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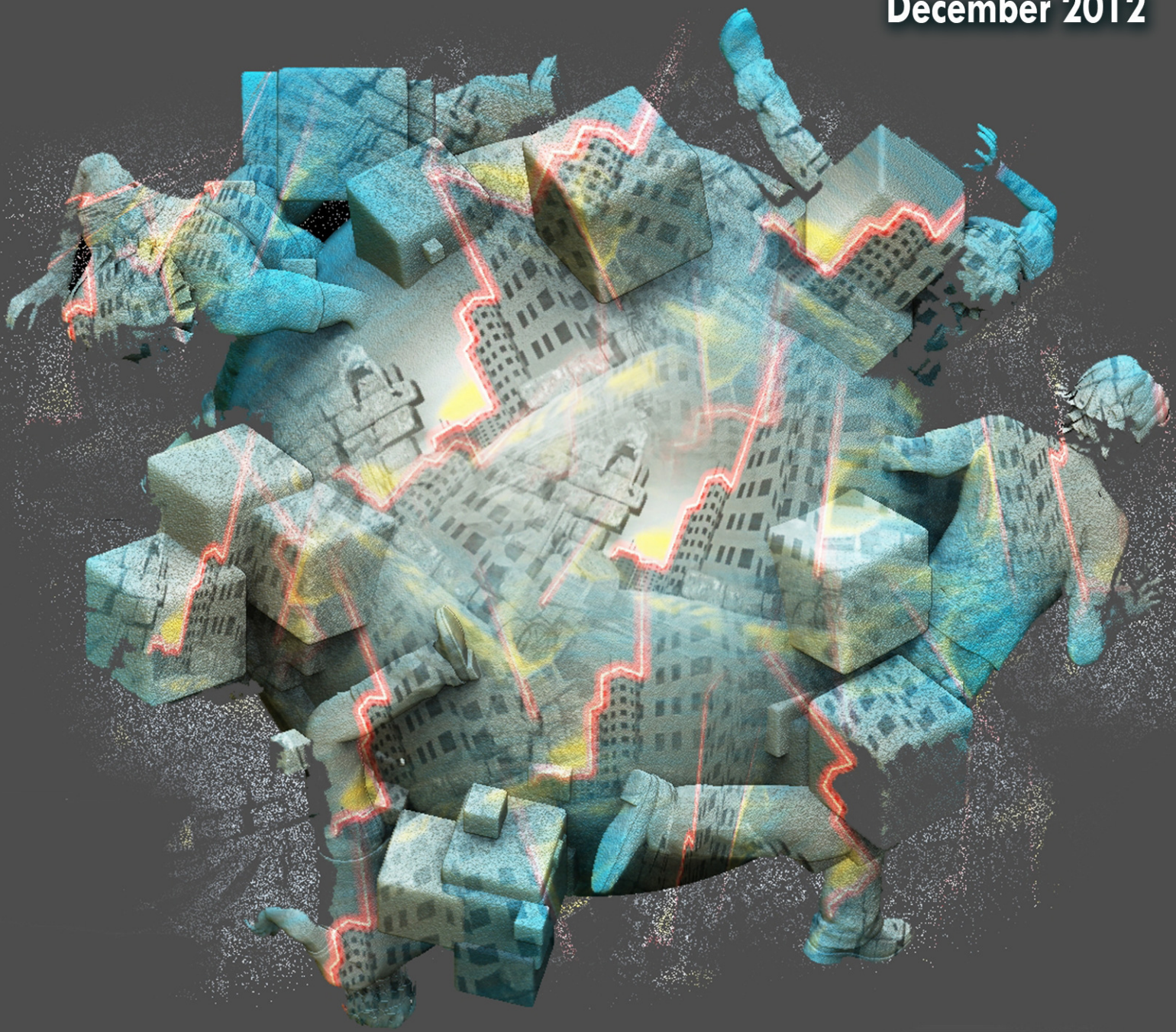

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Time for a Post-Mortem?: Business Professionals' Perspectives on the Disillusionment of Virtual Worlds

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Abstract

Virtual worlds (VWs) are powerful three-dimensional technologies where users can assume identities and interact with others. While designed as open-platforms for creativity, expression, and experimentation by recreational users, VWs were once lauded for their potential applications to business. Today, much of the business community has either moved on from the hype of VWs or struggles to understand whether value can be obtained by using VWs. This paper attempts to provide an understanding of these outcomes through the analysis of assessments written by 59 business professionals, who each spent an extended period of time in a popular VW during the peak of the hype. From these assessments, four broad perspectives on the value of VWs to organizations (or lack thereof) were identified, along with challenges facing use of VWs if they are to become more widely used within business.

