Explore Consumers' Apathy Towards Participation in Online Virtual Worlds: What Tactics Have Been Pursued, Why They Have Largely Failed, and What Suggestions Can Be Made to Improve Acceptance

LisaMarie Gaeta

Commercializing Virtual Worlds

Dr. Neil Hair

Winter 2011

Executive Summary

In the world of virtual worlds, companies must constantly assess consumer satisfaction. With ever-developing technologies and tools, this environment is very fast-paced and users access worlds every day. When components of a virtual world are lacking, this deters user participation, and could lead to low return rates. Competition in this field continues to increase as well and marketers need to understand how to retain their user base. Such tactics must be implemented from the creation of a virtual world and throughout its lifespan. When user expectations are not met, they may discontinue use of a certain virtual world and move on to another. Up-to-date technology must be observed in order to keep up with the competition. Oftentimes, the reason for failure is due to new restrictions and features and users' expectations not being met. That is why it is always a good practice to provide user assistance services to collect feedback. Following failures, corresponding improvements need to be acted upon. In this manner, consumer apathy can be reduced and new users can even be accrued.

Introduction

According to the Entertainment Software Association (2011), 72% of American households play computer or videogames. This does not include other forms of virtual worlds, including social media and professional tools such as video calls. The number of people using virtual worlds is increasing at a rate of 15% every month (Hof, 2006d; Gartner, 2007 cited by Bray and Konsynski 2007). Today, cumulative registered virtual world accounts total over 1.7 billion (KZero, 2011).

Our explanation as to what factors influence users' intentions to return was based on what we conceived VWs to be: places that come about as a result of users' experiences in space. Such experiences give rise to a state of cognitive absorption, which itself is predicted by social, task, and location awareness. These types of awareness are due to the properties—aura, nimbus, focus and boundaries—of a VW. These properties provide us with a means to influence a user's decision to return to a VW (Goel et al. 2011).

Satisfying virtual world users can be a difficult task. Adding new restrictions and features may make some aspects easier however some users can become annoyed by them. This is how controversies can begin as well, leading to boycotting sites such as Facebook and its privacy issues. The

Research Methodology

In the following matrices, the aforementioned questions regarding consumer apathy toward online virtual world participation are addressed via thirty sources. The first, *Tactics*, addresses the tactics pursued by these worlds to maintain and bring in new consumers. The second, *Failures*, tackles the failures in such worlds. Finally the third, *Improvements*, states possible improvements that can be implemented in these worlds. The researcher has been included in all three matrices in order to display coverage of every topic discussed within all sources. In order to visualize these three matrices simultaneously, the proceeding model shows the flow of tactics to failures to future improvements.

Arriving at said sources was not a simple task. Using the ProQuest and EbscoHost databases, a number of search terms were used. In almost every search, "virtual world" was included followed by a variety of terms such as,

"inefficient," "failure," "lack," "threat," "apathy," and "satisfaction." Due to the lack of variety of articles, seeing that most involved Second Life, results were hard to come by. However, despite the difficulties, the resulting matrices provide an exceptionally comprehensive analysis of the topic of virtual world user recruitment and retention.

					Te	ct	ics		
Source		privacy	profitable	experiences (monetary etc)	personalization	security measures	up-to-date technology	user- friendly/control	graphics quality
Bates, Vickers, & Istance 2010							X	X	
Brenner 2007	X					X			
Chan, Hu, & Jiang 2009						X	X	X	
Conradi et al. 2009				X			X	X	X
Dillard & Hennard 2002						X	X	X	
Fairweather & Trewin 2010				X			X	X	
Fallman 2010				X	Х		X	X	
Forcht & Counts 1998	X					X	X		
Goel et al. 2011	Х			X	X	X	X	X	X
Goldschmitt 2004				X	X		X	X	
Golub 2010				Х			Х		Х
Guo, J. & Gong, Z. 2011	Х					X	X		
Hassouneh & Brengman 2011				Х				X	
Ketchell 2000					X		X		
Kock 2008				Х	Х		Х		
Langlois et. al 2009	X					X			
Lefebvre 1999				Х	X	X	X		
Levmore 2003						X		X	
Mayer-Schönberger & Crowley	Х					X	Х	X	
Nelson et al. 2008									
Prinz 1999						X	X		
Radford 2008							ii.		
Sanchez 2009				Х	X		X	X	Х
Twemlow et. al 2002									
Verhagen et al. 2011				Х			Х	Х	
Williams, Eyo, & Akpan 2011	X					X			X
Wolfendale 2007	X					X			
Wu, Li, & Rao 2008				X		X	X	X	X
Wyld 2010	Х					X	Х		Х
Zhao 2011					X		X	X	X
				99	-				
Gaeta 2012	X			X	X	Χ	X	X	X

