer behavior in traditional retail and e-tail environments, this literature may or may not directly apply to this new technology. To truly understand consumer behavior within this new environment, new theory based upon sound conceptual models is needed (Fuller et al. 2007). We embrace this thinking by now developing our Study 2 hypotheses based upon our conceptual model.

Store Atmospherics

One of the most obvious advantages of retail over e-tail environments for experiential promotion is that multisensory atmospheric elements can be created and utilized, such as acoustics, creative shelf layouts, artistic furniture and settings, and haptic stimulation (Tractinsky and Lowengart 2007). As can be seen when walking through a shopping mall, every store creates its own unique environment, often beginning with unique smells, lighting, and music, which can change according to the time of year, time of day, or a promotional event that the store may be sponsoring. Consistent with the advantages of atmospherics in retail settings, several of the subjects in Study 1 mentioned the capability of virtual worlds to mimic real-life settings. For example, comments such as “*More fun, gives more of a real life feeling*” and “*A more real transaction process*” were

identified. Researchers have suggested ways that a website can create atmospheric benefits (“webmospherics”), but these effects are not in three dimensions and would still lack several of the options (such as haptic and product rotations) available in retail channels (Childers et al. 2001; Menon and Kahn 2002). Thus, we expect that consumers perceive the advantages of atmospherics to be higher in virtual worlds than in e-commerce environments.

However, literature in the field of virtual worlds has also noted the lack of realism present in today’s unsophisticated interfaces (Kock 2008). While visual stimulus and sound can be provided in a manner similar to retail environments, facilitating smell and the weight of objects are obstacles yet to be overcome (Mennecke et al. 2007). Thus, we expect:

H₁: Consumer perceptions of the advantages of store atmospherics in VWEP environments will be significantly higher than those for e-tail environments and significantly lower than those for retail environments.

Social Experience

Bricks-and-mortar retailers both in shopping malls and strip malls offer the advantage of a recreational shopping environment that cannot easily be provided in an e-tail environment. Essentially, both recreational shoppers and variety-seeking individuals (Krishen, Bui, and Peter 2010) can enjoy a social experience as they walk around and browse in the various stores and kiosks (Guiry, Mägi, and Lutz 2006). For example, consumers can enjoy mingling with other shoppers and salespeople, bargain hunting, browsing, sensory stimulation, being pampered, and kinesthetic experience (Cox, Cox, and Anderson 2005). Similar to the advantages of the social experience provided by retail environments, during our qualitative analysis of the open-ended survey data, we identified comments such as “*You can have social interaction with other shoppers*” and “*It provides the ability for people to search with many different people for the things they are looking for.*”

On the other hand, virtual worlds cannot support face-to-face and physical contact, questioning the ability of virtual worlds to provide a social experience equivalent to that provided in retail environments. Avatars, although three-dimensional, are often perceived as lacking a resemblance to humans (Park et al. 2008). Thus, we expect to find:

H₂: Consumer perceptions of the advantages of social experience in VWEP environments will be significantly higher than those of e-tail environments and significantly lower than those of retail environments.

Personal/Adaptive

One major advantage enjoyed by traditional retailers over e-tailers is adaptive selling. Adaptive selling involves the ability of a salesperson to adapt his or her behavior to fit the particular needs of a consumer as the consumer enters the store (Weitz, Sujaan, and Sujaan 1986). Salespersons can do this by ascertaining overt signals as well as by asking the customer about his or her shopping goals on that particular trip (May 1989). By identifying goals early in the shopping experience, salespersons can more easily influence consumers through adaptive sales techniques because consumer goals in the early stages are more malleable than their deterministic

and action-oriented second-stage goals (Lee and Ariely 2006). Being able to respond in a real-time physical interaction allows salespeople to distinguish consumer emotional cues and react accordingly (Menon and Dubé 2000; 2004). Thus, the ability to adaptively sell in the retail environment allows businesses to intervene in the critical phase of decision making and possibly to shape the consumer goal in a mutually beneficial way. The advantages of personal/adaptive selling were also noted by the subjects in Study 1. For example, comments such as “*You can communicate with the seller*” and “*You might explore new things that you might not have known before*” were identified during our analysis. These comments highlight the ability of virtual worlds to support adaptive selling and to influence consumers during the formation of their shopping goals.

Despite this capability, however, some participants also identified the ability to avoid salespersons as an advantage of VWEP environments. In virtual environments shoppers can “teleport” to another store or mall more easily, thereby avoiding a salesperson, than can be done in a retail environment. Thus we expect:

H₃: Consumer perceptions of the advantages of adaptive/personal selling in VWEP environments will be significantly higher than those for e-tail environments and significantly lower than those for retail environments.

