

**Virtual Worlds and Real-Life Organizations:
A Study of the Perspectives of Executives**

ABSTRACT

Virtual worlds have become sizable marketplaces and appear to be maturing into legitimate business tools for certain organizations. While treatment in the popular press of the organizational role of virtual worlds is often favorable, there also appears to a significant amount of caution in the organizational adoption of virtual environments. Since there is a dearth of academic literature on this emerging topic, this research aims to provide an assessment of the potential impact of virtual worlds on businesses, and to tie these insights to existing streams of information systems research. To capture the business discourse relating to virtual worlds, we analyzed the written reports of twenty-five executives who recently spent considerable time training in and exploring Second Life, a popular on-line virtual environment. We identify nine tensions in their assessment of the organizational role of virtual worlds, and situate these tensions in the prevailing computer-mediated communication discourse. Findings point toward an opportunity for theory generation through dialectical reasoning, as well as the potential for information systems research to act as a reference discipline for the budding literature on virtual organizing.

Keywords:

Virtual environment, virtual worlds, computer-mediated communication, business impact

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INTRODUCTION

According to industry estimates, revenue from virtual worlds such as Second Life (www.secondlife.com) exceeds \$1 billion (Castranova, 2005 p. 13). The subject of virtual worlds has been a persistent favorite among purveyors of the popular, business, and technology press in recent years. An abundance of stories exploring the prospects for growth and the long-term viability of these virtual environments have inundated the popular press (e.g., Anderson, 2006; Hemp, 2006; Hof, 2006; Kharif, 2007; McConnon & Jana, 2007). However, this coverage has been double-edged – ranging from effusive claims that virtual worlds are the future of social development and electronic commerce (Hemp, 2006; McConnon et al., 2007) to stern warnings against the hype of an untested marketplace (Rose, 2007; Rosmarin, 2007). Despite this popular inquiry into the business potential of virtual worlds and rising corporate exploration of these environments, research into the potential organizational impact of virtual worlds has only recently become a topic of interest (Bray & Konsynsky, 2007; Castranova, 2005; MacInnes, 2006).

The continued emergence and evolution of communication technologies over the past two decades, such as e-mail and the Internet, have helped organizations gain experience in assessing new technologies. These have provided organizations with the ability to radically change the way their members communicate within and across organizational boundaries – ultimately using these new technological advancements as tools for business value. However, the introduction of each of these technologies has brought with it a new set of tensions that organizations must address and reconcile in the effort to extract the true value potential of these

tools. These tensions arise out of the juxtaposition of what can be done with the technology (as determined by the developers and users) and the determination of what actions and affordances are in line with the objectives of the broader organization.

We argue that these tensions are pushing and pulling once again in the organizational assessment of virtual worlds. To understand how this newest technology can be fruitfully deployed, organizations must first determine how the capabilities of virtual world platforms might fit within their existing markets and organizational processes. Building upon these initial considerations, areas of concerns regarding the use of virtual worlds by organizational stakeholders (both internal and external) must be articulated. Finally, the dynamic tensions between capabilities and challenges that must be reconciled for the strategic value of such platforms to be understood. To date, research has provided little insight into these questions. The predominate focus of the academic community with respect to virtual worlds has centered on the technical features of these environments and their development or enhancement, with very little attention oriented to the underlying organizational value of such systems or even the relationship between the technical features and organizational processes. If the commercial potential of these technologies is to be sufficiently assessed, we must make space for the input of those responsible for organizational IT investment.

In the current study, we explore the assessment of business value associated with virtual worlds from the perspective of those in the trenches – organizational executives taking their cautious first steps into the environment of a contemporary virtual world. Specifically, we analyze the first hand experiences and perspectives of twenty-five senior-level executives as they consider the potential impact of virtual world technology for their real-world organizations, including both their assessments of potential organizational value as well as their perceived

impediments to such value. To establish a referential framework for this evaluation process, we draw upon the rich literature on computer-mediated-communication (CMC), highlighting the tensions that have surfaced with the introduction of earlier CMC technologies. This provides a foundation for understanding the opportunities and challenges perceived in the introduction of today's virtual world platforms. With this focus on the perspectives of experienced managers, we identify a number of key insights regarding the business impact of virtual worlds and the degree to which the current IT evaluation processes are similar to, and distinct from, those encountered with earlier Internet-based communications media.

The remainder of the paper is structured as follows. First, we introduce the concept of the virtual world and position the phenomenon within the context of other contemporary communications media. The next section provides a review of the relevant research literature, highlighting the tensions observed in the introduction and acceptance of earlier forms of CMC. Lastly, we describe our study of experienced managers and their experiences in the virtual world environment of Second Life.

VIRTUAL WORLDS

Virtual world is one of a number of terms used to characterize computer network-based virtual environments that are interactive, persistent, and multi-user (Bartle, 2004; Castranova, 2001). Within virtual worlds, *interactivity* is achieved by the development of a three-dimensional (3D) interface. Users engage the system through the creation and action of an avatar, a 3D embodiment of the user. *Persistence* reflects the fact that a virtual world continues to exist even when a given user is not engaged with the system – i.e., action within the world persists even when one is not accessing the platform. This persistence is critically related to the multi-user nature of the system. The term *multi-user* indicates that the environment is impacted

by a large number of distinct users simultaneously. The term shared environment is sometimes used to capture this same concept. Second Life, There.com, and Club Penguin are among the most widely cited prevailing virtual worlds.

The origin of contemporary virtual worlds can be traced to a number of related sources. To a large extent, contemporary virtual worlds are an outgrowth of advancements in online gaming. Indeed, the term Massively Multiplayer Online Role Playing Games (MMORPGs) is often used as a synonym for virtual worlds.¹ Today's MMORPGs, such as *World of Warcraft* and *Everquest*, are virtual worlds oriented around the conduct of a persistent game, but the earliest instantiations were text-based virtual environments for collective role playing games such as *Dungeons and Dragons*. The collaborative and communicative potential of these earlier gaming environments gave rise to the creation of MUDs (Multi-user dimension/domains/dungeons) and MOOs (Multi-User Object Oriented), which are text-based online environments dedicated to collaborative efforts and social interaction (Bruckman & Resnick, 1996; Curtis, 1997). These forms of interaction are more generally known as online communities. Thus, contemporary virtual worlds combine the social and community focus of the MUDs with the advancements in 3D interface design that have continued within the MMORPG environment.²

One of the most visible and widely-noted examples of a contemporary virtual world is the online platform called Second Life. The Second Life environment is the brainchild of Philip Rosedale, the founder and CEO of San Francisco-based software development firm Linden Lab, which hosts, manages, and governs the Second Life platform (Rymaszewski et al., 2006). While it is accurate to identify Linden Lab as the creator of the system, it is somewhat misleading

¹ The wide variety of terms continue to be used in place of virtual world, including immersive online environment, persistent state world, and MMORPG. In the current paper we have decided to follow the lead of (Castranova, 2001)Castranova, E. 2001. *Virtual Worlds: A First Hand Account of Market and Society on the Cyberian Frontier*. in using virtual worlds for the sake of parsimony.