													1			
						F	ail	ur	es							
	financial theft	new restrictions/ features	virtual currency inflation/ taxation	trial version (students etc.)	competitors (more secure)	terrorism	effect on workplace relationships	self-limiters (reduce time not money	cyber-bullying (experience/sui cide stories)	lack of perserverance (videogaming,	spam/viruses	controversy	loss of interest due to disease etc. (ADD,	expectations not met	demanding	intimidation
Source		5 5 g	t ∃ ≦	(s tr	8 5	te	a ≯ 5	8 5 5	S 0 5	ح م م	상	8	ं व व	ðč	5 8	<u> </u>
Bates, Vickers, & Istance 2010	- 24	: 202				- 24			1000							
Brenner 2007	X	X				X			X							
Chan, Hu, & Jiang 2009				10000							Х				199747	
Conradi et al. 2009		A.S.		X			A.S.		No.	N			ALC:	X	X	4.5
Dillard & Hennard 2002		Х	X			Х							1000			
Fairweather & Trewin 2010		X								X			X			-
Fallman 2010							10000			Х				X		
Forcht & Counts 1998	X	X				X	X									
Goel et al. 2011		Х												X		
Goldschmitt 2004		X														
Golub 2010								X		Х						
Guo, J. & Gong, Z. 2011		X	X							X						
Hassouneh & Brengman 2011		Х			X									X		
Ketchell 2000														X		
Kock 2008					Х									Х		
Langlois et. al 2009		X					n				X	X				
Lefebvre 1999		Х	X		Х											
Levmore 2003		X	X			X	li:							X		
Mayer-Schönberger & Crowley 2006		X	X		Х	Х										
Nelson et al. 2008		X						X								
Prinz 1999	X	X	X													
Radford 2008							X					X		X	X	X
Sanchez 2009										X				Х		X
Twemlow et. al 2002									X							
Verhagen et al. 2011		4.5					4.1		4.5					Х		
Williams, Eyo, & Akpan 2011	X	X	X		X											
Wolfendale 2007	X			-		Х			Х		X		-	X		-
Wu, Li, & Rao 2008						X				X				Х		
Wyld 2010		X	-			Х	X		-				-			-
Zhao 2011					X											
Gaeta 2012	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

		m		ar	OV	on	ne	nt	C
		Щ			VV				9
Source	error-free	filesharing	speeds	user help services	search engine enhancements	features for the disabled	content authentication	content update	create cognitive absorption
Bates, Vickers, & Istance 2010						Х			
Brenner 2007									
Chan, Hu, & Jiang 2009		X			-	100	Х	Х	1
Conradi et al. 2009			П	X					
Dillard & Hennard 2002		40	-		W1	100	4.5	-1	-
Fairweather & Trewin 2010			П			Х			
Fallman 2010	X		-		-	-		-	-
Forcht & Counts 1998	0000								
Goel et al. 2011			-		77.	100	-	-	Х
Goldschmitt 2004				Х	X		Х	Х	
Golub 2010		-	-					-	
Guo, J. & Gong, Z. 2011			П						
Hassouneh & Brengman 2011		4	-		4.5	41	4.5	-	
Ketchell 2000		Х	П				X		
Kock 2008	X	444	-	Х	100	100			
Langlois et. al 2009								X	
Lefebvre 1999			-				***	-	-
Levmore 2003				X					
Mayer-Schönberger & Crowley 2006									10
Nelson et al. 2008									
Prinz 1999		4	-		44	44	4.5		-
Radford 2008									
Sanchez 2009		100	-	Х					
Twemlow et. al 2002									
Verhagen et al. 2011									S
Williams, Eyo, & Akpan 2011									
Wolfendale 2007									
Wu, Li, & Rao 2008									
Wyld 2010		A-1							
Zhao 2011				X		Х	X		
Gaeta 2012	X	Х		Х	X	Х	Х	Х	Х