1. Introduction

The introduction of novel technologies is often accompanied by information that is, at best, incomplete and, at worst, highly ambiguous and hyperbolic. The introduction of virtual worlds (VWs) was not an exception. After a cursory evaluation, one might have perceived VWs to hardly be the type of technology in which organizations could find value. These immersive online environments are often characterized by fantastic settings, bizarre characters, counter-culturalism, and a general attitude of escapism. Nevertheless, these advanced technologies and rich spaces were considered for use by businesses. An initial wave of articles proclaimed the potentially limitless business opportunities afforded by VWs (e.g., Anderson, 2006; Hemp, 2006), yet did not provide specifics on how to achieve the desired outcomes. This presented a challenge – understanding the potential affordances brought about by the technology without falling prey to unfounded hype.

The challenge was further compounded by the characteristics of VWs because they were not created for organizational purposes, but were designed for recreational applications. Business use was little more than an afterthought (Ives & Junglas, 2008), and thus the marketplace lacked well-developed value propositions. Research focused on the development of business capabilities in these new worlds has grown (Sivan, 2009; Wasko, Teigland, Leidner, & Jarvenpaa, 2011), with application to marketing management (Nah, Eschenbrenner, & DeWester, 2011) and shared work environments (Aurish, Ostermayer, & Wagenknecht, 2009). Dramatic shifts in how organizations engage with stakeholders, such as employees or customers, were predicted. For example, a leading industry analyst, the Gartner Group, projecting that 80 percent of active Internet users would have a VW presence by the end of 2011 (Gartner Research, 2007). The academic literature proclaimed VWs would be a major, even dominant, platform for business applications (Ives & Junglas, 2008). Yet, despite identifying affordances and prophesies of ubiquity, widespread adoption by traditional businesses did not follow. In fact, businesses that stepped into VWs encountered prevalent failure in their attempts to lure customers, employees, or partners into these worlds, with nine out of 10 businesses that launched VW initiatives experiencing failure within 18 months (Yoon & George, 2009). The excitement around VWs peaked in 2007, and since then has seen a decline in attention from the business press (Bracken, 2011) and witnessed the steady exit of early pioneer businesses, such as IBM and BMW. For many years VWs have remained entrenched in a state of disillusionment (Gartner Research, 2011). As intriguing as initial reports were, some have put a twist on an old adage, and reflect "if you build it, they will not necessarily come" (Wasko, et al., 2011). At this stage in their life cycle, the applicability of VWs as a value-creating technology for traditional businesses is in doubt, and at best, in question.

With the introduction of a novel technology, such as VWs, there are hurdles to cross before the technology is utilized by organizations – demonstrate affordances, prove capabilities, reduce perceptions of risk, and minimize challenges associated with adoption. VWs have yet to demonstrate that these hurdles are surmountable. To best understand the future role of a novel technology, it is important to understand perceptions of potential hurdles before the technology has been widely adopted. This study reports on the insights offered by professionals that are real business people who had not previously engaged the technology and who did not work for organizations that employed the technology. Based on their first-hand experiences using the technology, these professionals detailed their perceptions of the potential these technologies may offer to "real-world" organizations. We use these insights to reflect, identify, and explain how the challenges associated with VWs at the peak of their hype might explain how many of the predicted benefits failed to materialize.

2. Literature Review

Stemming from the evolution in online gaming from text-based online environments (e.g., MUDs, MOOs) dedicated to communication (Curtis, 1997) to shared graphically-rich spaces, *VWs* are computer network-based electronic environments that are interactive, persistent, and multi-user (Bartle, 2004). Within VWs, *interactivity* is achieved through the development of a three-dimensional interface. The primary mechanism through which users engage the system is the creation of an avatar, a three-dimensional embodiment of the individual. Avatars have the ability to walk, fly, or even teleport. Through the actions of their avatars, individuals create and use objects within these worlds, such as land, buildings, transportation infrastructures, clothing, and personal items. *Persistence* reflects the fact that VWs continue to exist, and change, even when a given user is not engaged with the environment. 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. To communicate with other avatars, users employ applications that are integrated into the technical infrastructure of the platform. The open-system nature of VWs was designed to allow for many forms of experience. This makes it impossible to foresee all potential applications, as affordances emerge as users pursue a variety of tasks (Galimberti, Ignazi, Vercesi, & Riva, 2001).