² In today's context, MMORPGs might be properly considered a subset of virtual worlds – specifically ones which are structured around a distinct game.

because most of content within the virtual world is generated by its users. The platform was introduced to the public in 2003, following a brief six-month beta trial.

In 2006, the wider social recognition of Second Life surged in the wake of profiles of the platform in a wide range of popular publications, including *Business Week*, *Popular Science*, *Harvard Business Review*, *The Economist*, and *WIRED Magazine*. Currently, Second Life boasts nearly 12 million residents, or uniquely named avatars.³ However, this number includes multiple avatars created by a given real world user as well as individuals who have registered an avatar with Second Life but no longer access the system on a regular basis. A more telling statistic is that roughly 450,000 residents login to the platform on a weekly basis.

LITERATURE REVIEW

In the academic literature, the issue of virtual worlds is not entirely new. Virtual worlds may be couched within a robust stream of literature known as computer-mediated communication (CMC) which is rife with debate and a range of conflicting findings. Indeed, the topic of CMC within organizations has been one of the most hotly contested areas of research in the IS field. A new form of CMC often brings about a flurry of research activity so that it can be better understood. Past literature analyzing earlier Internet-based communication environments demonstrates how arguments both for and against the then-novel communication environments are developed (Culnan & Markus, 1987; Parks & Floyd, 1996; Walther, 1996).

To organize and frame the space which will hold the input of the executives responsible for organizational IT investment, we must initially consider the tensions observed within the broader discourse of CMC. There are a number of conflicting assertions or tensions related to the ways in which individuals behave when applying Internet-base communication media. These

³ All statistics were provided by Second Life (http://secondlife.com/whatis/economy_stats.php) and were accessed on January 14, 2008.

tensions include questions over the broader societal impact of use, the role of anonymity in user behavior, the applicability of these technologies to various categories of social actors, and issues associated with computer-mediated communication. Following, each of these will be briefly addressed.

Social Impact

Within the earlier analyses of Internet-based communication, we observe a distinct opposition between researchers who emphasize the beneficial potential of CMC for the expansion of social interaction and those who foresee the degradation of existing societal bonds. Research which supports the degradation perspective suggests that increased use of computer-mediated communications leads to a marked decrease in the interpersonal nature of communication efforts. With more widespread adoption of Internet-based communication, many scholars have warned against the decline of interpersonal discourse and community-mindedness as more and more human interaction is mediated by technology (Doheny-Farina, 1996; Putnam, 2000; Turkle, 1995). Kraut et al. (1998) effectively summarize this image of interpersonal withdrawal:

“Some scholars argue that the Internet is causing people to become socially isolated and cut off from genuine social relationships, as they hunker alone over their terminals or communicate with anonymous strangers through a socially impoverished medium.” (p. 1017)

A key element of this perspective is the belief that technology-based interaction would crowd out more personally intimate modes of human communication, such as face-to-face discussion and telephone conversation. In their widely cited exposition of the “Internet Paradox,” Kraut et al. (1998) found that Internet usage was associated with declines in family communication and other forms of social involvement, as well as increased incidence of

psychological stress and depression. Similarly, Nie and Erbring (2002) argued that communication with family and friends decreased significantly for regular users of the Internet – “the more time people spend using the Internet, the more they lose contact with their social environment” (p. 278). Other research has found that when the Internet is used to maintain a relationship with someone, it is often not a strong relationship. McQuillen (2003) states, “CMC may serve as a tool to encourage, permit, and assist in the development of interpersonal relationships; however, a relationship based solely on CMC will be significantly different from a relationship based on FtF. CMC relationships can be compared to interactions at a costume party.”

On the other hand, several scholars highlight the beneficial potential of Internet-based communication. A number of researchers have found that the Internet can serve as a jumping-off point for the establishment of personal relationships, which could be subsequently augmented through other channels of communication, such as telephone or face-to-face contact (Gibbs, Ellison, & Heino, 2006; Katz, Rice, & Aspden, 2001; Parks et al., 1996; Parks & Roberts, 1998). Indeed, some scholars argue that the Internet provides the basis for personal connections that rival or eclipse those established in traditional communication environments (Bruckman, 1992; Wilkins, 1991). Walther (1996) dubbed this phenomenon *hyperpersonal communication* – communication “that is more socially desirable than we tend to experience in parallel face-to-face interaction” (p. 17).

In perhaps the most telling counterpoint to a pessimistic perspective, in their follow-up to the “Internet Paradox” study (Kraut et al., 1998), Kraut et al. (2002) found that most of the negative outcomes documented in the earlier phase of the study had effectively dissipated over time. Recent research on social computing websites – a specific type of CMC which emphasizes

meeting others and sharing information about oneself – found usage of the websites provides social capital benefits, especially for users with low self-esteem or low life satisfaction (Ellison, Steinfield, & Lampe, 2007).

Anonymity

The question of anonymity has been one of the most prominent areas of disagreement within of the CMC debate. This tension centers around the contrast between the honest and uninhibited exchange of information that can result from anonymous situations and the potential for untrustworthy or socially distasteful behavior enabled by anonymity. From the positive perspective, several writers have suggested some inherent social benefits of the anonymity enabled by technology-based communication. By eliminating superficial characteristics such as race, gender, or physical disability, Internet-based communication may provide the basis for improved interpersonal interaction, because individuals can be judged based on the perceived value of their ideas without the threat of personal prejudices (Pool, 1983; Rheingold, 2000; Walther, 1996).