Time Savings and Convenience

Two of the most prominently cited benefits of Internet or catalog shopping are time savings and convenience (Dholakia and Uusitalo 2002). Internet shopping can be considered convenient for several reasons, including not being restricted by retail hours, not having to drive to the retail location, or not having to interact with retail employees to gather information or make a purchase (Monuwe et al. 2004). Researchers have also found, for example, that rural consumers who may not be able to travel far enough to purchase products are more likely to engage in nontraditional e-commerce shopping (May 1989). Consumers who want to achieve more shopping outcomes in less time, that is, those who are time pressured, and those who are less likely to shop primarily for social interaction, would prefer to shop on the Internet (Grewal, Iyer, and Levy 2004). The advantages of time savings and convenience in virtual worlds were not lost on the Study 1 participants. For example, comments such as, “*Easy, convenient, time saving*” and “*It is fast and easy*” were classified in this category.

While shopping in virtual worlds is perceived as being more time-saving and convenient than in retail environments, the rendering of 3D graphics over the Internet causes delays and lag time during the virtual-world user experience. These delays are expected to be longer than those experienced during e-commerce activities. Thus we expect to find:

H₄: Consumer perceptions of the advantages of time savings and convenience in VWEP environments will be significantly higher than those for retail environments and significantly lower than those for e-tail environments.

Lower Switching Costs

Internet shoppers can spend hours browsing through stores or learning about products without any salesperson-type pressure or stigma from returning to the same site multiple times. As Moe (2003)

explains through clickstream research, consumers on the Internet are primarily categorized by four interaction goals: browsing, learning, searching, and buying. Though Internet sites can take information about consumers through cookies, they cannot deter consumers from readily switching from one e-tailer to another in moments, possibly using one to gather information and the second one to complete the purchase (Porter 2001). These lower consumer switching costs encourage consumers to enjoy the process of trying to purchase the highest quality product for the lowest possible price without having to lose the convenience and lack of human interaction. During the examination of the Study 1 data, we identified comments that were clearly focused on the ability to easily switch vendors and browse to another site, for example, “*You can obtain nearly any product from the comforts of your living room*” and “*Malls can have a much larger selection of stores.*”

Despite the ease of switching among vendors in virtual worlds, the number of virtual world vendors is currently limited. In addition, the promise of a 3D Internet has not yet materialized. Because of this, virtual-world consumers are limited not only with respect to the number of vendors currently available, but also in their ability to easily transfer from one virtual world to another.

H₅: Consumer perceptions of the advantages of switching costs in VWEP environments will be significantly higher than those for retail environments, and significantly lower than those for e-tail environments.

Avoiding Salespeople

Not having to interact with retail employees to gather information or make a purchase has been suggested as an advantage of e-commerce shopping (Monzuwe et al. 2004). As noted earlier, Internet shoppers can spend hours browsing through stores or learning about products without any salesperson-type pressure. Although avoiding salespeople could have been classified as belonging to either of the two previous categories, the frequency of its mention during Study 1 resulted in the creation of a separate category. Example comments include “*You don’t have to deal with people like at the retail store*” and “*No face to face shopping hassle.*”

Like their real-world counterparts, however, virtual concierges are often used by virtual-world vendors to interact with consumers. For example, consumers interested in the SOA products offered by IBM can speak with one of many avatars representing a real-world IBM representative. If virtual-world users visit the IBM region in Second Life dedicated to the SOA product offerings, an encounter with an IBM representative is likely. Thus, we expect to find that:

H₆: Consumer perceptions of the advantages of avoiding salespeople and gaining ease of browsing for VWEP environments will be significantly higher than those for retail environments, and significantly lower than those for e-tail environments.

Consumer perceptions regarding the utility of VWEP environments may differ based upon experience or familiarity levels. For example, prior experience has been established as a predictor of subjects’ perceptions of a technology ease of use and usefulness. Virtual worlds have a steep learning curve (Kock 2008), and thus it is likely that experience will play an even stronger role as a predictor of ease of use and useful perceptions. These perceptions will in turn influence consumers’ perceptions of the utility of VWEP environments. Thus, we expect to find that:

H₇: Consumer perceptions of the advantages in VWEP environments will differ based upon level of prior experience.

STUDY 2 (QUANTITATIVE)

Method

The goal of this study was to determine the efficacy of our conceptual model by ranking the advantages from the first study for the average consumer. Thus, based on the information obtained in the first qualitative study, we used a survey methodology to obtain consumer preferences for these three environments.

