2005

# The Implications of Property Rights in Virtual World Business Models

Ian MacInnes
*Syracuse University*

# The Implications of Property Rights in Virtual Worlds

**Ian MacInnes**
School of Information Studies
Syracuse University
imacinne@syr.edu

**ABSTRACT**

The financial success of online communities based on multiplayer game environments has been a bright spot among the many failures in electronic commerce initiatives. While this form of business has existed for less than a decade, it is growing rapidly and has become a mainstream form of entertainment in some areas of the world, such as Korea. Game environments are becoming more immersive and compelling and if this rate of improvement continues, such as through growing broadband penetration, they are likely to become as common as other forms of entertainment. This paper analyzes the issues facing developers of game communities in their goal of establishing viable business models.

**Keywords**

Virtual communities, property rights, virtual worlds, online games, item trade, EULA.

## INTRODUCTION

The rapid growth of Internet usage has enabled many new online communities to develop. A particularly interesting phenomenon that has arisen through Internet communities is the virtual world (VW). The objective of this paper is to identify the challenges that developers of VWs will face in their transition toward commercialized environments. The paper describes the challenges that developers face in their efforts to find viable business models as they go through the second phase in the dynamic business model framework identified in (MacInnes, 2004).

VWs existed prior to the commercialization of the Internet in the form of the multi-user domains (MUD), first developed by Richard Bartle and others in 1978. Advances in technology allowed these text-based communities to develop into graphical worlds. The first commercial graphical world was Ultima Online, released in September 1997. Its success spawned hundreds of development projects, of which the most well known are Everquest, the largest in North America with about half a million subscribers, and Lineage, the largest in the world with five million users. The latter was developed in Korea and has grown to become a mainstream phenomenon in that country, in part due to the rapid growth in broadband connections there. More Koreans play Lineage than watch television at night (Ludlow, 2004). As virtual reality technologies improve, broadband adoption grows, and subject matter covered becomes wider, there can be little doubt that online worlds will eventually reach mass markets throughout the developed world.

Few people could have anticipated the growth of small businesses oriented toward profiting from eBay in that company's early days. The auction site was initially seen as a service for collectors and a way of recycling unused items that would otherwise be sold at garage sales.

Virtual communities have a similar potential to create new businesses. It is attractive as a source of income for traders because it has low transaction costs, is entertaining, and enables people with time to experiment with arbitrage. Many people enjoy the process of buying low and selling high and are willing to engage in such activities as a hobby.

The advent of trade in virtual property will constrain the artistic freedom of game developers. It creates opportunities for new business models but increases risk and the level of involvement required by developers in the ongoing maintenance of the virtual world. Game items that players use can no longer be seen as trivial and entirely subject to the discretion of the developer. When users associate these objects with values in real world markets, the developer might become liable for loss due to circumstances within its control. For example, systems used should be safe from hacking, cheating, and scamming. The company Arctic Ice in China did not sufficiently secure its systems from hacking and in 2003 lost a lawsuit in Beijing's Chaoyang District People's Court to a game player who lost virtual property (China Daily, 2004). This may be the first case of its type in the world but others are certain to follow. Game companies have hoped to protect themselves against litigation by explicitly claiming in end user license agreements (EULAs) that virtual property has no real world value. If courts find,

however, that users have a reasonable expectation that these items hold value the claim made in the EULA may not be sufficient to protect the developer.

It is therefore important for game developers to understand that games existing on servers where players can exchange or buy items require an entirely new mindset and skills compared to previous models. Developers are creating marketplaces. They need to understand economic issues such as money supply, inflation, input / output models, and arbitrage. They also need to ensure that their systems have a similar level of security to those of banks, particularly if the business model chosen explicitly recognizes that virtual property has real world value.

## LITERATURE REVIEW

### Profit motives in virtual communities

Technological advances are fostering new ways of interacting with people and new business models. This section presents scholarly work in the area of virtual communities. In these studies we see that online communities have evolved from being primarily scientific in the early years to becoming gathering places where people come together to share personal interests. We are now seeing yet another transformation where sophisticated technical capabilities are making it possible for the development of virtual worlds where people are not only interacting with others but engaging in commercial transactions.