VWs offered organizations much promise, due to their flexibility and alternative means of communication. Recognizing this, research has identified a variety of business activities that could be supported within VW platforms – in particular marketing and collaboration. Arguably the most attractive applications for business were marketing and advertising, as VWs bring together a population of consumers (Hemp, 2006) who can be targeted with commercial messages to build brand loyalty (Park, Nah, DeWester, Eschenbrenner, & Jeon, 2008). For example, customers can engage with products via virtual activities to create appealing and engaging product experiences (Jiang & Benbasat, 2005), which can come close to experiencing them first-hand (Klein, 2003). These reasons are why many prominent companies have (or once had) a presence in VWs (Messinger et al., 2009). In addition, the immersive nature of VWs has been found to support consumer input into the design, development, and testing of new products through focus groups (Jana, 2007; Kohler, Matzler, & Füller, 2009; Messinger & Ge, 2009). Due to these varied benefits, VWs were seen as a tool that would forever change how organizations conducted marketing and advertising (Messinger & Ge, 2009). VWs were also seen as a tool that would revolutionize collaboration, as communication was supported by feedback, multiplicity of cues and channels, language variety, and channel expansion (Davis, Murphy, Owens, Khazanchi, & Zigurs, 2009). The increased social presence and tools supporting user engagement were said to be useful for holding business meetings that could span the globe (Pealman & Gates, 2010), training initiatives (Messinger, Ge, Mayhew, Niu, & Stroulia, 2010; Piccoli, Ahmad, & Ives, 2001), global collaboration (Aurish, et al., 2009) and virtual tours (Papp, 2010) – all of which would save organizations travel time and costs (Nevo, Nevo, & Carmel, 2011). Despite the affordances, VWs are empowered and reliant on their users, and it is only through organization adoptions that these affordances can translate into real organizational benefits (Hua & Haughton, 2009).

3. Research Methodology

To mirror how a professional would approach understanding a new technology to determine its relevance in an organizational setting, participants were asked to assess issues such as the relevance of the platform to modern organizations, possibility of internal or external applications of Second Life (SL)

within firms, and opportunities and challenges the innovation would pose to organizations. The guidance provided[1] involved writing "about the technology based on [their] experiences and research, noting how [they] see this technology being used or not used in organizations and why." To facilitate this process, participants were instructed to join SL, create an avatar, explore the world first-hand, interact with other users, and perform background research[2] on SL – all as they best saw fit in order to assess the technology. Participants were not instructed to go to any particular location in SL or complete any specific tasks. To record their reflections on their experiences, the participants wrote essays focused on assessing the value of VWs for real-world organizations *after* they explored SL[3].

Fifty-nine executives and business professionals spent time in SL and wrote about their experiences as part of a graduate-level course[4]. The participants represented a wide range of industries, possessed diverse professional backgrounds, and were at various stages of their career (Tables 1-3). Participants averaged 13.64 hours (range: 1-100 hours) in-world, and the assessments averaged 2,230 words (range: 901-3,508)[5].

3.1 Descriptive Characteristics of Participants

Participants were enrolled in graduate-level management courses[6]. Although a number of researchers have argued that students in a course do not represent practitioners (Huang, Gattiker, & Schwarz, 2008); Gordon et al. (1986) recommend a technique for improving the external validity of student participants that involves using students with demographic and interest profiles similar to participants that would be used that were not students. In this respect, the participants involved in this study were also practitioners, representing various industries (Table 1), professional backgrounds (Table 2), and career stages (Table 3).

[1] It was stressed to the informants, both in the written guidelines and verbally by course instructors, that there are no right answers and that their honest assessment of the technology as a business professional was of utmost importance.

[2] On average, participant accessed 4.35 information sources (i.e., user guides, press articles).

[3] Participants were given at least two weeks to complete the assignment as part of the course.

[4] These graduate-level courses were not focused on virtual worlds, and did not discuss or utilize virtual worlds for any part of the course prior to full completion of the assignment.