Sample and Procedures

Data were collected from 89 undergraduate and graduate business school students; 49 were male, and 40 were female. The average age of the subjects was 25 years. Students were introduced to virtual-world technology through a short written description and video demonstrating the use of virtual worlds for commerce purposes (Table 2). Providing descriptions of emerging technologies has been successfully used in prior IT research focused on emerging technologies (Sheng, Nah, and Siau 2008). Following the introduction, each student was presented with three scenarios describing a shopping experience with a friend involving the purchase of a gift for another close friend (Babin, Gonzalez, and Watts 2007). We did not specify the type of product, so that subjects could imagine purchasing any product they saw fit as a gift. We chose to make the product a gift in order to reduce the self-relevancy or personal preferences of the consumers as they go through the scenarios. The only difference among the scenarios was the environment the shopping experience would be conducted in (i.e., virtual world, retail, and e-tail). The advantages that were found in Study 1 were listed using a Likert type scale with this statement: "Regarding the [E-commerce (Internet shopping)/Virtual World/Retail Environment], please rate your views about these aspects of shopping in this environment, does it provide these advantages?" followed by a 9-point scale anchored by strongly disagree/strongly agree. Thus, this set of advantages was chosen three times per subject in a within-subject design. Familiarity or prior experience was measured with the single 9-point item "How familiar were you with [virtual worlds/retailing environments/e-tailing environments] before you participated in this study?," with "not at all familiar" and "very familiar" as the endpoints (Johnson and Russo 1984). Order effects were avoided by counterbalancing the scenarios. Immediately following each scenario, subjects were asked to respond to a series of questions designed to address the hypothesized relationships.

Analysis

A mixed-design analysis of variance (ANOVA) was used to analyze the data. Channel (i.e., virtual world, retail, and e-tail) was entered as a within-subjects repeated variable. To assess whether the perceptions across level of experience differed, prior experience (familiarity) was then entered as a between-subjects variable. When a significant channel \times prior experience interaction was encountered, pairwise comparisons were used to evaluate the difference among the participants across the three channels.

TABLE 2
Study 2 Virtual-World Stimulus

Scenario	Text provided in survey
Written description of virtual world	<i>The following is a description of a popular virtual world. Please carefully read the description and then consider the three scenarios that follow.</i> <i>Second Life® is a 3-D virtual world created by its Residents. Since opening to the public in 2003, it has grown explosively and today is inhabited by millions of Residents from around the globe. Some experts have predicted that by the year 2011, ~80% of active Internet users will have a “Second Life” in one of the many available virtual worlds. Others predict that a 3D Internet will eventually dominate the e-commerce environment. Second Life, as well as other similar virtual worlds, provides participants with the ability to interact with the environment and other participants as 3D avatars using voice, chat, and gestures. From an e-commerce perspective, virtual world participants can interact with 3D products, and in many cases, gain valuable product information from in-world salespersons or “virtual concierges”. Publicly available virtual worlds such as Second Life currently support millions of US dollars in monthly transactions. This commerce is handled with the in-world unit of trade, the Linden™ dollar, which can be converted to US dollars at several thriving online Linden dollar exchanges.</i>
Scenario presented for shopping	Imagine that you and your best friend Sam need to purchase a gift for a close friend by the end of May. You and Sam were originally planning to buy the gift at your local retail store. However, since you and Sam recently discovered Second Life, a 3D virtual world , you decide to purchase the gift in that environment instead. Assume today is May 3rd, 2009 .
Description of virtual world video	Subjects viewed a video providing an overview of Second Life as a virtual world environment capable of supporting social, collaborative, and commerce activities. While many videos on Second Life are available on the Internet, the particular video used for the study was selected because of its detailed description on how virtual worlds can be leveraged for real-world commerce activities.

Results

Table 3 depicts the means and standard deviations, as well as the within-subjects ANOVA results. The within-subject ANOVA results for the main effect of channel were significant for all of the relationships. The within-subject ANOVA results for the interactions between channel and prior experience were significant for atmosphere, social, and personal/adaptive. Tables 4, 5, and 6 depict the pairwise comparisons for the significant interactions.

Test of H_1

H_1 proposed that consumer perceptions of the advantages of store atmospherics in VWEP environments would be significantly higher than for e-tail environments and significantly lower than for retail environments. The within-subjects effect was significant, $F(2, 86) = 61.512$, $p < .000$, $\eta^2 = .414$. Store atmospherics in VWEP environments were rated significantly higher than for e-tail environments ($M_{dif} = .794$, $p < .05$), and significantly lower for than retail environments ($M_{dif} = -2.239$, $p < .001$). Thus, H_1 was supported.