Online communities began to appear soon after the advent of the Internet. Initially these groups were research oriented but once the network became available to universities people began to develop communities around their personal interests. These were for the most part people's hobbies and entertainment. (Rheingold, 1993) In these early days the most common technologies were e-mail and listservs that later evolved into bulletin boards and multi-user domains (MUDs) where people began to create fantasy worlds (Castronova, 2002). These were forerunners of today's graphical virtual worlds.

As online communities have evolved so has the research about them. Scholars have documented the effectiveness and use of virtual communities in society to foster, for example, civic behavior (Blanchard and Horan, 1998) and social resistance movements (De, 2003). Companies have also realized the organizational and commercial and potential of this social phenomenon. As scholars have pointed out, virtual communities can be used to create, gather, organize, and manage knowledge (Bruynseels and Vos, 2000) (Daniel et al., 2002) (Jansen et al., 2000) (Schubert and Koch, 2002).

Virtual communities have been used as a management tool in organizations. Marketing departments have found that people's fascination with the product or service can help a company develop relationships with customers to generate loyalty (Kardaras and Karakostas, 2000) (Schubert and Koch, 2002). These communities nonetheless have not been easy to maintain and companies are often not prepared to deal with potential criticism expressed in these forums (Lueg, 2001).

Scholars that have analyzed virtual communities, in general, have classified them according to their type of activities and membership. For example (Hagel and Armstrong, 1996) identified four categories of online communities: communities of transactions, communities of interest, communities of fantasy, and communities of relationship. Similarly Klang and Olsson (Klang and Olsson, 1999) divides them into community networks, professional societies, personal societies and the "third place," where people go to meet with new and old friends. They also classify communities in for-profit and not-for-profit for both individuals and organizations. This transition from non-commercial to commercial communities has resulted in exciting new developments. Klang and Olsson (Klang and Olsson, 1999) identify four types of communities: the forum, the shop, the club, and the bazaar. The bazaar involves activities where the members themselves are buying and selling physical and now virtual products as well. This type of activity is becoming more and more prevalent. When companies first established VWs they probably believed that the primary revenue source would be from subscription fees and they probably did not expect users to see profit opportunities in the community.

Ginsburg's (Ginsburg, 2001) study of chess communities documents how there were numerous people willing to pay for an Internet Chess Club membership and, even in a structured game such as chess, members introduced "chekels," a monetary unit that could be exchanged for dollars. It is thus not surprising to see that the social aspects of these communities are rapidly transforming into commercial opportunities for users as well. Many developers have wanted to discourage the profit motives of users. Lack of control from the company has resulted in unexpected concerns. Even though there are millions of people around the world who are active in these virtual worlds, scholars have only recently begun to understand the dynamics of these communities. This paper focuses on commercial developments and the opportunities and challenges for the developer as well as for the user associated with this type of activity.

### Business models and virtual communities

Business model literature has grown rapidly over the past five years and is helpful in understanding the challenges that VW developers and users are likely to face in their attempts to develop profitable businesses based on virtual property. Contributions from scholars in business models can be divided into three areas: studies that focus on single factors to highlight their importance, studies that identify several elements that make a business model successful, and studies that identify business model components.

MacInnes (MacInnes, 2004) provides a four stage dynamic business model framework. The factors that affect the success of a company's business model at its early stages are different from those affecting the business at a more mature stage. In the first stage technical issues are of greatest importance. In the second stage environmental factors such as law and adoption should be considered. In the third stage, developers can begin to incorporate traditional business model factors. The fourth stage focuses on factors that will sustain the business. The factors that will affect the success of a company's business model at its early stages will be different from those affecting the business at a more mature stage.

Corporate and user models around virtual communities are beginning to emerge and companies still have many elements to work out. This section addresses the factors that others scholars have identified that contribute to the success of a business model. Based on these factors it is possible to specify the challenges that these virtual worlds will face as they move through different stages of development.

In the early stages of technological advance, technical factors are crucial to the success of the business. In the VW industry, technical factors can destroy a company because people have created assets in these VWs that hold considerable value. If these assets are lost due to technical problems or a security breach, the developer could be sued if it does not compensate the user. Thus in virtual worlds, where people hold valuable property, security of the company's servers must be a top priority. Privacy, security, and the integrity of the marketplace are factors that Duh (Duh et al., 2001) found will be of critical importance in this first stage because members need to have confidence in the VW provider.