[5] Equates to about 4.5 single-spaced pages.

[6] Students were enrolled at one of two Midwestern universities. One group of participants came from an Executive MBA course consisting of 25 managers employed full-time professionally, and another from a part-time MBA course that had 34 full-time professionals enrolled. Students who had not worked or were currently not working in industry were not part of this study, although there were some enrolled in the courses.

Table 1: Industries	
Industry	**No. of Professionals**
Construction	2
Consumer Products	7
Education	4
Information Technology	9
Environmental	1
Financial Services	8
Healthcare	8
Industrial Products	11
Manufacturing	1
Military	1
Public Relations	1
Retail	1
Transportation/Distribution	3
Utilities	2

Table 2: Professional Backgrounds	
Background	**No. of Professionals**
Accounting	5
Business Development	3
Engineering	6
Finance	2
General Management	8
Human Resources	3
Information Technology	9
Marketing	7
Medical	6
Non-disclosed	3
Operations	4
Physical Science	1
Product Management	2

Table 3: Organizational Position Held by Participants		
Code	**Description**	**No. of Professionals**
Executives	C-level, President, VP, Director	18
Managers	Middle Managers	33
Professional	Non-managerial Professionals	8

3.2 Coding and Analysis Procedure

The analytic lens of affordances in researching technology is one that "recognizes how the materiality of an object favors, shapes, or invites, and at the same time constrains, a set of specific uses" (Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007). From this, an affordance perspective is not limited to the defined characteristics of a technology, but incorporates the appropriation and perceived limitation of those characteristics as seen by users. Using this perspective, we analyzed participants' assessments in order to identify the ways professionals thought about the organizational value of VWs. Following guidelines proposed by Strauss and Corbin (1998) that can be useful for a variety of research activities and be readily adapted to answering specific questions, we engaged in three rounds of coding following process of (1) open coding; (2) axial coding; and (3) selective coding. The analysis of the data consisted of multiple rounds of independent coding to identify and agree upon specific instances where the professionals discussed the value (or lack thereof) of VWs (Figure 1). During open coding, each set of coders (two pairs of authors) identified claims in a subset of the assessments. These claims were then discussed as a group to determine if they were claims supported by evidence and to come to an understanding about the coding process. By focusing only on the claims that participants explicitly supported with evidence, we isolate and address claims that were considered in a deeper manner. We contend that such claims are likely to be important and relevant to organizational decision makers. During axial coding, each coder went back and coded all of the remaining assessments, and the

identified claims were discussed as a group to reach full consensus. Any discrepancies were discussed among all coders until agreement was reached. Once all claims were identified, selective coding was performed by having each coder examine the claims to determine whether it was stating that VWs have current value, future value, contingent value, or no value. Following these rounds of analysis, we identified a number of themes and associated perceptual patterns that continued to arise within the reflections on the value of VWs. In the following sections, we provide a detailed discussion of these findings, highlighting each through quotes from the professionals.