Failures

- privacy
- profitable experiences (monetary etc)
- personalization
- security measures
- •up-to-date technology
- •user-friendly/control
- •graphics quality
 - **Tactics**

- •financial theft
- •new restrictions/features
- virtual currency inflation/taxation
- trial version (students etc.)
- •competitors (more secure)
- •terrorism
- effect on workplace relationship
- •self-limiters (reduce time not money spent to heed off addictions, gambling, etc)
- •cyber-bullying (experience/suicide stories
- •lack of perserverance (videogaming, pursuit of entertainment)
- •spam/viruses
- controversy
- •loss of interest due to disease etc. (ADD, dyslexia)
- expectations not met
- demanding careers
- •intimidation (older age/experience)

- •error-free
- •filesharing speeds
- •user help services
- •search engine enhancements
- •features for the disabled
- content authentication
- •content update notification
- •create cognitive absorption

Improvements

Tactics Pursued

As depicted in the *Tactics* matrix, technology needs to always be updated, which goes hand-in-hand with quality graphics (Bates, Vickers, & Istance 2010; Chan, Hu, & Jiang 2009; Conradi et al. 2009; Dillard & Hennard 2002; Fairweather & Trewin 2010; Fallman 2010; Forcht & Counts 1998; Goel et al. 2011; Goldschmitt 2004; Golub 2010; Guo, J. & Gong, Z. 2011; Ketchell 2000; Kock 2008; Lefebvre 1999; Mayer-Schönberger & Crowley 2006; Prinz 1999; Sanchez 2009; Verhagen et al. 201; Williams, Eyo, & Akpan 2011; Wu, Li, & Rao 2008; Wyld 2010; Zhao 2011). Having the most realistic virtual world experience is thus important to users. Second Life's visuals are very low-grade for example, whereas World of Warcraft's is more advanced, a prime reason for Second Life's decline.



Above is a screenshot from Second Life (MaisonBisson.com 2007). For comparison, here below is a screenshot from World of Warcraft (All Wallpaper, 2011).



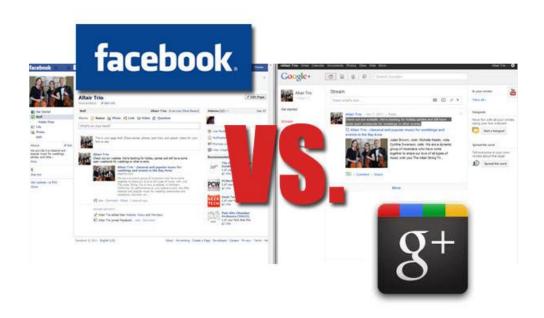
Worlds additionally need to provide a profitable experience (Conradi et al. 2009; Fairweather & Trewin 2010; Fallman 2010; Goel et al. 2011; Goldschmitt 2004; Golub 2010; Hassouneh & Brengman 2011; Kock 2008; Lefebvre 1999; Sanchez 2009; Verhagen et al. 2011; Wu, Li, & Rao 2008). This extends to both entertainment purposes as well as monetary. A monetary reward is simple enough, but when looking at enjoyment, "According to the theory of intrinsic motivation, the reward of performing an activity is the process of the activity itself and not an end result" (Lesser & Madabhushi 2001 cited in Wu, J., Li, P. & Rao, S. 2008, pp.221). This is true for especially addicting videogames like World of Warcraft, a world used for both entertainment and monetary gain, an ultimate virtual world experience.

Another tactic of importance is having a user-friendly theme (Bates, Vickers, & Istance 2010; Chan, Hu, & Jiang 2009; Conradi et al. 2009; Dillard & Hennard 2002; Fairweather & Trewin 2010; Fallman 2010; Goel et al. 2011; Goldschmitt 2004; Hassouneh & Brengman 2011; Levmore 2003; Mayer-Schönberger & Crowley 2006; Sanchez 2009; Verhagen et al. 2011; Wu, Li, & Rao 2008; Wyld 2010; Zhao 2011). Users need to be able to find what they need quickly, a sleek interface and simple design addresses this.