Many of the technical aspects faced in the first stage of business models have been overcome. VWs are now in the second stage where they have to overcome environmental factors. Environmental factors include legal, societal, and general economic limitations. Vasilopoulou, Pouloudi, Patronidou, and Poulymenakou (Vasilopoulou, 2002) point out that issues of regulation and policy are critical to this effect. Similarly Schroder and Yin (Schroder and Yin, 2000), determined that lack of security, organizational, and legal issues are the most difficult to overcome when companies make the transition from a traditional business model to one centered on electronic commerce. The legal issues that both of these papers identify will also play a role in these businesses as it is not yet clear in a legal sense, for example, who owns property in VWs or whether the convertibility of virtual currencies gives VWs banking functions. As VWs appear to parallel the real world, governments may want to intervene when illegal activities occur or to protect assets if there is inflation.

The third stage of business model development focuses on traditional concerns such as revenue sources, customer value, costs, and infrastructure management. From the authors that have looked at single factors Wathne and Heide (Wathne and Heide, 2001) emphasize the use of strategies that increase switching costs as a way of maintaining customer loyalty, or look at a way of creating and maintaining communities within the context of the business as a way of supporting and enhancing the economic activity from a website. VWs have high switching costs as a result of the property and persona that a participant in such a community develops over time. They may find it costly to switch to another VW and have to begin another persona and develop new relationships. Wathne and Heide also suggest developing complementary products. Some companies running online games offer physical products that can be exchanged for their digital versions.

Amit and Zott (Amit and Zott, 2001) identify efficiency and novelty as two factors that can make a business successful. VWs provide novel features for their players and they are virtually limitless as users can add content, improving the richness of the experience. Among the most challenging factors that companies developing virtual worlds face are member development, community development, and asset management (Williams and Cothrel, 2000). With some users developing their own businesses, developers lose some control.

### Property rights in virtual communities

This section highlights the scholarly work that has been done in the area of property rights related to the Internet and, more specifically, recent contributions in the emerging research surrounding VWs. The Internet has often tested the limits of property rights law. Even in the early days of the Internet there was discussion of copyright for postings to bulletin boards. As soon as the Internet began to acquire greater capabilities, such as a graphical interface and hyperlinks, other challenges began to emerge. The publishing industry has had to adapt and develop new business models, but is still in flux (Kahin and Varian, 2000).

With the commercialization of the World Wide Web, companies began to understand the importance of the medium for marketing and sales. Because it was possible to buy a domain name equal to a company's trademark, people began to profit from the sale of names that they bought before many companies realized the importance of the medium. Mueller has documented these debates (Mueller, 2002). The creation of Napster brought forward the issue of online legal and illegal music distribution. In this respect scholars have written about the ways intellectual property can be protected online (Eliasson and Wihlborg, 2003) (Litman, 2001) (Reeves, 1996). Along with recommendations to protect intellectual property, there have also been concerns about the overprotection of property on the Internet and a call for a more balanced approach to this new medium. (Lessig, 2002) (Lessig, 1999) (Hunter and Lastowka, 2003) (Schlachter, 1997). This is the type of debate that is likely to be repeated in the context of property ownership in virtual worlds.

Faster processors, greater bandwidth, and sophisticated graphics have led to virtual communities where people are no longer simply talking about their hobbies. As Castronova has shown, thousands of people generate income by engaging in digital transactions. The income they obtain can be exchanged for real money through eBay and other marketplaces. End user license agreements establish terms and conditions with respect to users activities and the content they provide: "[u]nder Sony's EverQuest EULA, every click and motion in the game is defined as 'uploaded content,' to which the player waives any and all rights of control." (Castronova, 2002). Dibbell states (Dibbell, 2003) that EULAs states are often ambiguous and many of the activities of the players justify their ownership of the items. The debate over ownership issues has only just begun and the results of this debate has the potential to radically change business models.