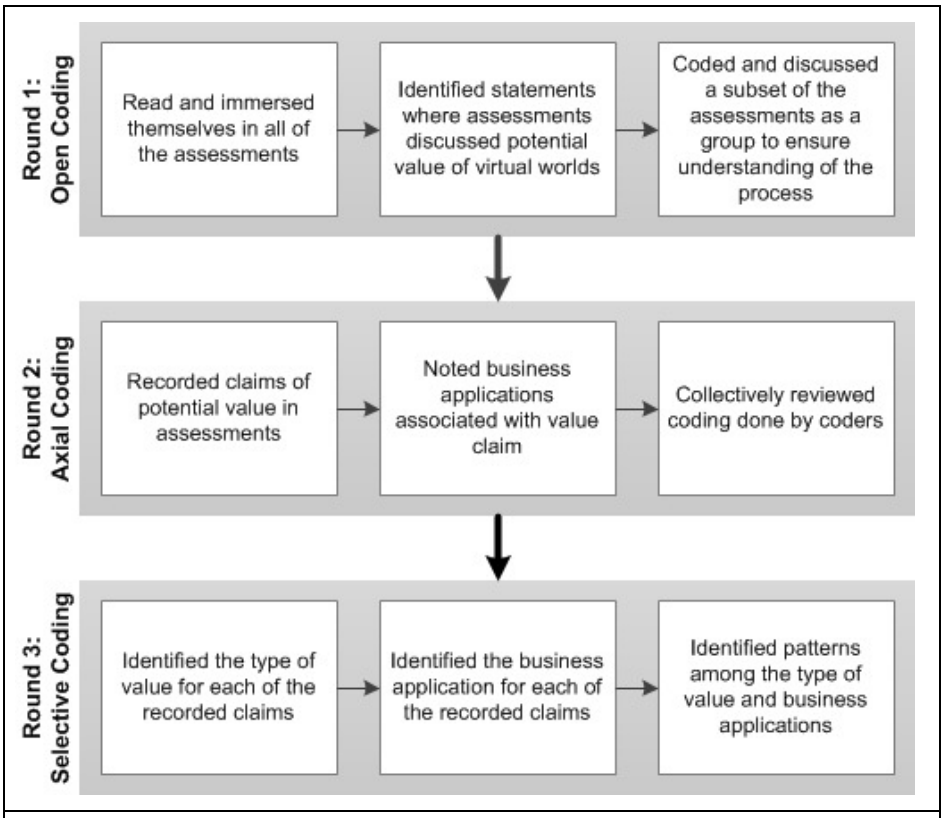

Figure 1. Data Coding and Analysis Process

4. Results and Findings

Professionals identified characteristics associated with the use of SL that influenced their perceptions of its potential business value, with their assertions indicating that VWs offer organizations:

Current value: value can be achieved from using VWs in their current state;
No value: value cannot be achieved by using VWs;
Contingent value: value can be achieved if certain conditions are met;
Future value: value can potentially be achieved at some future point.

The claims capturing the professionals' perceptions of value and characteristics influencing those assessments are summarized in Table 4. Quotes illustrating each of the four perceptions of value are presented below.

Table 4. Percent of Claims by Value of VWs by Characteristic					
Characteristics	**Current Value**	**No Value**	**Contingent Value**	**Future Value**	**Total**
Digitization	15.8%	0.8%	3.8%	4.5%	24.8%
Efficiency	6.0%		0.8%		6.8%
Real World Comparison	3.8%	0.8%			4.5%
Anonymity	0.8%		0.8%		1.5%
Access	1.5%		0.8%		2.3%
Shared platform	1.5%				1.50%
Demographic	6.8%	4.5%	2.3%	1.5%	15.0%
Game-like		3.0%			3.0%
Technological Resistance		3.0%	0.8%		3.8%
Technical Difficulties	0.8%	7.5%	1.5%		9.8%
Appropriateness		9.8%	2.3%	0.8%	12.8%
Control		12.0%	1.5%	0.8%	14.3%
Total	36.8%	41.4%	14.3%	7.5%	100%

* 0.0% claims not shown to improve readability of table

4.1 Current Value

Current value, 36.8% of claims, suggested that a broad range of traditional activities could be enhanced, and even made more efficient, by *digitization* (15.8% of all claims, 42.8% of current value claims), or the performance of traditional "real world" activities in-world. These tasks were primarily related to marketing (e.g., advertising, tours and demonstrations, market research and testing) and shared work environments (e.g., meetings, training, and collaboration).

Professionals believed VWs were a natural platform for *advertising*, allowing traditional marketing techniques to shift into the virtual.

> *"One important aspect of [SL] is the ability to advertise for one's real life business. Just like in the non-digital counterpart, this can be done in various ways. Classic billboards working in the same way as internet banners (a link to a website or download is embedded) can be found, as well sponsored areas, vending machines, and especially virtual stores."*
>
> – Risk Manager

VWs were seen as a platform for *tours and demonstrations*. VWs could allow customers to experience a product, providing them with opportunities for a richer understanding of the product. This capability was perceived to be applicable to a range of products and industries.

> *"One of the key applications to businesses…is the ability to show off new architecture, offices, automobiles, and showrooms. This could work for automobile shows, architects showing new designs, construction companies showing completed and current projects, even IBM, as I took a virtual tour of one of their new "green" service centers and was provided a great deal of information on the environment and what businesses can do to lessen their impact upon it."*
>
> – IT Executive

VWs were perceived to be a useful forum to conduct *market research and testing*, with results relevant to real-world initiatives.