In the converse position, anonymity created by Internet technology can lead to inappropriate behavior because individuals feel they cannot be reprimanded or held accountable for their actions and statements (Alonzo & Aiken, 2004; Hiltz, Turoff, & Johnson, 1989; Lea, O'Shea, Fung, & Spears, 1992). In an early study of email behavior, Sproull & Kiesler (1986) saw a marked increase in the occurrence of detrimentally uninhibited behavior, such as “flaming,” in email vs. traditional exchanges.⁴ Similarly, users can be found on many websites behaving in ways they would presumably eschew in offline social situations, including the distribution of significant misinformation (e.g., what individuals are willing to post about

⁴ Sproull & Kiesler (1986) draw upon Steele et al. (1983) in defining flaming as the tendency to speak “rabidly or incessantly on an uninteresting topic or with a patently ridiculous attitude”

themselves in online dating websites). Scholars studying users of online dating sites have found significant discrepancies between what is posted and reality (Gibbs et al., 2006).

Social Actors

As with many technological innovations, Internet-based communication has been popularly associated with particular age cohorts or other demographic groupings. In particular, online communities and virtual worlds have been commonly assumed to be the almost-exclusive domain of teenagers or young adults and social misfits (Fine, 2002; Robinson, 2007). This assertion suggests that the broader social impact of such environments may be limited.

However, research on online communities suggests that such stereotypes are often unjustified – individuals of all ages participate in communities in which they are interested (Katz et al., 2001; Katz & Aspden, 1997).

In the same Kraut et al. (1998) study discussed above, the researchers observed that while Internet use affects teenagers and adults differently, controlling for age did not affect their main results of dissipating negative effects of Internet use over time and an overall positive use experience in terms of communication, social involvement, and well-being.

Computer-Mediated Communication

In addition to the tensions associated with the behavior of individual actors, the literature reflects a number of disagreements about the benefits and detriments that flow from the characteristics of the technology itself and the contexts of its use. For example, a number of issues can be observed around the degree of availability and interpersonal access enabled by Internet-based communications media – the ability to reach people across the geographic boundaries is balanced by the loss of privacy and the challenges of access requirements of the communication media.

Whether you are in California or Ireland, it is possible to find someone with similar interests via the Internet. Individuals are empowered to participate in communities based on personal interests rather than accepting the restrictions of geography (Finholt & Sproull, 1990). From this perspective, Internet-based communications are seen not as a driver of social isolation, but as a resource for social facilitation. Conversely, using technologies such as awareness systems can lead to a significant loss of privacy. Furthermore, organizations often block access to several types of communications environments at the workplace, especially when specific software has to be installed, for security or productivity purposes.

One of the central points of debate within the computer-mediated communication (CMC) literature focuses on the question of what a given technology allows users to experience in terms of depth of immersion. Indeed, *media richness theory* (MRT), one of the core theoretical foundations for the CMC discourse, is organized around this question (Daft & Lengel, 1986). MRT proposes that there are two main forces that influence the effectiveness of the communication processes: uncertainty and equivocality. Uncertainty is defined as the “absence of information” and it decreases as the amount of available information increases; whereas equivocality can be thought of as ambiguity due to “the existence of multiple and conflicting interpretations about an organizational situation” (Daft et al., 1986).

According to MRT, various communications media differ in the degree to which they support the resolution of ambiguity and multiple meanings. Communication channels that are higher in media richness are those in which new understandings can be established quickly. Communications media can be ranked with respect to the information richness that they support, with face-to-face communication identified as the gold standard of rich media and written documents holding the most diminished position. Ferry et al. (2001) states that a “rich medium

supports more complicated interaction by allowing: 1) verbal and visual cues in addition to written material, 2) the use of other facets of language, such as non-word sounds, 3) sending or receiving prompt feedback, and 4) a personal communication to take place” (p.69).

These criteria lead to certain media being considered “richer” than others due to their associated benefits. For example, a benefit of verbal and visual cues is they allow for other signals to be sent during the communication, such as the nodding of ones head would indicate a sense of agreement or that one is following the message; whereas a slight raise of the hand or tilt of the head could indicate to the communicator the need to pause and/or clarify. Other facets of the language or non-words would include signals such as a sigh or groan, which indicate a message of discontentment or boredom. Feedback capacity is the ability and timeliness of in-the-moment clarifications to be made. The aspect of personal communication incorporates emotion in to the communication process, such as facilitating feelings of kindness, trust, or even anger.

The foundational underpinnings of MRT rests on a media’s richness, which can be thought of as the extent these criteria are embodied in media. As outlined by Daft and Lengel (1986):

“Information richness is defined as the ability of information to change understanding within a time interval. Communication transactions that can overcome different frames of reference or clarify ambiguous issues to change understanding in a timely manner are considered rich. Communications that require a long time to enable understanding or that cannot overcome different perspectives are lower in richness. In a sense, richness pertains to the learning capacity of a communication.”

Much of the critique of Internet-based communications media reflect the assumptions of this theoretical perspective. The argument in this regard centers on the assertion that the social content of communication is reduced as less rich media take the place of traditional face-to-face

discussion. This is what Culnan and Markus (1987) have labeled the “cues filtered out” tradition – the reduction to non-verbal, text-based communication eliminates many of the social and behavioral cues that guide appropriate personal communication. This filtering results in communication that is depersonalized and task-oriented (Kiesler, Siegel, & McGuire, 1984; Rice, 1993; Sproull et al., 1986).

Yet, empirical support for the “cues filtered out” tradition has been mixed. A number of studies have found patterns of email use by professional colleagues that are inconsistent with the theoretical underpinnings of the “cues filtered out” lens (Rice & Love, 1987; Schmitz & Fulk, 1991). Furthermore, these theories have been persistently challenged with regard to their adequacy for explaining media choice (El-Shinnawy & Markus, 1997; Ngwenyama & Lee, 1997).

Many researchers have questioned the very assumptions that underlie the media richness argument. In the literature on group decision support systems (GDSS), the task orientation and elimination of interpersonal cues that result from CMC channels is framed as a positive outcome (Connolly, Jessup, & Valacich, 1990; Dennis, George, Jessup, Nunamaker, & Vogel, 1988). By increasing anonymity, a broader range of individuals is empowered to contribute to group discussions (Connolly et al., 1990). Thus, the elimination of physical cues related to status within a firm can create a *richer* discourse and improve organizational outcomes. In addition, a strong task orientation has been found to support greater work group efficiency (Smolensky, Carmody, & Halcomb, 1990). In this way, the positive or negative facets of impersonal communication within the workplace become a matter of perspective.