Rationalizations for Failure

Looking upon the *Failures* matrix, new restrictions or features is the biggest concern, followed by user expectations not being met (Brenner 2007; Conradi et al. 2009; Dillard & Hennard 2002; Fairweather & Trewin 2010; Fallman 2010; Forcht & Counts 1998; Goel et al. 2011; Goldschmitt 2004; Guo, J. & Gong, Z. 2011; Hassouneh & Brengman 2011; Ketchell 2000; Kock 2008; Langlois et. al 2009; Lefebvre 1999; Levmore 2003; Mayer-Schönberger & Crowley 2006; Nelson et al. 2008; Prinz 1999; Radford 2008; Sanchez 2009; Verhagen et al. 2011; Williams, Eyo, & Akpan 2011; Wolfendale 2007; Wu, Li, & Rao 2008; Wyld 2010). When a new component is added to a virtual world, there are necessary steps to keep users satisfied. There definitely needs to be a type of notification with details regarding whether there is a personalization aspect to a new privacy setting on Facebook for example.

As for expectations, if a virtual world isn't what it promised to be, users will leave. Google+ was all the hype because users had to be invited by those who had Google accounts to even join. Once this period was over, the site seemed just like Facebook. There may be more possibilities but also limitations and there could be a few reasons for the decline of hype. Users might not have been as enthralled with the features as much as expected, the audience that transitioned over wasn't large enough to sustain itself, or simply they were accustomed to Facebook and didn't see the need for another similar site.



(Mastin, M. 2011)

Of the three matrices, Failures is by far the most extensive. Rationale topics range from threats against the self or one's possessions to real-world demands. Understandably, financial theft encountered by a user directly or indirectly is a relevant cause (Brenner 2007; Forcht & Counts 1998; Prinz 1999; Williams, Eyo, & Akpan 2011; Wolfendale 2007). No one wants their personal identity stolen nor their credit card account. Some of the most intriguing include intimidation due to old age or less experience with virtual worlds, selflimiters such as gamblers or those who value their demanding careers, and the effects on their workplace relationships (Conradi et al. 2009; Forcht & Counts 1998; Golub 2010; Nelson et al. 2008; Radford 2008; Sanchez 2009; Wyld 2010). Intimidation is reasonable for those who didn't necessarily grow up with the internet and may not even know how to use computers. Thus, they miss out on the wonders of virtual worlds. Gamblers and those with addictions don't want to worsen their addictions, and after realizing their addictions to the virtual world or its concept, they limit their activity to prevent negative consequences. Sometimes employees don't have enough time in the day to keep up with their workload and constantly be checking their social media sites. Employers also deny applicants with questionable Facebook accounts or employees view colleagues poorly due to the pictures a co-worker may post.

There also happens to be virtual world currency inflation and taxation (Dillard & Hennard 2002; Guo, J. & Gong, Z. 2011; Lefebvre 1999; Levmore 2003; Mayer-Schönberger & Crowley 2006; Prinz 1999; Williams, Eyo, & Akpan 2011). In these worlds, users care about the amount they get for their real world dollars; these changes directly affect users, causing them to reassess their presence within a virtual world. While on the topic of cost, Conradi et al. (2009) brings to light that some users participate during a free trial period, and don't view the virtual world as worth their buck.

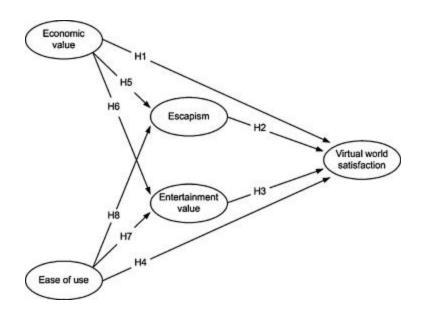
What usually aids a user's decision is the amount of competitors in the same virtual world area (Hassouneh & Brengman 2011; Kock 2008; Lefebvre 1999; Mayer-Schönberger & Crowley 2006; Williams, Eyo, & Akpan 2011; Zhao 2011). With the Google+ example mentioned earlier, Facebook is a very large competitor to go against.