TABLE 3
Study 2 Quantitative Results

Experience	Variable	n	Means and SD		Tests of within-subjects effects			
			M	SD	df	F	p	η^2
Low	Atmosphere	89			2, 86	61.512	.000	.414
	Virtual world		4.951	.238				
	Retail		7.190	.177				
	E-commerce		4.157	.240				
	Atmosphere × experience	89			2, 86	4.458	.013	.049
High	Virtual world	44	4.289	.230				
	Retail		7.267	.083				
	E-commerce		4.222	.229				
Low	Social	89			2, 86	76.021	.000	.466
	Virtual world		4.436	.241				
	Retail		6.592	.189				
	E-commerce		3.171	.203				
	Social × experience	89			2, 86	7.544	.001	.080
High	Virtual world	44	3.622	.339				
	Retail		6.867	.266				
	E-commerce		2.956	.286				
Low	Personal/adaptive	89			2, 86	101.595	.000	.535
	Virtual world		4.243	.245				
	Retail		7.066	.187				
	E-commerce		2.978	.224				
	Personal/adaptive × experience	89			2, 86	3.703	.027	.041
High	Virtual world	44	3.600	.345				
	Retail		7.156	.263				
	E-commerce		2.978	.315				
Low	Time saving/convenience	89			2, 86	20.197	.000	.192
	Virtual world		4.886	.349				
	Retail		6.977	.266				
	E-commerce		2.977	.318				
	Convenience × experience	89			2, 86	1.458	.236	.017
	Switching costs	89			1.87,	3.179	.029	.041
					86*			

(Continued)

TABLE 3
Continued

Experience	Variable	n	Means and SD		Tests of within-subjects effects			
			M	SD	df	F	p	η^2
	Virtual world		5.700	.235				
	Retail		6.146	.198				
	E-commerce		6.462	.223				
	Switching costs × experience	89			1.87, 86*	.444	.629	.005
	Avoiding salespeople	89			2, 86	43.885	.000	.335
	Virtual world		6.419	.243				
	Retail		4.708	.239				
	E-commerce		7.742	.221				
	Avoiding sales × experience	89			2, 86	.605	.547	.007

*Greenhouse–Geisser correction due to significant Mauchly’s test for sphericity.

Test of H₂

H₂ was supported. H₂ proposed that consumer perceptions of the advantages of social experience would be significantly higher in VWEP environments than for e-tail environments, and significantly lower than for retail environments. The within-subjects effect was significant, $F(2, 86) = 76.021, p < .000, \eta^2 = .466$. Social experiences in VWEP environments were rated significantly higher than for e-tail environments ($M_{dif} = 1.265, p < .001$), and significantly lower than for retail environments ($M_{dif} = -2.156, p < .001$).

Test of H₃

H₃ was supported. H₃ proposed that consumer perceptions of the advantages of personal/adaptive selling would be significantly higher for VWEP environments than for e-tail environments, and significantly lower for retail environments. The within-subjects effect was significant, $F(2, 86) = 101.595, p < .000, \eta^2 = .535$. Social experiences in VWEP environments were rated significantly higher than for e-tail environments ($M_{dif} = 1.265, p < .001$), and significantly lower than for retail environments ($M_{dif} = -2.823, p < .001$).

TABLE 4
Study 2 Pairwise Comparisons for Atmospherics

Familiarity	Advantage		Mean difference (M_{dif}) in atmosphere		
				SE	p
Low	Virtual world	Retail	-2.978	.385	.000
	Virtual world	E-commerce	0.067	.415	.998
	Retail	E-commerce	3.044	.396	.000
High	Virtual world	Retail	-1.500	.389	.001
	Virtual world	E-commerce	1.523	.420	.001
	Retail	E-commerce	3.023	.400	.000

TABLE 5
Study 2 Pairwise Comparisons for Social

Familiarity	Advantage		Mean difference (M_{diff}) in		
			social	SE	<i>p</i>
Low	Virtual world	Retail	-3.244	.435	.000
	Virtual world	E-commerce	0.667	.365	.198
	E-commerce	Retail	3.911	.380	.000
High	Virtual world	Retail	-1.068	.440	.051
	Virtual world	E-commerce	1.864	.369	.000
	Retail	E-commerce	2.932	.385	.000

Test of H_4

H_{4a} proposed that consumer perceptions of the advantages of time savings and convenience in VWEP environments would be significantly higher than for retail environments and significantly lower than for e-tail environments. The within-subjects effect was significant, $F(2, 86) = 20.197$, $p < .000$, $\eta^2 = .192$. Convenience and time saving in VWEP environments were rated significantly lower than for both retail environments ($M_{diff} = -.856$, $p < .010$) and e-tail environments ($M_{diff} = -1.670$, $p < .001$). Thus, H_4 was only partially supported.

Test of H_5

H_5 proposed that consumer perceptions of the advantages of switching costs in VWEP environments would be significantly higher than for retail environments, and significantly lower for e-tail environments. The within-subjects effect was significant, $F(2, 86) = 3.197$, $p < .029$, $\eta^2 = .041$. Switching costs in VWEP environments were not rated significantly higher than in retail environments ($M_{diff} = -.446$, $p = .387$), but were rated significantly lower than in e-tail environments ($M_{diff} = -.763$, $p < .001$). Thus, H_5 is only partially supported.