> *"[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

VWs were believed to offer a surrogate for the real world, providing affordances associated with shared work environments. The connectivity of VWs was ideal for *meetings*. VWs would allow employees to interact more regularly, regardless of location, thus reducing travel costs and time. Further, savings could be realized at no expense of relationship building, as the social presence would allow geographically dispersed stakeholders to feel attached.

> *"[SL] is a new and creative way for businesses and their organizational members to take advantage of telecommuting and attending meetings that would otherwise require traveling. By using [SL], companies can hold virtual meetings with employees who work from home or with those employees who work at different branches…This virtual world could be relevant to companies that have offices spread around the world."*
>
> – Administration Service Manager

VWs potentially offered a platform for efficient *training*. The flexibility and immersiveness of the world was seen to support a variety of learning styles.

> *"The highly interactive learning techniques offered in the virtual world could actually increase effectiveness of time spent training employees and … The virtual world may be well suited to helping people learn in more productive ways. Many people learn by doing, or through experimentation."*
>
> – IT Business Leader

Finally, the environments were seen to readily support *collaboration*. For example, VWs could serve as an inexpensive tool for designers to explore and assess the feasibility of ideas, which might otherwise be too cost-prohibitive to pursue.

> *"[SL] 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, SL provides a portal to test many ideas that might be useful in real life."*
>
> – Operations Executive

4.2 No Value

While there were a substantial number of claims advocating for the current value of VWs, there was a stronger delegation (41.35% of claims) that suggested VWs offered organizations *no value.* This may not be surprising considering VWs were designed for recreational users, as open-platforms of creativity, expression, and experimentation. Interestingly, professionals predicted factors related to these characteristics would create challenges for business use, including: *control* (12% of claims), *appropriateness* (9.8%), *technical difficulties* (7.5%), *technological resistance* (3%), *game-like nature* (3.0%), and *demographics of users* (4.5%).

The issue of *technical difficulties* was raised. Due to frustrating first-hand experiences, professionals predicted that high technical requirements, slow system performance, and the inability to run the applications would be major obstacles to organizational use and value.

> *"Through using and researching [SL] I encountered some difficulties…Difficult to use …SLOW…Graphics appear primitive or poorly constructed…Rudimentary presence of the corporate world."*
>
> – VP and Physician

These factors lead professionals to conclude that while access to SL is free, supporting users would require significant resources, which would impede adoption.

> *"the slow performance … and the need to spend a significant amount of time in the game before you can actually interact with anyone…With [SL] running so slowly and requiring so much CPU horsepower, it would be an expensive IT spend to implement something like this."*
>
> – Production Manager

Even if hardware could run the VW applications, professionals foresaw *technological resistance* being a major challenge, as the steep learning curve of the platforms made them too complex to rollout to a broad user base.

> *I think there would be a tremendous amount of effort required to train and encourage customers and/or employees to become marginally proficient in being able to create their Avatar and then being able to navigate him though [SL]. In fact, I think, unless [SL] (or any other virtual environment that may come along later) becomes as entrenched as web searches, people will not want to use it because it requires too much effort."*
>
> – Executive Director of IT Development

While professionals noted the technical requirements of VWs seemed more like those of a game than a business application, they projected that the *game-like* nature of the platform would be unsuitable to business, partially considering the engaging platform a distraction.

> *"On one occasion, [one] might be a man, on another a woman, on even another they could be a dog, dragon or combination of all 4 – the limit is only on the person's creativity…If a worker is uninhibited of their use of the program, they will probably spend more time adjusting their avatar and socializing outside of the company rather than get work done."*
>
> – Engineer

The biggest challenge predicted by professionals was that businesses had no *control* over what occurred in-world. The freedom of users was blamed for a substantial, and troubling, perception – VWs were filled with highly *inappropriate* behavior. Nudity, violence, sexual acts, and foul language were readily observed and, were almost inescapable. As a result, participants perceived that no matter how impressive the technology, they could never foresee businesses utilizing it and were concerned about potential business ramifications.

> *"The material in the world is far too risqué to be appropriate for a business setting. In addition to productivity issues that may arise, the potential for sexual harassment lawsuits opens on several fronts…The potential liability of the program is too great to risk."*
>
> – Manager

These issues were so widespread that professionals questioned whether the *demographic* segment was even desirable.