## PITFALLS FOR DEVELOPERS

Developers of virtual communities that incorporate digital property should be aware that there are many potential dangers. When they create items that have real world market value there will inevitably be disputes about ownership and theft. Virtual property creates incentives for hacking and stealing passwords. Keeping daily back-ups in several locations is crucial to avoiding a legal and public relations disaster. It is also important to design the system so that it minimizes the probability that account information can be stolen. For example some games have used the same user name on the account as the avatar name, and it is thus accessible to anybody in the game. If a user has a substantial amount of virtual wealth it is relatively easy to target that user since half of the information needed for hacking is known. It is also important that reminder questions be difficult for a stranger to answer. Stealing accounts will be easier if the question asks something trivially easy to guess such as "what is your favourite colour?" Above all, virtual world providers have to abandon the mindset that they are providing "just a game." Providers must establish and enforce appropriate rules, avoid making arbitrary decisions, and act to protect the value that exists in these virtual items. Those who continue to develop as they did before the advent of virtual property will soon find their legal bills mounting. Developers should also plan for an end game. If they begin to lose money how are they going to escape liability if they shut down their world? EULAs may not provide sufficient protection if courts find that users have a reasonable belief that their items hold real world value. The legal system may be forgiving in cases such as Everquest, where the developer acted to shut down trade in game items.

Another problem that developers face is that they are the creators of a complex economy. Savvy users will exploit even slight design errors to achieve financial gain. Whenever there is a mechanical way of changing an input into a more valuable output users will attempt to develop macros to do this automatically. This has been referred to as "gold farming" and has been a successful strategy in several virtual worlds. The problem is that this debases the currency used in the game and makes the economy unstable. Virtual fortunes can be wiped out, perhaps with legal consequences if the developer is found to have been negligent. At minimum players may lose confidence and terminate their subscriptions.

The cross-border nature of virtual worlds can result in a number of issues. Some activities in a VW may violate laws of some jurisdictions but not others. For example, business models built around profiting from the sale of digital items sometimes provide incentives that are similar to gambling (MacInnes, 2002). For example, Magic the Gathering Online and Lord of the Rings offer tournaments that require digital objects as payment and provide digital objects as prizes. Some jurisdictions may consider this to be gambling. There can also be age restrictions on gambling. Asheron's Call and Everquest have both had online casinos where users can play a game of chance to convert game currency into rare items (Castronova, 2003). Since both the currency and the items are easily convertible into real world cash there seems to be little difference between this activity and other types of online gambling. Some laws distinguish between games of skill and chance. Many governments have reporting guidelines and taxes on gambling winnings. It is also not difficult for players to create their own unregulated gambling businesses inside virtual worlds. Companies use their terms of service to put the responsibility on players to ensure that they are not violating local laws but this may not be sufficient to avoid legal action. Although gambling in virtual worlds is currently under the radar screen of governments this is likely to change.

One of the most important considerations for developers is establishing rules that foster a positive community environment and minimize potential losses to participants. At the same time these rules should be flexible to enable governance of the community by the users themselves. When Ultima Online was first released it quickly degenerated into a Hobbesian world of lawless anarchy where "player killers" were dominant. Developers soon realized that users wanted more structure. The initial rules that developers establish are a constitutional contract (Buchanan, 1975) and can be designed to reduce users' needs for predation and defense. These rules can include democratic institutions that enable the players themselves to negotiate post-constitutional contracts.

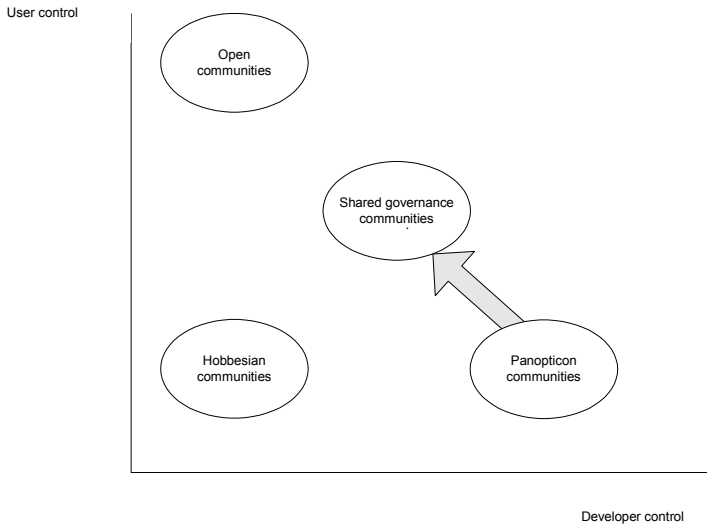
Early developers of online worlds have wanted absolute control over the worlds they have created. This is understandable, given that there are profit streams at stake as well as the potential for legal liability. They have also seemed to be motivated by an artist's imperative. They created the world and thus they should have artistic control over it. Players do, however, contribute much of the value of the world. Their presence and activity is required for the world to be valuable. As these worlds evolve, developers may find a way to devolve some of the power to users.