Test of H_6

H_6 was supported. H_6 proposed that consumer perceptions of the advantages of avoiding salespeople and increasing the ease of browsing for VWEP environments will be significantly higher

TABLE 6
Study 2 Pairwise Comparisons for Personal/Adaptive

Familiarity	Advantage		Mean difference (M_{diff}) in		
			personal/adaptive	SE	<i>p</i>
Low	Virtual world	Retail	-3.556	.397	.000
	Virtual world	E-commerce	.622	.412	.352
	E-commerce	Retail	4.178	.430	.000
High	Virtual world	Retail	-2.091	.401	.000
	Virtual world	E-commerce	1.909	.417	.000
	Retail	E-commerce	4.000	.434	.000

than for retail environments, and significantly lower than for e-tail environments. The within-subjects effect was significant, $F(2, 86) = 43.885$, $p < .000$, $\eta^2 = .335$. Avoiding salespeople in VWEP environments was rated significantly higher than in retail environments ($M_{dif} = 1.712$, $p < .000$), and significantly lower than in e-tail environments ($M_{dif} = -1.323$, $p < .000$).

Test of H_7

H_7 proposed that consumer perceptions of the advantages in VWEP environments will differ based upon level of prior experience, or familiarity. The within-subjects effects were significant for the interactions of atmospherics \times experience, $F(2, 86) = 4.458$, $p < .013$, $\eta^2 = .049$, social experience \times experience, $F(2, 86) = 7.544$, $p = .001$, $\eta^2 = .080$, and personal adaptive \times experience, $F(2, 86) = 3.703$, $p < .027$, $\eta^2 = .041$. For the high-experience consumers, the advantages of the atmospherics were significantly different across all of the respective channels, while for the low-experience consumers there was no perceived advantage between the VWEP and e-tail environments. For the high-experience consumers the advantages of social experience were significantly different across all of the respective channels ($p = .051$ for the VEWP and retail comparison), while for the low-experience consumers there was no perceived advantage between the VWEP and e-tail environments. Finally, for the high-experience consumers, the advantages of personal/adaptive were significantly different across all of the respective channels, while for the low-experience consumers there was no perceived advantage between the VWEP and e-tail environments. Thus, H_7 was only partially supported.

DISCUSSION

Summary and Discussion of Findings

This research contributes to the promotions and advertising, marketing, and information systems (IS) literatures in several ways. First, this study introduced the concept of VWEP—a virtual-world promotional experience capable of supporting the advantages of both retail and e-tail. Qualitative and quantitative results revealed that the advantages of VWEP in comparison with retail and e-tail differed in several instances based upon the experience level of participants. For example, for high-experience participants, the advantages of store atmospherics, social experience, and personal/adaptive selling were significantly higher in VWEP environments than for e-tail environments. These results suggest that experienced virtual-world users perceive that these advantages, while still somewhat inferior to the retail shopping experience, are superior to those provided by the e-tail shopping experience. The low-experience participants, although ranking the advantages of store atmospherics, social experience, and personal/adaptive selling in virtual worlds lower than those in retail environments, did not differentiate these advantages between the virtual world and e-commerce shopping channels. This latter finding occurred despite exposure to a video and text-based description of commerce in virtual worlds. This particular finding has important implications for conducting future research, as it appears that scenario-based studies may not be sufficient for evaluating VWEP consumption when subjects have limited prior experience with virtual worlds. Thus, researchers may need to either preselect

subjects, or expose participants to virtual-world technology prior to their studies. Based on this logic, an important question for future research endeavors is, how long must participants become immersed in virtual worlds before their perceptions regarding the technology are altered?

Limitations

Before discussing the managerial implications and future research opportunities, certain limitations must be noted. First, while the mixed qualitative/quantitative methodology was appropriate for our exploratory investigation, we note that it lacked the control normally associated with a purely experimental design. Future research should expand upon our initial efforts to understand virtual-world consumer behavior by conducting carefully designed experimental research, within virtual-world environments if at all possible. Second, our sample consisted of a mix of undergraduate and graduate business students. These students represented an appropriate sample as they are frequent consumers of products and services in retail and e-tail environments. In addition, the sample consists of both high- and low-experience VWEP consumers, and heavy users of technology. Nonetheless, future research should reexamine our findings using virtual-world users of varying demographics in order to increase external validity and generalizability of findings. Finally, we acknowledge the limitations of our mixed-design ANOVA. Prior experience was measured using a Likert-type 9-point scale and was dichotomized to facilitate its use as a between-subjects variable. While splitting the sample in this manner may have resulted in a loss of information, it was the best option available, given the research questions and associated study design. Future research should employ designs that can address this limitation.