A point of debate that is closely related to the experiential tension outline above is the issue of social presence – the tension between the sense of social presence enabled by CMC and

the lack of social cues which these media have traditionally engendered. *Social presence theory* (SPT) (Short, Williams, & Christie, 1976) holds that communications media differ with respect to the social presence that they support. In this context, social presence is defined as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship” (p. 65). The degree to which an individual is aware of the interaction with another human being will change based on the social presence supported by various channels of communication. As with media richness, social presence theory places a premium on the experience of face-to-face communication.

In response to some of the “failings” of MRT in predicting media choice, there have been a number of alternate explanations proposed that can be aligned with the SPT school of thought (Short et al., 1976). Social presence can be thought of as the feeling by individuals communicating that they are engaged in a personal process. These personal feelings are typically attributed to the ability of the media to send/receive an increased numbers of codes (non-verbal and visual). The greater number of these codes/cues that can be transmitted, the more personal the messages become. SPT is similar to MRT in that MRT defines the ability to transmit cues as an aspect of media richness. However, the difference between the two approaches lies in how the cues are utilized; MRT implements the use of cues to increase understanding/feedback, while the focus of SPT and cue capacity is as a function of creating and building a personal connection.

As with MRT, universal empirical support for the social oriented theories have been mixed (Walther, 1992, 1995). One proposed reason for this is that most research involving social explanations has primarily focused on new media (Webster & Trevino, 1995). Another

possible explanation is that the introduction of social theories has further increased the complexity of attempting to explain the phenomenon (Carlson & Zmud, 1999).

RESEARCH METHODOLOGY

To explore the potential organizational impact of virtual worlds, we assigned a Second Life project to an Executive MBA class (Appendix A). The executives were asked to complete an initial training and orientation in Second Life, spend time in the world, and reflect upon the potential impact of virtual worlds such as Second Life on real-world organizations. The reflections received from participants included discussions of specific experiences within Second Life, personal perceptions and reactions to the environment, and extended discussions of what they saw as valuable or detrimental aspects of the platform and the associated behavior of individuals with respect to the objectives of a going concern.

The sample included twenty-five experienced managers, each with a minimum of ten years of work experience, although typical experience far exceeded ten years. Thirteen of the students were senior management (director/VP level or above). Table 1 provides descriptive information about the executive students. Time in the world ranged from 2 hours to over 100 hours over the course of the semester.

Insert Table 1 about here

Our analysis consisted of two rounds of coding of participant reflections around the research questions in the previous section. The first round involved note-taking and open coding in line with a grounded theory approach (Corbin & Strauss, 1990; Glazer & Strauss, 1967). In this initial process, we became immersed in the data and employed constant comparison to

identify persistent patterns in the experiences and perceptions of the participants. The second round of analysis involved selective coding (Corbin et al., 1990; Glazer et al., 1967) in an effort to capture the arguments in favor of the potential business impact of virtual worlds within organizations and those arguments against the potential business impact in the foreseeable future. To organize and display the data, we developed tables that Miles and Huberman (1994) describe as “conceptually ordered descriptive matrices.”⁵ Subsequent axial coding enabled us to identify and describe distinct tensions that were evident in the data.

Findings

From the analysis of the data, we identified nine clear tensions that arise within the arguments of the executives regarding the potential business impact of virtual worlds. Table 2 provides a summary of these tensions and the arguments in favor of and against a legitimate or significant business impact of virtual world technology. Following, we will address each tension in turn.

 Insert Table 2 about here

Popularity

The popularity of Second Life was a critical point for many of the arguments in favor of the platform. Many executives cite statistics from the Second Life home page claiming there are over eleven million residents in the virtual world, with thirty to forty thousand typically in the world at any given time. With that many people together in one place, many executives thought that the potential for marketing was significant.

⁵ *Conceptually ordered descriptive* matrices are used to order qualitative data for subsequent clustering and partitioning

However, executives noted that many business-oriented Second Life locations enjoyed very little avatar traffic. They argued that the bulk of traffic in public spaces revolved around the adult content areas, or one of the many the areas where avatars could make money.⁶

Thus while there is undoubtedly a tremendous amount of traffic in certain locations of Second Life, executives found that this traffic was, in-fact, minimal at the locations where they would be comfortable representing their organizations.

“What also struck me, was that there wasn’t a lot of “people” at the legitimate business sites.” (Exec Director of IT Development)

“I navigated over time and noted that the amount of people and foot traffic at the storefronts was less than what I had anticipated. There appears to be a limit on the number of maximum visitors. When a sector or a product could only have limited exposure, this would severely limit the benefits of such a storefront.” (Medical Director)

“When I did find a legitimate business, it was not populated.” (Senior Vice President)

Also, Second Life was very small in relation to other social networking websites or Web 2.0 platforms:

“When we see that it has about 500,000 people who considered ‘active users’ and when compared to MySpace which had over a 106 million accounts according to an article... the exposure to the potential market is almost insignificant.” (Medical Director)

Beyond current popularity, many executives addressed issues relating to the projected growth of Second Life and any first mover advantages this growth may offer early adopters.

First-Mover

Much as the arguably significant current population of Second Life opened some eyes towards the medium’s relevance, the growth potential of Second Life and other similar virtual

⁶ In this context, “money” refers to Linden Dollars, the currency within Second Life.

worlds is staggering according to some estimates. Executives extrapolated past growth rates to the future and argued that organizations with an established, early footprint in virtual worlds will benefit more from exponential growth and will also learn the medium more intimately.

“They are not games, but are compelling, immersive and powerful tools to assist in collaboration, community development and innovation inside the enterprise. Although the embryonic nature of virtual worlds means that significant issues and obstacles are in the way of effective use by enterprises, the upside potential is so great that no enterprise can afford to ignore the opportunity. Enterprises must be cognizant of the issues, and limit their expectations in the short term.” (IT Business Leader)

Many of the executives drew parallels between Second Life and the explosive growth and pervasiveness of the Internet.