Suggested Improvements

Fortunately, the *Improvements* matrix highlights that including some form of user help service is beneficial (Conradi et al. 2009; Goldschmitt 2004; Kock 2008; Levmore 2003; Sanchez 2009; Zhao 2011). A help page is definitely necessary, along with a feedback area. Features for the disabled (Bates, Vickers, & Istance 2010; Fairweather & Trewin 2010; Zhao 2011) and content authentication (Chan, Hu, & Jiang 2009; Goldschmitt 2004; Ketchell 2000; Zhao 2011) are also of importance to users. Users who have hearing or seeing impairments appreciate subtitles and text-backed photos. If a virtual world provides an informational element, there needs to be trustworthy sources of reference and ways to verify content. Users also appreciate receiving content update notifications as stated previously (Chan, Hu, & Jiang 2009; Goldschmitt 2004; Langlois et. al 2009).

Interestingly, Goel et al. (2011) discovered the need to instill cognitive absorption, or a state of deep involvement in which users lose track of time while partaking in an activity. This methodology relies on the interactionist theory of place attachment, which provides that users return to a virtual world because it is a "place" with meaningful experiences. "In turn, cognitive absorption is determined by users' awareness of whom they interact with and how they interact within a virtual world, what they interact about, and where, in a virtual sense, such interaction occurs" (Goel et al. 2011, pp.749). This is unquestionably seen in virtual worlds that are super-addictive, such as World of Warcraft.

Similarly, another study found that there are two extrinsic and two intrinsic motivations for participating in and being satisfied with a virtual world. The extrinsic are economic value and ease of use while the intrinsic are escapism and entertainment, displayed in the diagram below. (Verhagen, T. et al. 2011)



Limitations/Conclusions

This study does not accurately account for caveats concerning users who have never experienced virtual worlds or a certain genre of virtual worlds as opposed to users who have participated in virtual worlds and discontinued use due to personal or functionality issues. Additionally, it is important to view the highlighted tactics, failures, and improvements as interconnected, as viewed in the model presented earlier. Though it is impossible to address the needs and satisfy every user, there are steps that virtual world companies should take in order to generate the highest ratings in these areas. Moreover, it is impossible to eliminate all sources of violence online.

In these online communities participants can use their online personas-avatars – to chat, fight, make friends, have sex, kill monsters and even get married. Unfortunately participants can also use their avatars to stalk, kill, sexually assault, steal from and torture each other. Despite attempts to minimise the possibility of interpersonal virtual harm, programmers cannot remove all possibility of online deviant behaviour (Wolfendale, 2007).

Research concerning such worlds is relatively new but as the internet continues to expand and users' presences in these worlds follows suit, it will be easier to understand what users desire. Competition is always in attendance, so harnessing this power is a "compelling problem for emerging real world firms and organizations seeking to harness VWs" (Goel et al. 2011).

Performance enhancements

Besides obviously implementing tactics from the *Improvements* matrix displayed previously, there are other strategies that can be included. Developing a way to query consumers' experiences can be beneficial to better understand which areas of a specific world need enhancement. Surveys may be annoyances to users, but caution need be applied in timing and length of such forms. There should also be a clear method for users to submit their own opinions at any time.

Through said surveys, virtual worlds should analyze the two intrinsic and two extrinsic motivators for a user to be satisfied in a virtual world as displayed previously in the diagram from Verhagen, T. et al. (2011). By fulfilling as many of these motivators as possible, worlds can assure they have user satisfaction in multiple areas.

Monitoring site access is also essential and accomplished with an analytic tool such as Google Analytics. This way, worlds can take into account effects, a large amount of long time users could leave after a new feature is introduced or scandals concerning the world arise. Then when an improvement is applied, these numbers can be analyzed once again to see if users return.

Also, with virtual worlds that require subscription fees, offering not only trial versions, but also full access to all areas of the virtual world could better retain trial users. As with Lego Universe, the "free play" lasted for as long as one desired to play, but limited users from advancing to the many worlds available to paying users. Lego Universe is no longer available, but perhaps if it had extended users' exploration and instead had a set length for the trial period, it may have fared better. Debatably, there are some situations where a trial version not allowing full exposure to a virtual world may spark interest in the user to want to know what it beyond what they receive, and decide to pay the subscription fees.