Managerial Implications and Future Research

Our results suggest that virtual-world designers should focus on the development of features capable of providing an in-world promotional experience that provides the advantages of both retail and e-tail. Enhancing these features will allow virtual world vendors to purvey products in such a way that consumers will be drawn to this new medium as a method superior to other shopping channels that provide only one set of advantages. Virtual-world marketers should also focus on the provision of a mixed-experience environment. In addition, care should be taken to market virtual worlds as something beyond what the Internet currently provides, in order to help inexperienced users recognize the advantages of VWEP over e-tail. Finally, those who sell and operate virtual worlds should encourage the participation of new users so that they can gain valuable experience with the technology that will allow them to more easily differentiate VWEP from other shopping channels. Extant research shows that new users (called “newbies”) in virtual communities form connections to the community while trying to gain knowledge, creating a reciprocity and commitment cycle to the community (Wasko and Faraj 2005; Bagozzi and Dholakia 2006; Mathwick, Wiertz, and Ruyter 2008). Our findings build on the idea of social capital in virtual worlds, since we find that as experience with VWEP increases, individuals more clearly differentiate the advantages of the environment over other shopping channels. In-world contests, real-world events, or other forms of encouraging social participation may be ways to actively increase the use of virtual worlds.

Future research can explore brand communities in virtual worlds, such as how participation influences the likelihood of consumption in VWEP (Algesheimer, Dholakia, and Herrmann 2005) and how to gather information from them for personalization and customization of the consumer VWEP experience (Arora et al. 2008). In addition, entrepreneurship in virtual worlds, that is, the type of businesses that should participate in order to gain market share based on their retail and e-tail presence, is another avenue for interesting research. Similar to how Wolfenbarger and Gilly (2003) identify an *eTailQ* scale to measure the quality of a website, future research can determine success factors and metrics for VWEP sites. Finally, researchers can study the impact of VWEP activity as it relates to both e-tail and retail, when firms participate in all three, much as is done in studies of how e-tail impacts retail (Biyalogorsky and Naik 2003).

CONCLUSIONS

Gartner Research suggests that by the year 2011, 80 percent of Internet users (and Fortune 500 companies) will be actively engaged in some form of virtual-world technology (BusinessWire 2007); however, Gartner also suggests that 90 percent of virtual-world projects will fail within the first 18 months (Gartner 2008). Such statistics support the notion that virtual worlds are becoming increasingly widespread, yet very little is known about how to successfully utilize these environments for business purposes. We believe that to truly understand this new environment that bridges the advantages of disparate shopping channels, and thus disparate theoretical perspectives, research that combines inductive and deductive methodologies will be most effective as it allows researchers to better identify where and how data should be collected. Efforts based upon reviews of the existing literature should be augmented with research that goes beyond preconceived notions of how commerce should be conducted in virtual-world environments.

There is little question that virtual worlds are an important technological innovation that is expected to grow in popularity. Practitioners and academics must pay close attention to this new technology, as it is sure to play a critical role in many facets of organizational functioning in the future. We hope that our research has raised awareness in at least one of these facets, virtual world experiential promotion (VWEP).

REFERENCES

- Ailawadi, K., J. Beauchamp, N. Donthu, D. Gauri, and V. Shankar. 2009. "Communication and Promotion Decisions in Retailing: A Review and Directions for Future Research." *Journal of Retailing* 85 (1): 42–55.
- Algesheimer, René, Utpal M. Dholakia, and Andreas Herrmann. 2005. "The Social Influence of Brand Community: Evidence From European Car Clubs." *Journal of Marketing* 69 (3): 19–34.
- Arnold, Mark J., and Kristy E. Reynolds. 2003. "Hedonic Shopping Motivations." *Journal of Retailing* 79 (2): 77–95.
- Arora, N., X. Dreze, A. Ghose, J. Hess, R. Iyengar, B. Jing, Y. Joshi, V. Kumar, N. Lurie, S. Neslin, S. Sajeesh, M. Su, N. Syam, J. Thomas, and Z. Zhang. 2008. "Putting One-to-One Marketing to Work: Personalization, Customization, and Choice." *Marketing Letters* 19 (3–4): 305–21.
- Babin, Barry J., Christine Gonzalez, and Christina Watts. 2007. "Does Santa Have a Great Job? Gift Shopping Value and Satisfaction." *Psychology and Marketing* 24 (10): 895–917.
- Bagozzi, Richard P., and Utpal M. Dholakia. 2006. "Open Source Software User Communities: A Study of Participation in Linux User Groups." *Management Science* 52 (7): 1099–115.
- Biyalogorsky, Eyal, and Prasad Naik. 2003. "Clicks and Mortar: The Effect of On-Line Activities on Off-Line Sales." *Marketing Letters* 14 (1): 21–32.