“It is possible to see parallels with the early development of the World Wide Web in the mid-1990s. If so, in the longer term no enterprise could afford to ignore this exciting new development.” (IT Business Leader)

On the other hand, a number of executives interpreted recent numbers to indicate that growth in the population had leveled off. Following are the calculations of two executives:

“While Second Life added 343,961 new registrations in September, to a total of 9.6 million, the 3.7 percent gain in sign-ups was the slowest monthly growth on record. Beyond this, the number of active Second Life users fell to 516,149, from 540,151 in August.” (Director Material Planning)

“I think there is somewhere around 10 million users Worldwide with only 570,000 of those active, which from what I can tell has kind of stagnated, and we are talking about a time frame of 4+ years. In terms of adoption and the internet, I would argue this is somewhat slow growth. If you take out the Universities/academics and students that are basically made to go to the site for projects I would guess that growth could actually be close to non-existent.” (Director Fixed Income)

Further, many executives indicated that although they predict that the idea of virtual worlds will eventually take root, it is far too premature currently and businesses will have ample

opportunity to take advantage of subsequent, more robust technologies. Regardless of whether the medium will have explosive growth or remain stable, there was a consistent characterization of the people who populate the virtual world.

Demographics

Many of the executives were quite consistent in their depictions of the demographic characteristics of residents in Second Life. The people behind the avatars were generally assumed to be young and technologically-savvy. In this sense, the medium (whether growing or not) provided an excellent mechanism for connecting with a hard-to-reach demographic groups. Also, executives occasionally indicated their surprise at how helpful and friendly avatars were.

“The other benefit SL may offer is better communication with younger generations (Gen-X, Gen-Y and later). They were raised on the Internet, text messaging, personalization, and instant gratification. SL could be one way to motivate this generation and extract the next innovations.” (Senior Vice President)

On the other hand, the flip-side of youth was immaturity, and the flip-side of technological savviness appears to be geekiness. People in Second Life were often considered degenerates, perverts, and antisocial individuals with too much time on their hands. Also, many executives indicated that they experienced a great deal of rude behavior in-world. Perhaps many of the demographic tensions of avatars in Second Life relate to the anonymity that avatars enable in this virtual world.

Anonymity

On the one hand, due to anonymity, many executives indicated that they might get more honest and uninhibited information from avatars. For example, in an initial job interview context, an executive suggested, “Possibly by providing the forum for a candidate to have their initial interaction with a virtual representative of the firm could provide an increased likelihood

of an open and frank meeting” (Director Material Planning). Such openness could also potentially drive innovation:

“...some promise of unlimited possibilities, and no real consequences for their actions, people can become less inhibited and more creative and about expressing their views and experiences in desired future states. An environment like this encourages new ideas and innovations —an opportunity for new problems to drive new solutions.” (Director of Marketing)

Or this openness could make focus groups more productive:

“SL could also provide insightful candid feedback on products, brand images, or advertising that a company would never be able to learn in a more formal setting of a focus group or anonymous responses of a survey.” (Senior Vice President)

However, while a health care professional thought that avatars might be more willing to discuss sensitive medical information in such a context, he indicated that “the biggest question in virtual medicine is going to be reliability of the provided information on Websites” (Medical Director). Interestingly, this executive asks, “Would you trust a virtual doctor?”

Anonymity, as discussed earlier, may also foster some antisocial behavior. First of all, anonymity is considered a likely contributing factor to the often alarming pornographic activity within Second Life. In the words of a program management executive, “In my 40 years of life I don’t think I have ever run into so many sexually-motivated characters” (Program Manager). Stories of sexually-oriented activity and rudeness abounded in the data. Executives reported a multitude of situations where they were harassed, stalked, and on one occasion, sexually violated. One executive indicated that he cannot see a way to control such activity, which greatly limited any significant conceivable role for the medium in organizations:

“In addition even if you filter out mature content, the risqué clothing, skin, and parts business is unbelievable so you are never safe from a flash of some body

part while walking through a Herman Miller studio or Caldwell Banker's HQ."
(Business Architect)

One executive highlighted the impact this may have on business:

"If we recommended our customers to use this site, and they subsequently were propositioned or mistreated in any way, I believe that our reputation would suffer irreparable damage." (Executive Director of IT Development)

Perhaps more importantly, anonymity evokes questions of trust. Anonymous avatars can readily misinform each other, again using the healthcare example, who would trust an avatar doctor for advice? Similar trust issues relate to the information one might acquire in Second Life, following are two perspectives from the data:

"The idea that one can represent oneself in any way makes it difficult for marketers to interpret the information. Many of these dreams will not represent realities and in some other instances these dreams represent escapes from reality. In this case one can be misled by people pretending to be who they are not. It is a challenge for organizations to decipher the information that is being presented and the character behind it." (Director of Marketing)

"[My organization] does not know who they are collaborating within SL. This could have risk of astronomical proportions. It is possible [my organization] could collaborate with a competitor, a federal prisoner, a 13 year old, or even a terrorist. Anonymity allows people to be freer with their feedback but there could be a large price to pay." (Senior Vice President)

Regardless of the role of anonymity, many executives pointed to the opportunities for social interaction as a fundamental reason for spending time in-world.

Sociality

Second Life enables individuals to present themselves and interact in an almost physical way.

"Virtual worlds offer an inexpensive, useful and immersive way of holding meetings, collaborating, and sharing information. Virtual worlds are creating the 21st century version of team workspaces and e-meetings. Companies like IBM

are already exploring this concept, having created a dedicated business unit to explore and exploit virtual world technology.” (IT Business Leader)

Executives indicated that this physical presence was critical to many of the organizational applications such as global product development. One executive indicated that since Second Life had a fairly distinct culture, complete with its own set of norms, it could facilitate cross-cultural interaction. This physical presence also appeared to be conducive to learning situations.

However, because of the limited social cues associated with social interaction, communication was fairly thin, weak, and could be better addressed through another medium. While for many business applications the social presence of multiple avatars was important, for many other applications the combination of the social and the immersive three-dimensional environment was the key to organizational appropriation of Second Life.

Experience

Fundamental to Second Life is the three-dimensional immersive environment, which ignited the imaginations of many executives.

“I would classify Second Life as a four-dimensional version of the Internet. The Internet, in general, provides users with a two-dimensional experience. Pictures are shown of products, but you can’t walk around the product or interact with the product. Second Life provides the user the ability to do both of these things.” (Business Development Executive)

For example, by readily creating objects, organizations can get feedback on new concepts with minimal cost and investment.