> *"…the program is overrun by social networking, pornography, fetishes, and general disorganization that comes…with million[s of] users...I found more pornography and scripts for sexual acts than I could count."*
>
> – Engineer

Perhaps the most prophetic observation was that even during the peak of hype, not only had it appeared that the growth rate had plateaued, but that the number of registered users reported was overinflated, as the number of active users was only a small percentage of those registered.

> *"Advertising, brand identification and marketing that have reach is difficult to achieve for businesses in [SL] currently. Although the numbers of participants that have logged in to [SL] have increased…some have only visited the site once and some have created multiple avatars (virtual identities). The problem is that there are fewer regular users, estimated at 25,000 to 40,000 per day."*
>
> – Manager

Contingent Value

While *current value* and *no value* perceptions were most prevalent amongst participants, they also suggested there was yet an opportunity to create business value under certain situations, which is categorized as *contingent value* (14.3% of claims). For example, while VWs were seen as a way to reach an elusive demographic, the platform was perceived to be of little value if that was not a target demographic for a firm:

> *"Businesses that cater to a demographic that is less technology savvy… since their target audience is not on [SL], these companies would have nothing to gain…"*
>
> – Senior Research Engineer

Interestingly, many of the core characteristics that lead to conclusions of contingent value were the same characteristics that lead others to suggest there was no value – specifically control, technical issues, and appropriateness.

> *"[Though it] does not make much sense for companies to get involved with [SL] if they do not have any connection to end-consumers."*
>
> – Non-disclosed

Future Value

Finally, a small number (7.5% of claims) suggested there was potential for *future value,* but the day for VWs to generate business value was not here. Claims arguing this perspective cited a variety of factors, with no one factor considerably more important than another. One could argue this represents ambivalence towards the technology; however this did not seem to be the case. Rather, the professionals acknowledged VWs are still early in their development. These professionals were willing to leave open the possibility that the developers of the new worlds would address organizational needs if they are interested in organizational adoption.

Discussion

Just a few years ago, VWs were highly touted, but have arguably failed to live up to the hype. This paper takes a unique approach in utilizing data collected during the peak of the hype surrounding VWs to identify factors that prevented widespread business use from materializing. By attempting to understand the value propositions of VWs in a systematic fashion, this paper not only provides support for much of the previous conceptual work that theorized how technical capabilities of VWs could support a variety of business applications (Messinger & Ge, 2009; Spaulding, 2010), but is differentiated from this work by the appropriate consideration of challenges unique to the business context. The findings of this paper suggest that adoption of VWs always was, and remains, unlikely due to challenges

of: control, appropriateness, technical difficulties, technological resistance, game-like nature, and demographics of users.

Prior VW research has tended to focus on the development of technical capabilities in VWs (e.g., Chaturvedi, Dolk, & Drnevich, 2011) or examine how technical features might afford certain businesses applications (e.g., Kaplan & Haenle, 2009; Spaulding, 2010). This focus on the capabilities afforded by the technology was also reflected in the professionals' insights as the dominant argument for value in VWs was that digitization allowed for business functions to be performed in-world. While professionals strongly acknowledged this, they couched this belief by predicting challenges would stand in the way of widespread adoption. This counter perspective is lacking in the existing literature on VWs, as the primary focus is on *how* business might use VWs, not *if*. This approach creates an unspoken assumption underlying prior work – creation of affordances naturally leads to business utilization. However, capabilities of a technology do not determine use (Wasko, et al., 2011). In fact, additional capabilities and functions afforded by virtual worlds have been found to be harder to utilize, even for experienced users, thus reducing willingness and expectations of use for business activities (Luse, Triplett, & Mennecke, forthcoming). More so, VWs differ in meaningful ways from traditional organization-based systems. For example, VWs' features are designed to support social activity, playful expression, interactivity, and openness – objectives not typically found in traditional business systems. The findings of this paper suggest future research must not only consider the role of features in adoption, but how those features' use in specific contexts might inhibit adoption. The challenges of VWs unique to business identified here might explain why traditional theories of technology adoption have not been useful in explaining VW use by organizations (Hua & Haughton, 2009).