- Brady, Michael K., and J. Joseph Cronin, Jr. 2001. "Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach." *Journal of Marketing* 65 (3): 34–49.
- Burke, Raymond R. 1997. "Do You See What I See? The Future Of Virtual Shopping." *Academy of Marketing Science Journal* 25 (4): 352–60.
- BusinessWire. 2007. "Gartner Says 80 Percent of Active Internet Users Will Have A 'Second Life' in the Virtual World by the End of 2011." Accessed June 8, 2009. http://www.businesswire.com/portal/site/google/index.jsp?ndmViewId=news_viewandandnewsId=20070424006287andandnewsLang=en.
- Castronova, E. 2005. *Synthetic Worlds: The Business and Culture of Online Game*, 2nd ed. Chicago, IL: University of Chicago Press.
- Childers, Terry L., Christopher L. Carr, Joann Peck, and Stephen Carson. 2001. "Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior." *Journal of Retailing* 77 (4): 511–35.
- Cho, Chang-Hoan, and HyoungKoo Khang. 2006. "The State of Internet-Related Research in Communications, Marketing, and Advertising: 1994–2003." *Journal of Advertising* 35 (3): 143–63.
- Cox, Anthony D., Dena Cox and Ronald D. Anderson. 2005. "Reassessing the Pleasures of Store Shopping." *Journal of Business Research* 58 (3): 250–59.
- Dholakia, Ruby Roy, and Outi Uusitalo. 2002. "Switching to Electronic Stores: Consumer Characteristics and the Perception of Shopping Benefits." *International Journal of Retail and Distribution Management* 30 (10): 459–69.
- Drumwright, Minette E., and Patrick E Murphy. 2009. "The Current State of Advertising Ethics." *Journal of Advertising* 38 (1): 83–107.
- Fuller, M., A. Hardin, and C. Scott. 2007. "Individual, Group, and Organizational Level Inhibitors and Accelerators for Virtual World Technology Adoption and Diffusion." *Database for Advances in Information Systems* 38 (3): 40–44.
- Gartner. 2008. "Gartner Says 90 Per Cent of Corporate Virtual World Projects Fail Within 18 Months." Accessed June 8, 2009. <http://www.gartner.com/it/page.jsp?id=670507>.
- Godes, D., E. Ofek, and M. Sarvary. 2009. "Content vs. Advertising: The Impact of Competition on Media Firm Strategy." *Marketing Science* 28 (1): 20–35.
- Grewal, Dhruv, Gopalkrishnan Iyer, and Michael Levy. 2004. "Internet Retailing: Enablers, Limiters and Market Consequences." *Journal of Business Research* 57 (7): 703–13.
- Guiry, Michael, Anne W. Mägi, and Richard J. Lutz. 2006. "Defining and Measuring Recreational Shopper Identity." *Academy of Marketing Science. Journal* 34 (1): 74–83.
- Ha, Hong-Youl. 2005. "The Relationships Between 3-D Advertisings and Risk Perceptions on the Web: The Role of Brand and Emotion." *Journal of Current Issues and Research in Advertising* 27 (2): 55–66.
- Johnson, Eric J., and J. E. Russo. 1984. "Product Familiarity and Learning New Information." *Journal of Consumer Research* 11 (June): 542–50.
- Kiecker, Pamela, Kay M. Palan, and Charles S. Areni. 2000. "Different Ways of 'Seeing': How Gender Differences in Information Processing Influence the Content Analysis of Narrative Texts." *Marketing Letters* 11 (1): 49–65.
- Klein, Lisa R. 2003. "Creating Virtual Product Experiences: The Role of Telepresence." *Journal of Interactive Marketing* 17 (1): 41.
- Ko, Hanjun, Chang-Hoan Cho, and Marilyn S. Roberts. 2005. "Internet Uses and Gratifications: A Structural Equation Model of Interactive Advertising." *Journal of Advertising* 34 (2): 57–70.
- Kock, N. 2008. "E-Collaboration and E-Commerce in Virtual Worlds: The Potential of Second Life and World of Warcraft." *International Journal of e-Collaboration* 4 (3): 1–13.
- Krishen, Anjala, M. Bui, and Paula Peter. 2010. "Kiosk Retailing Environments: Exploring the Role of Regret and Variety on Consumer Behavior." *International Journal of Retail and Distribution Management* 38(3): 173–89.
- LaTour, Kathryn A., Lewis P. Carbone, and Suzie Goan. 2008. "Managing Hospitality Experiences: Las Vegas Style." In *Memorable Customer Experiences: A Research Anthology*, edited by A. Lindgreen, J. Vanhamme and M. Beverland, 177–94. Surrey, England, UK: Gower Publishing.
- Lee, Leonard, and Dan Ariely. 2006. "Shopping Goals, Goal Concreteness, and Conditional Promotions." *Journal of Consumer Research* 33 (1): 60–70.
- Mathwick, Charla, Naresh Malhotra, and Edward Rigdon. 2001. "Experiential Value: Conceptualization, Measurement and Application in the Catalog and Internet Shopping Environment." *Journal of Retailing* 77 (1): 39–56.
- Mathwick, Charla, Caroline Wiertz, and Ko De Ruyter. 2008. "Social Capital Production in a Virtual P3 Community." *Journal of Consumer Research* 34 (April): 832–49.
- May, Eleanor G. 1989. "A Retail Odyssey." *Journal of Retailing* 65 (3): 356.