“Second Life provides a rich arena for customer research and feedback. Technically, It is cheaper and quicker to prototype many objects in SL than in the real life, and you can make modifications in front of the customer.” (Director of Human Resources)

“Second Life thus is a place where techie and design oriented people can go at little expense and determine what works that could perhaps be brought back into

the real world... Whether you're into fashion, finance or retail, Second Life provides a portal to test many ideas that might be useful in real life." (Operations Manager)

"Virtual medium can also allow for small companies with limited budget to build persistent structures for a small fee. This low barrier to entry into a market allows for an open platform for user-created content for potential customers." (Medical Director)

Further, the large-scale nature of Second Life affords the potential for virtual tours of new locations, facilities, and architectural options.

"An organization, such as a university could create a replicated visual environment of the campus that could be visited by potential students. This would be beneficial for a student to get a sense about the university during the narrowing down of his selection process." (Director of Accounting)

One executive described the virtual tour of the Cleveland Clinic's new facility that was arranged by a friend:

"[His friend] explained how the Clinic was providing virtual tours of the new Women's Health Center within Second Life as part of their capital campaign. She describe their sales pitch in comparison to the scene in the movie Blue Chips where Shaquille O'Neal visits the University and they announce his name over the loud speaker, there are cheerleaders shouting his name. The Clinic mocks up a section of the Health Center with the name and information of the donor so that they see what their donation will fund. [His friend] alluded to the Clinic having raised more than forty million dollars after they began using their Second Life site, however she also noted that this was consistent with their before Second Life development. "Second Life just provides us a sexier sales tool". (Director Advanced Technologies)

However, this immersiveness may be redundant to actual product testing, prototyping, and tours, as the environment is simply not entirely realistic, and individuals will want to see the "real thing" before making any valid decisions.

"There are simply the limitations to a virtual experience versus reality. Take as an example my company's solution, air conditioning controls. Second Life does nothing to add the user's experience of my product versus the Internet since the

user can't feel the cool breeze turning on and off. Even with more tangible products like cars, Second Life has limitations. Sure the car companies can generate a side revenue stream selling their cars to Second Lifers, but that is not their core capability nor could selling pixels ever rival the revenues from selling metal.” (Business Development Executive)

One executive indicated that to resolve this tension there must be some “research supporting customers’ willingness to make real world decisions based on game-like graphics” (Vice President of Marketing). Another indicated that when the going gets rough, the social medium will likely not be adequate for delicate social interaction:

“When virtual interaction may start to break down is when development moves beyond the modeling stage into commercial negotiations and further into physical installations...where people would necessarily need to have human-to-human interactions.” (Director Material Planning)

Of course, much of the interactivity and potential for Second Life depends on ready access to the environment.

Accessibility

The creation and use of an avatar in Second Life is free to all users and simply requires a straightforward application download. In this sense it is theoretically accessible to any individual with a PC and an Internet connection, which is central to the allure of the medium.

“The obvious benefit of SL is real-time collaboration. SL offers a way for hard-to-reach people to be accessible to anyone, with terms amenable to everyone... SL offers a less expensive and potentially more useful way to hold meetings, collaborate on problems or projects, and share information. SL could be the basis for creating a new type of virtual team workspaces.” (Senior Vice President)

“Large organizations with multiple locations could setup virtual meeting spaces for meetings and trainings. Everyone involved could create their own avatar. Everyone meets face to face in one location and get the same message at the same time.” (Quality Manager)

However, this universal access is an assumption that does not necessarily hold up in organizational reality. First, many organizations “lock down” personal computers in order to better manage their maintenance, thus making it difficult to install the download. Also, many organizations do not look kindly upon newer social networking sites, and often consider Second Life to be no more than a game.

“The fact is if it looks like a game, and smells like a game...then it is probably going to be perceived (and treated) as a game.” (Director Material Planning)

“At [his company] Second Life is a blocked site because it is considered a social site. Consequently, even if there were places that had commercial value, employees of a company couldn’t take advantage of it because they would not be able to log onto the site from a company computer or using the company network.” (Executive Director of IT Development)

“I believe Second Life fits into the Face Book category in many organizations, ‘it is something that means people won’t be doing their jobs’.” (Director Advanced Technologies)

“The commercial use of SL may severely be restricted due to rigorous internal security policies. [Her company], like many organizations, restricts the websites their employees can access. The firewall blocks SL. Also, SL requires a powerful computer and special software on the client to use it. [Her company] like most corporations locked down their laptops and desktops preventing any unauthorized software from being downloaded.” (Senior Vice President)

Although issues were discussed in the data about access, that is not where the issues associated with organizational use of Second Life ended. There was a tension evident relating to the interface of the system.

Interface

The interface of Second Life is intended to afford easy manipulation and customization of avatars, navigation of the environment, and communication. Features such as the ability to transport anywhere in seconds, for example, captured the imagination of a number of executives.

However, many users indicated that they found the interface difficult to deal with and their experiences were rife with technology problems. Usability was an issue particularly among the least technologically savvy executives who often they reported enlisting the help of their children or classmates to navigate the environment. However, there were usability concerns from the technically adept, as well:

“The first issue is the level of programming expertise required to really create within Second Life. My computer programming experience is not the greatest, but I am more experienced than the average user. Second Life requires a much higher level of talent than I possess to perform any really interesting functions. I would classify it as more significantly more difficult than HTML, the basis for the Internet during its boom.” (Business Development Executive)

All executives in the study did report eventually finding ways to navigate Second Life in fairly stable ways. Through this navigation, many had experiences relating to the sense of community within the world in general and in particular locations.

Structural

The structures within Second Life support the identification of avatars with specific communities.

“This is definitely a powerful tool for social networking as it is a much richer environment than a simple chat room just as my son has shown me with his Club Penguin experience.” (Manufacturing Planning Analyst)

Executives reported being aware of the culture of Second Life in general, and while this community was not always friendly to businesses in the world, there was a reported cohesiveness among experienced avatars.

“SL citizens believe to have created a heaven which they want to retain pure and keep from becoming commercialized and proliferated. Organizations entering this space need to consider that to gain acceptance they themselves need to be

aligned with the underlining vision that drives the community and avoid posing a threat to that lifestyle.” (Director of Marketing)

Similarly, in specific locations avatars gathered based on their mutual interests. One executive reported going to a video game community with his nephew when he got a “glimpse” of the potential for Second Life in organizations:

“I witnessed users meeting each other from all over the world and some examples of people selling their gaming secrets for L\$. It was a pretty cool experience to have and to get to see my thirteen year old nephew so excited about it I believe gave me a glimpse into Second Life’s future.” (Director Advanced Technologies)

While executives saw potential business value in segmenting individuals in such a way, many understood that in order to capitalize on these communities, they must sincerely become part of them rather than just get a message to them.