Concluding with a quote from Michael D. Gallagher, president and CEO of the Entertainment Software Association also notes,

It is critical that we support economic sectors that create jobs, develop innovative technologies and keep America competitive in the global marketplace. The video game industry is one of those important, high-tech economic drivers. Our industry generates over \$25 billion in annual

revenue, and directly and indirectly employs more than 120,000 people with an average salary for direct employees of \$90,000 (Entertainment Software Association, 2011).

References

All Wallpaper, 2011. Wow Of Warcraft #1. [online] Available at: http://www.allwallpaper.info/wow-of-warcraft-1.html [Accessed 15 January 2012].

Bates, R., Vickers, S. & Istance, H.O. 2010, "Gaze interaction with virtual on-line communities: levelling the playing field for disabled users", *Universal Access in the Information Society*, vol. 9, no. 3, pp. 261-272.

Bray, D.A. & Konsynski, B.R. 2007, "Virtual Worlds: Multi-Disciplinary Research Opportunities", *Database for Advances in Information Systems*, vol. 38, no. 4, pp. 17-25.

Brenner, S.W. 2007, ""At Light Speed": Attribution and Response to Cybercrime/terrorism/warfare", *Journal of Criminal Law & Criminology*, vol. 97, no. 2, pp. 379-475.

Chan, M., Hu, S. & Jiang, J. 2009, "Secure peer-to-peer 3D streaming", *Multimedia Tools and Applications*, vol. 45, no. 1-3, pp. 369-384.

Conradi, E, Kavia, S, Burden, D, Rice, A, Woodham, L, Beaumont, C, Savin-Baden, M, & Poulton, T 2009, "Virtual patients in a virtual world: Training paramedic students for practice", Medical Teacher, 31, 8, pp. 713-720, Academic Search Elite, EBSCOhost, viewed 29 December 2011.

Dillard, M. & Hennard, J. 2002, "The approaching age of virtual nations", *The Futurist*, vol. 36, no. 4, pp. 24-28.

Entertainment Software Association, 2011. Essential Facts about the Computer and Video Game Industry. [pdf] Available at http://www.theesa.com/facts/pdfs/ESA_EF_2011.pdf [Accessed 11 January 2012].

Fairweather, P. & Trewin, S. 2010, "Cognitive impairments and Web 2.0", *Universal Access in the Information Society*, vol. 9, no. 2, pp. 137-146.

Fallman, D. 2010, "A different way of seeing: Albert Borgmanns philosophy of technology and human-computer interaction", *Al & Society*, vol. 25, no. 1, pp. 53-60.

Forcht, K.A. & Counts, P. 1998, "Legal considerations of Internet use - issues to be addressed", *Internet Research*, vol. 8, no. 1, pp. 70-74.

Goel, L, Johnson, N, Junglas, I, & Ives, B 2011, 'FROM SPACE TO PLACE: PREDICTING USERS' INTENTIONS TO RETURN TO VIRTUAL WORLDS', MIS Quarterly, 35, 3, pp. 749-A5, Academic Search Elite, EBSCOhost, viewed 29 December 2011.

Goldschmitt, R. 2004, "7th International Bielefeld Conference 2004: "Thinking beyond digital libraries - designing the information strategy for the next decade", *Library Hi Tech*, vol. 22, no. 4, pp. 347-354.

Golub, A. 2010, "Being in the World (of Warcraft): Raiding, Realism, and Knowledge Production in a Massively Multiplayer Online Game", *Anthropological Quarterly*, vol. 83, no. 1, pp. 17-45.

Guo, J. & Gong, Z. 2011, "Measuring virtual wealth in virtual worlds", *Information Technology and Management*, vol. 12, no. 2, pp. 121-135.

Hassouneh, D. & Brengman, M. 2011, "Shopping in Virtual Worlds: Perceptions, Motivations, and Behavior", *Journal of Electronic Commerce Research*, vol. 12, no. 4, pp. 320-335.

Ketchell, D.S. 2000, "Too many channels: Making sense out of portals and personalization", *Information Technology and Libraries*, vol. 19, no. 4, pp. 175-179.

Kock, N. 2008, "E-Collaboration and E-Commerce In Virtual Worlds: The Potential of Second Life and World of Warcraft," *International Journal of E-Collaboration*, vol. 4, no. 3, pp. 1-13.