In summary, developers are making the same mistakes over and over again. Most of them clearly do not understand how the fact of virtual property and its recognition in law will transform their businesses. They need to avoid the mindset that they are providing "just a game" and begin to understand that persistent virtual assets and user created intellectual property require a much more sophisticated approach to development.

## THE CONTROL PARADOX

One of the main challenges for developers is to establish control mechanisms. Ownership of game property and player expectations remain unclear. Figure 1 presents the distribution of controls and the likely types of communities that can result from these control levels.

**Figure 1 Control in Virtual World Communities**




Hobbesian communities emerge when the developer does not set or enforce rules and does not provide the tools to foster governance by the players. Developers do not consistently police user behaviour and may selectively enforce a code of conduct. This results in a chaotic world of scamming and griefing that go unpunished. This can also lead to vigilante activity when users feel that the situation is anarchic. For example, Professor Ludlow's critique of The Sims Online was that Electronic Arts was not exercising sufficient control over the community and only selectively enforcing codes of conduct. As a result a vigilante group that called itself "Sims Shadow Government" was formed to protect against the scamming mafias that had formed.

Panopticon communities, in contrast, are under the absolute control of the developer, who sets and strictly enforces rules without input from the players. They have strong and detailed codes of conduct, language filters, and terms of service. They ensure that the entire world is under surveillance in order to prevent socially undesirable behaviour. A particularly extreme example of this is ToonTown Online, a VW that does not allow any typing of personalized messages. The entire interaction with other users is through a menu system. Disney's goal is to create a world that is bulletproof to influences in any way

unsafe to children. As a result, the players have no control over the environment and the company monitors and controls everything, including a formal approval process for avatar names. Most developers have aimed for Panopticon communities but there is a trend toward building in greater user involvement in governance. Panopticon communities will remain viable for users who want a controlled experience.

Open communities are entirely under the control of the users. Developers of such a community cede ownership of it to the players and maintain a minimal role if any in its maintenance. Successful open communities will have appropriate tools for self-governance. Many of the text-based MUDs, for example, became open communities. The development of such a community would generally follow open source principles. Sophisticated open communities could be developed in the future under scenarios such as non-profit research funding, turn-over of an unsuccessful business to the players, and volunteer development efforts by skilled and wealthy hobbyists. Given the vast expense of developing and maintaining a VW, there are likely to be fewer successful open communities than developer controlled ones.

Shared governance communities are the most likely scenario for successful future VWs. As developers have gained experience in managing social dynamics they are beginning to understand the incentives and rules necessary to enable joint governance of their creations. Since almost all current VW business models involve ongoing payments to the developer, they will want to maintain some control over community development. Sony, for example, is beginning to experiment with shared governance. Star Wars Galaxies and Everquest 2 are expected to have player run cities with elected mayors and players' councils that coordinate with developers. These are only first steps, however, and the Sony model remains closer to panopticon than to shared governance communities.

## CONCLUSION

This paper has applied theories of business models to the case of virtual worlds. Developers face many challenges because the technology and business models are still in an early stage. Most of the developers that have established virtual worlds are going through the second stage of the business models where environmental factors related to legal and societal factors are posing the greatest challenge. This phenomenon remains new and will be the subject to debate for many years to come. It requires a major change in the assumptions under which the game industry has operated. There has been a void of academic work on this fascinating social phenomenon that has only begun to be rectified. Next steps should include case studies so that researchers have more ground on which to build theory. As well, VWs have great potential for large-scale experiments in psychology and economics, as Bradley and Froomkin have pointed out (Bradley and Froomkin, 2003). The coming years will see many new developments and will be a fascinating time to follow this emerging industry.