“By allowing customers to interact in this way, it also enables the fostering of a community: when people feel that they are being listened to, they become more invested in the company or product, and start to engage with others sharing the same interest. Thus, for applications where communication is important, such as sales, PR, training, or customer feedback sessions, using SL as the communication medium will improve the quality of the interaction.” (Principal)

Because of the open structures that allow such communities to form there was also the danger of jeopardizing an organizational message or consistency. If avatars representing a company were legitimate contributors to a community, the image portrayed by the avatar may not be consistent with the intentions of the company.

“While I can see some value to having meetings in Second Life, I would say that the risk of someone joking around and doing something inappropriate would be considerably increased due to the fact that in Second Life people seem a little more uninhibited. Thus, someone might change clothes during a meeting, much like someone did while I was attending an economic meeting. I found this to be distracting. During an office meeting I would find this to be inappropriate.” (Sales Manager)

Essentially, executives felt like they had less control of their organizational message in Second Life due to issues such as vandalism, for example.

“SL, like the internet in general, is a free forum and haven for hackers and griefers who can create havoc for an organization trying to conduct a legitimate lecture or other offering. In SL, there is little an organization can do to prevent the lewd fuzzy animals from appearing at your event, stop a helicopter crash into your building, or trash your trademark in a disparaging manner.” (Director of Accounting)

A solution that seems to address this tension in some ways is to purchase private property:

“This is the reason why most companies end up purchasing their own island, so they can have full control of the overall branding experience.” (Quality Leader)

One final note is that community membership necessarily implies that there are those outside of the community, and a number of executives reported feeling like an outsider. However one looks at the nature of communities in Second Life, it is important to note that these communities to have societal implications.

Social Benefit

Many executives described what they deemed to be the potential social benefits of a virtual world like Second Life. Possibilities of the virtual world included specific ideas such as virtual tourism, where individuals can interact with international avatars to broader, more idealistic notions such as freedom to express oneself. Perhaps the example with the greatest impact was the way a health care manager described how a person with a permanent neurological disorder may benefit from Second Life:

“Their minds are usually not affected. The great challenge for these folks is to come up with solutions to allow them the opportunity to interact with and become contributing members of society. Traditional approaches involving rehab and

assistive orthotics and prosthetics are limited in their ability to allow a return to functional life. Why not change the premise? Rather than asking their bodies to cope with a First Life, why not expand their minds virtually in a Second Life? I wonder if there could be some way to “hook up” patients with severe paralysis to a virtual world such as Second Life. There is some work being done on direct interfaces which allow an impulse sent from the brain to move simple mechanical objects. The controls to move around Second Life are fairly simple as well. Putting the two together may provide a novel solution to allow these people the freedom to roam about in cyberspace and interact in a way that is impossible in this physical world. There is something fundamentally empowering about the ability to move around at will. Surfing the internet on two dimensional web-pages is certainly not as engaging as flying through Second Life.” (Physician2)

On the other side of this appreciative view of the virtual world came a number of questions as to where we were heading. There were a number of references in the data to the movie “The Matrix” where all is virtual at the expense of our physical. Many executives felt that such virtual activity, even if it involved social interaction, was inferior to physical activity and interaction in-person.

“I do think that, like many of the other technological advancements (like e-mail), it will significantly reduce the amount of direct human contact.” (Sales Manager)

“I did not enjoy the experience of Second Life. I have not experienced enough of the things I want to experience in my first life to have time or desire to have another life in Second Life.” (Quality Manager)

“[An avatar] can have chats about endless subjects, some that you might not even have with your closest RL friend. Some might think that this is very beneficial, but in my opinion, if a person has that much time to invest, why not invest in the oh so many other useful activities and relationships that can be had in RL.” (Director of Accounting)

“The simple fact of the matter is that while I spent my youth outdoors playing any kind of sport imaginable, children today spend a similar amount of time indoors immersed in technology.” (Director Fixed Income)

Many executives appeared sincerely worried about the impact of such technologies on society. One executive indicated that she could not condone even the artificial violence of Second Life.

“I personally cannot condone any program that allows these activities. One can say that individuals need to take the responsibility for knowing right from wrong in real life; however, an individual is not always capable of doing this. Why potentially provoke disruptive behaviors, violence and crime?” (Vice President – Physician)

DISCUSSION

The data presented in this study reveals significant parallels between the perceptions of virtual worlds and those of earlier Internet-based communications media – both in terms of the opportunities acknowledged and the areas of concern raised. Drawing upon the points of continuity and discontinuity with previous waves of technology adoption and integration, we propose a number of key implications of this research for the both practicing managers and the research community.

Implications for Organizations

With regard to the role or value of virtual worlds for organizations, participants repeatedly emphasized the applicability for business functions previously highlighted in the early days of the World Wide Web, including marketing, training, and group collaboration. Among the study participants, marketing was the most widely-acknowledged opportunity for the application of virtual world technology. Due to the seemingly exponential growth of Second Life and other virtual worlds, participants perceived that these environments could offer firms an attractive avenue for generating increased brand awareness. As noted in our findings, this emergent market was perception was closely intertwined with assumptions about the demographic characteristics of the Second Life residents (e.g., young, technology savvy) and . In addition to the branding potential of the platform, several participants noted that such systems

could offer a unique mechanism for the collection of market intelligence and an improved understanding of customer preferences to inform subsequent marketing efforts.

While this development largely mirrors the rush to establish a corporate website and the consideration of “eyeballs” as a relevant marketing metric in the late 1990s, the current study suggests a possible maturation of the IT evaluation process. Executives may have taken some painful lessons from the experience of the dot.com investment bubble. Accordingly, they are not simply buying into the hype around virtual worlds. Rather they are applying a critical lens to claims made within the broader media coverage of these virtual environments, and raising challenging questions regarding the potential real impact on corporate profits.