KZero, 2011. Virtual Worlds: Industry & User Data Universe Chart for Q4 2011. [online] Available at: http://www.slideshare.net/nicmitham/kzero-universe-chart-q3-2010. [Accessed 15 January 2012].

Langlois, G., Elmer, G., McKelvey, F. & Devereaux, Z. 2009, "Networked Publics: The Double Articulation of Code and Politics on Facebook", *Canadian Journal of Communication*, vol. 34, no. 3, pp. 415-434.

Lefebvre, P.J. 1999, ""Digital money" - a view from the European Commission", *European Business Review*, vol. 99, no. 4, pp. 242-256.

Levmore, S. 2003, "Simply Efficient Markets and the Role of Regulation: Lessons from the Iowa Electronic Markets and the Hollywood Stock Exchange", *Journal of Corporation Law*, vol. 28, no. 4, pp. 589-606.

MaisonBisson.com, 2007. Object-Based vs. Ego Based Social Networks vs. WoW and Second Life. [online] Available at:

http://maisonbisson.com/blog/post/11973/object-based-vs-ego-based-social-networks-vs-wow-and-second-life/ [Accessed 15 January 2012].

Mastin, M. 2011. "Google Pages vs. Facebook Pages: In Pictures | PCWorld." Reviews and News on Tech Products, Software and Downloads | PCWorld. PCWorld. [online] Available at:

http://www.pcworld.com/businesscenter/article/243903/google_pages_vs_facebook_pages_in_pictures.html. [Accessed 15 January 2012].

Mayer-Schönberger, V. & Crowley, J. 2006, "Napsters Second Life?: the Regulatory Challenges of Virtual Worlds", *Northwestern University Law Review*, vol. 100, no. 4, pp. 1775-1826.

Nelson, S.E., Laplante, D.A., Peller, A.J., Schumann, A., Labrie, R.A. & Shaffer, H.J. 2008, "Real Limits in the Virtual World: Self-Limiting Behavior of Internet Gamblers", *Journal of Gambling Studies*, vol. 24, no. 4, pp. 463-77.

Prinz, A. 1999, "Money in the real and the virtual world: e-money, c-money and the demand for cb-money", *Netnomics: Economic Research and Electronic Networking*, vol. 1, no. 1, pp. 11-35.

Radford, M.L. 2008, "A Personal Choice: Reference Service Excellence", *Reference & User Services Quarterly*, vol. 48, no. 2, pp. 108-115.

Sanchez, J 2009, 'Barriers to Student Learning in Second Life', Library Technology Reports, 45, 2, pp. 29-34, Academic Search Elite, EBSCOhost, viewed 29 December 2011.

Twemlow, S.W., Fonagy, P., Sacco, F.C. & Vernberg, E. 2002, "Assessing adolescents who threaten homicide in schools", *American Journal of Psychoanalysis*, vol. 62, no. 3, pp. 213-35.

Verhagen, T., Feldberg, F., van, d.H., Meents, S. & Merikivi, J. 2011, "Satisfaction with virtual worlds: An integrated model of experiential value", *Information & Management*, vol. 48, no. 6, pp. 201.

Williams, E., Eyo, B. & Akpan, S. 2011, "Linden Labs Second Life: Understanding the Business Model and Sources of Commercial and Social Success or Decline of Second Life", *Computer and Information Science*, vol. 4, no. 2, pp. 96-101.

Wolfendale, J. 2007, "My avatar, my self: Virtual harm and attachment", *Ethics and Information Technology*, vol. 9, no. 2, pp. 111-119.

Wu, J., Li, P. & Rao, S. 2008, "Why they Enjoy Virtual Game Worlds? an Empirical Investigation", *Journal of Electronic Commerce Research*, vol. 9, no. 3, pp. 219-230.

Wyld, D.C. 2010, "A Second Life for organizations?: managing in the new, virtual world", *Management Research Review*, vol. 33, no. 6, pp. 529-562.

Zhao Q. 2011, "10 Scientific Problems in Virtual Reality", Communications Of The ACM, 54, 2, pp. 116-118, Academic Search Elite, EBSCOhost, viewed 29 December 2011.