VWs' power comes from their ability to harness the power of the masses – attracting people, building communities, and organizing collections of people. While professionals acknowledged the attractiveness of VWs' users for various business applications, they also questioned if these are users businesses should be interested in. This highlights a potential issue in the VW literature – has research that has sought to understand the business applications of VWs utilized study participants capable of providing insight for this specific context? Some of the VWs research focused on business applications has simply not utilized participants (e.g., Goel & Junglas, 2009; Kaplan & Haenle, 2009; Spaulding, 2010). Further, when used, participants have either been familiar with the game-oriented technologies (Hua & Haughton, 2009) or have personally adopted VWs (e.g., Animesh, Yang, & Oh, 2011; Goel, Johnson, Junglas, & Ives, 2011; Messinger, et al., 2009), which can bias perceptions of usefulness in business (e.g., Nevo, et al., 2011). While these participants might have been appropriate to their contexts, past work has likely been limited in providing insight into adoption in a business context. Future work that aims to specifically address business applications of VWs should carefully take into consideration the issue of the participants' representativeness of the target population.

Much of the uniqueness and ingenuity of VWs has been attributed to the technical freedom to transcend norms and constraints of real life (Wasko, et al., 2011). By design, the focus of an open-platform, with a lack of controls, affords creativity, flexibility, self-expression, co-experience, and co-creation (Goel & Junglas, 2009). These can assist individuals in overcoming shyness or social anxiety or overlooking social barriers, such as age, gender, or stereotypes. Yet, these social benefits are irrelevant to business outcomes. VWs allow users to work on creatively constructing virtual artifacts, providing a powerful and rich representation of objects. Yet, though there are no formal controls (Kirsch, 1997) over these projects. Freedom of expression is valued in VWs. Yet, users still perceive a naked human-like avatar running through a crowd as unacceptable (Schutz, 2002). While some have proposed VWs have much in common with traditional information systems (Chaturvedi, et al., 2011), these are key

differentiating factors. Paradoxically, many of the benefits touted in VW literature created many of the challenges, in particular control and appropriateness, professionals in this study predicted would prevent businesses from fully realizing value in VWs.

Finally, research has focused on the game qualities of VWs (Schacht, Schacht, Maedche, & Botzenhardt, 2012), proposing a link between the gamification of tasks and productivity (e.g., Nardi, Ellis, & Pearce, 2009). However, there has yet to be a groundswell of support for adopting game-oriented approaches by decision makers. Rather, this was identified as an obstacle of VWs in business. As such, if those creating VW platforms, or those conducting game-oriented research, seek to convince traditional businesses of the value of VWs, they must either downplay the game nature of the environments or recast their findings in a manner more appropriate to business.

Limitations

The findings should be qualified by potential limitations related to the sample. First, the issue of sample size has been debated in qualitative work (Guest, Bunce, & Johnson, 2006). The experiences of most qualitative researchers note that in qualitative work little that is "new" comes out of the data after 20 (or so) people have been interviewed (Green & Thorogood, 2009, p. 120). This highlights the issue that sample size is less one of size than of saturation. The objective of saturation has been described as reaching the point at which the researcher sees similar instances over and over again (Glaser & Strauss, 1967, p. 65), which is what occurred in the analysis of the data.

Second, data collected for this study was done through an assignment within a course, and as such may not reflect the context to which this study seeks to generalize. This group of participants allowed us the unique ability to find participants that were real businesspersons, had not previously engaged the technology, and did not work for organizations that have employed the technology previously. For these reasons, we believe the participants' assessments provide insights into the perceived organizational value and challenges of VWs; however, there is a possibility that these assessments may not reflect the arguments the participants might make in organizational contexts where they are held accountable for the content. Finally, while the participants' inexperience with the technology is advantageous in understanding impressions formed of virtual worlds as it was an emergent technology, there is the possibility that a more experienced user could identity benefits and drawbacks that might be quite different than this novice group of professionals.

Conclusion

The aim of this paper was to explain why business has failed to embrace VWs in a way many predicted, and this could have been predicted. By examining the impressions of business managers and decision makers, this paper identifies a set of obstacles that have stood, and remain, in the way of widespread usage of VWs by traditional businesses. The findings of the paper do not lead to the conclusion that VWs are "dead" for organizational use, but the fact that these identified issues remain suggest that time may be eminent. However, rather than complete demise, what is likely is a transition from disillusionment to enlightenment of use. The business *of* VWs will continue, but VWs *in* business will be diminished compared to the initial hype, with usage focused on applications where the identified challenges are not salient.

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