This maturation of evaluation is also reflected in the acknowledgement that marketing within the context of a virtual world may demand skills and processes not currently present with a firm. Even among those who perceive the marketing potential of virtual worlds, there is a realization that the virtual world is not simply a 3D alternative to a bricks-and-mortar, or even web-based, showroom. The interest of virtual world residents must be actively courted and consistently reinforced if marketing objectives are to be achieved. This marks a departure from many of the perceptions around the marketing potential of early websites. Yet a number of practical questions remain: What are the new processes and marketing competencies required in a virtual world environment? How can firms justify their investment in virtual world marketing efforts, and tie them to the real world results of the firm?

A second area of consistent perceived value of virtual worlds is in the training and education for organizational members. The immersive nature of these platforms is seen as a natural fit for supporting the development of *virtual* hands-on training exercises without

incurring prohibitive travel expenses. Similarly, virtual collaboration and meeting is consistently assessed as potential opportunity within a virtual world. Team members can communicate and interact with each other in a way that mimics face-to-face interaction, without the limitations of geography.

Despite these areas of perceived benefit, one of the core underlying points of concern for the study participants is the question of control. In the case of marketing, executives question what safeguards can be put in place to ensure that organizational members can continue to exercise control over their brand image. Unlike traditional organizationally owned and operated web sites, organizations have few techniques available to them to increase traffic to this larger world, as the population of users is largely determined by Second Life's ability to attract users on an ongoing basis. As a result, while executives may become comfortable with the level of popularity of virtual worlds as a platform, they will also have to make assessments of the popularity of the vendors operating their platform, as well as forecast ongoing popularity of the particular virtual world operator. Even if an operator is going to be popular for an extended period of time, organizations must be aware of the risks of being tied to the provider and what goes on in the world. Similarly, in the case of training and virtual collaboration, how can an organization protect itself against the behavior of rogue residents and other malicious actors. Because they are delving into a persistent and open virtual environment, there are a number of risks that must be mitigated.

Implications for Research

Our findings also point to CMC literature as a potential body of work that enables information systems to be a foundational reference discipline for 21st century organizational

research in virtual spaces. A key implication of our research on executive perspectives of Second Life involves the degree to which claims and critiques generated largely in reference to early modes of Internet-based communication are relevant to the domain of virtual worlds. Many of the characteristics of prevailing Internet media that have been subject to critique (e.g., anonymity of actors, the relative absence of facial and vocal cues, physical isolation) remain in the context of a virtual world.

At the same time, communication in a virtual world is more synchronous than some earlier forms of CMC.⁷ As virtual worlds continue to evolve, many are experimenting with the adding technologies that increase the synchronicity of communication, such as added voice communication. The additions of these tools add to the potential research questions for this emerging technology. Questions such as “Will the inclusion of voice functionality eliminate some concerns with the impersonal nature of Internet-based communication?” and “Does synchronicity improve the perceived value of the communication medium?” are familiar to the CMC literature, yet in the context of these new immersive virtual worlds the answer could be quite different. While these questions remain outside the scope of the current research effort, they will be critical as the assessment of communication within virtual worlds continues.

From our review of the literature we uncovered a number of tensions including those relating to anonymity, social benefit, and social presence. We have identified similar tensions in executive assessments of Second Life, indicating that research in virtual worlds does, in fact, have a great deal in common with previous research in CMC, and this body of work could potentially act as the reference literature for virtual world research in other areas, including economics and organizational behavior. While there has been much discussion of information

⁷ Clearly not all of the earlier Internet-based communication media were subject to the critiques of asynchronous communication. MUDs, MOOs, chat rooms, and instant messaging also reflect synchronous communication environments.

systems as a reference discipline (Wade et al 2006; Grover et al 2006) this work supports the notion that the rich body of CMC literature may have something to inform us about this new form of technology.

CONCLUSION

This research provides an initial framework of tensions that can be used for subsequent theorizing about virtual communities. While we do not claim that our categories are mutually exclusive or collectively exhaustive, they do offer a rich yet parsimonious set of domains across which to address the potential role of virtual communities in organizations. Like other research on the contradictory perspectives of information technologies (Robey & Boudreau 1999), this work appreciates the paradoxes omnipresent in organizational contexts that provide ample fuel for organizational theorizing (Poole & Van de Ven 1989), with implications for both organizations and researchers. Collectively, the insights can inform future development related such virtual worlds, and potentially identify new opportunities or threats in organizational appropriation of virtual worlds.

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APPENDIX A

Executive Student Assignment – Reflection on Second Life

Create an avatar in Second Life and explore the introductory islands as well as the mainland.

Add a page to the reflection, state your avatar's name, list any tutorials you used, provide links to interesting articles you uncovered, and estimate the hours you spent in Second Life.

Reflect upon your experience in Second Life and your group project, and give your opinion of Second Life and its potential role in real-world organizations in the coming years.

Some questions to guide your reflection (only answer those you find interesting, or perhaps take it in another direction):

- Describe some of your personal experiences (positive, challenging, surprising, etc.) with Second Life. What do they mean?
- What is the relevance of Second Life (and similar worlds or extensions of this one) to modern organizations in general? Certain types of organizations? Or a specific organization?
- What are some of the ways that Second Life can be leveraged by companies internally? Externally?
- What would be the challenges to a champion of a Second Life-based innovation in your organization? In organizations in general?
- Comment on the applicability of Second Life, the reflection, and the group project to this course. Did the exercise help you learn anything about innovation from within a company?

Roughly 5 well-written single-spaced pages are expected, for the reflection. The added page is in addition to this.

TABLE 1**Executive Student Industry Experience**

Industry	Number of Executive Students
Industrial products	6
Electronics and information technology	5
Healthcare	4
Financial services	3
Consumer products	3
Transportation/distribution	2
Education	1
Utilities	1

TABLE 2**Tensions Related to the Impact of Second Life within Real-world Organizations**

<i>Tension</i>	In Favor	Against
<i>Popularity</i>	Significant market	Minimal traffic
<i>First-mover</i>	Early foothold	Popularity plateau
<i>Demographic</i>	Desirable demographic	Dysfunctional demographic
<i>Anonymity</i>	Honest & uninhibited information	Trust issues & misinformation
<i>Sociality</i>	Social presence	Limited social cues
<i>Experience</i>	Immersion & 3D prototyping	Authenticity
<i>Accessibility</i>	Anyone, anywhere	Lack of organizational access
<i>Interface</i>	High interactivity	Low usability
<i>Structural</i>	Community	Control
<i>Social Benefit</i>	Freedom & therapy	Dehumanizing