- Mennecke, Brian E., William D. Terando, Diane J. Janvrin, and William N. Dilla. 2007. "It's Just a Game, or Is It? Real Money, Real Income, and Real Taxes in Virtual Worlds." *Communications of the Association for Information Systems* 20: 371–78.
- Menon, Kalyani, and Laurette Dubé. 2000. "Ensuring Greater Satisfaction by Engineering Salesperson Response to Customer Emotions." *Journal of Retailing* 76 (3): 285–307.
- Menon, Kalyani, and Laurette Dubé. 2004. "Service Provider Responses to Anxious and Angry Customers: Different Challenges, Different Payoffs." *Journal of Retailing* 80 (3): 229–37.
- Menon, Satya, and Barbara Kahn. 2002. "Cross-Category Effects of Induced Arousal and Pleasure on the Internet Shopping Experience." *Journal of Retailing* 78 (1): 31–40.
- Moe, W. 2003. "Buying, Searching, or Browsing: Differentiating Between Online Shoppers Using In-Store Navigational Clickstreams." *Journal of Consumer Psychology* 13(1–2): 29–40.
- Monsuwe, Tonita Perea y, Benedict G. C. Dellaert, and Ko de Ruyter. 2004. "What Drives Consumers to Shop Online? A Literature Review." *International Journal of Service Industry Management* 15 (1): 102–21.
- Novak, Thomas P., Donna L. Hoffman, and Yiu-Fai Yung. 2000. "Measuring the Customer Experience in Online Environments: A Structural Modeling Approach." *Marketing Science* 19 (1): 22–42.
- Park, S. R., F. Nah, D. DeWester, B. Eschenbrenner, and S. Jeon. 2008. "Virtual Worlds Research: Consumer Behavior in Virtual Worlds." *Virtual Worlds Research* 1 (2): 1–18.
- Porter, M. E. 2001. "Strategy and the Internet." *Harvard Business Review* March: 63–78.
- Ranchod, A. 1988. "Advertising Into the Next Millennium." *International Journal of Advertising* 17(4): 427–46.
- Reynolds, Kristy E., and Mark J. Arnold. 2000. "Customer Loyalty to the Salesperson and the Store: Examining Relationship Customers in an Upscale Retail Context." *Journal of Personal Selling and Sales Management* 20 (2): 89–98.
- Russell, Cristel Antonia, and Christopher P. Puto. 1999. "Rethinking Television Audience Measures: An Exploration Into the Construct of Audience Connectedness." *Marketing Letters* 10 (4): 393–407.
- Schlosser, Ann E. 2003. "Experiencing Products in the Virtual World: The Role of Goal and Imagery in Influencing Attitudes Versus Purchase Intentions." *Journal of Consumer Research* 30 (2): 184–98.
- Sheng, H., F. Nah, and K. Siau. 2008. "An Experimental Study on Ubiquitous Commerce Adoption: Impact of Personalization and Privacy Concerns." *Journal of the Association for Information Systems* 9 (6): 344–76.
- Sicilia, Maria, Salvador Ruiz, and Jose L. Munuera. 2005. "Effects of Interactivity in a Web Site." *Journal of Advertising* 34 (3): 31–44.
- Spiggle, Susan. 1994. "Analysis and Interpretation of Qualitative Data in Consumer Research." *Journal of Consumer Research* 21 (December): 491–503.
- Stewart, David W., and Paul A. Pavlou. 2002. "From Consumer Response to Active Consumer: Measuring the Effectiveness of Interactive Media." *Academy of Marketing Science Journal* 30 (4): 376–96.
- Tractinsky, Noam, and Oded Lowengart. 2007. "Web-Store Aesthetics in E-Retailing: A Conceptual Framework and Some Theoretical Implications." *Academy of Marketing Science Review* 11 (1): 1–18.
- Wasko, Molly, and Samer Faraj. 2005. "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice." *MIS Quarterly* 29 (1): 35–58.
- Weitz, Barton A., Harish Sujan, and Mita Sujan. 1986. "Knowledge, Motivation, and Adaptive Behavior: A Framework for Improving Selling Effectiveness." *Journal of Marketing* 50 (4): 174–91.
- Wolfenbarger, Mary, and Mary C. Gilly. 2003. "eTailQ: Dimensionalizing, Measuring and Predicting Etail Quality." *Journal of Retailing* 79 (3): 183–98.
- Xiao, B., and I. Benbasat. 2007. "E-commerce Product Recommendation Agents: Use, Characteristics, and Impacts." *MIS Quarterly* 31 (1): 137–209.