## REFERENCES

1. Amit, R. and Zott, C. (2001), Value Creation in E-business, *Strategic Management Journal,* **22,** 493-520.
2. Au, W. J. (2004) The First Warning Sign of Encroaching Capitalism and Corporate Influence, Vol. 2004.
3. Blanchard, A. and Horan, T. (1998), Virtual communities and social capital, *Social Science Computer Review,* **16,** 293-307.
4. Bradley, C. and Froomkin, M. (2003) VIrtual Worlds, Real Rules, In *Telecommunications Policy Research Conference*Arlington, VA.
5. Bruynseels, K. and Vos, J. (2000), Organisation and visualisation of tacit knowledge in virtual communities, In *Virtual Worlds*, Vol. 1834, pp. 24-31.
6. Buchanan, J. M. (1975) *The Limits of Liberty: Between Anarchy and Leviathan,* University of Chicago Press, Chicago.
7. Castronova, E. (2001) Virtual Worlds: A First Hand Account of Market and Society on the Cyberian Frontier, In *CESifo Working Paper*.
8. Castronova, E. (2002) On Virtual Communities, In *CESIFO Working Paper*.
9. Castronova, E. (2003) EverQuest to Launch Casino, available: terranova.blogs.com/terra_nova/2003/12/everquest_to_la.html.
10. Castronova, E. (2004) Synthetic World Economic Data, available: business.fullerton.edu/ecastronova/Synthetic%20Worlds%20Economic%20Data/economic_data.htm.
11. China Daily (2004), Lawsuit fires up in case of vanishing virtual weapons, available: www.chinadaily.com.cn/en/doc/2003-11/20/content_283094.htm.
12. Daniel, B., McCalla, G. and Schwier, R. (2002), A process model for building social capital in virtual learning communities, In *International Conference on Computers in Education, Vols I and Ii, Proceedings*, pp. 574-575.
13. De, R. (2003) Social Resistance and the Self in Virtual Communities, In *the Ninth Americas Conference on Information Systems (AMCIS)*Tampa, FL, pp. 373-380.

14. Dibbell, J. (2003a) Owned!: Intellectual Property in the Age of Dupers, Gold Farmers, eBayers, and Other Enemies of the Virtual State, In *The State of Play: Law, Games, and Virtual Worlds*New York, NY.
15. Dibbell, J. (2003b) Serfing the Web, In *Wired*, Vol. 11.
16. Dibbell, J. (2004) Play Money, Vol. 2004.
17. Duh, R., Jamal, K. and Sunder, S. (2001), Control and Assurance in E-Commerce: Privacy, Integrity and Security at eBay, *Sloan Management Review,* **43,** 17.
18. Eliasson, G. and Wihlborg, C. (2003), On the macroeconomic effects of establishing tradability in weak property rights, *Journal of Evolutionary Economics,* **13,** 607-632.
19. Ginsburg, M. (2001) Growing Out of Its Skin: Principles of the Evolution and Extension of the Internet Chess Club, 1995 to Present, In *Proceedings of the Seventh Americas Conference on Information Systems (AMCIS 2001)*Boston, MA, pp. 1514 - 1521.
20. Hagel, J. and Armstrong, A. G. (1996), The Real Value of On-Line Communities, *Harvard Business Review,* **May-June,** 134-141.
21. Hunter, D. and Lastowka, G. (2003) Virtual Property, In *The State of Play: Law, Games, and Virtual Worlds*New York, NY.
22. Jansen, W., Steenbakkers, G. C. A. and Jagers, H. P. M. (2000), Knowledge management and virtual communities, In *Challenges of Information Technology Management in the 21st Century*, pp. 984-988.
23. Kahin, B. and Varian, H. R. (2000), Internet publishing and beyond - The economics of digital information and intellectual property - Introduction, In *Internet Publishing and Beyond*M I T PRESS, Cambridge, pp. 1-5.
24. Kardaras, D. and Karakostas, B. (2000), Virtual communities in banking: An empirical study, In *Bis 2000*, pp. 245-254.
25. Klang, M. and Olsson, S. (1999), Building communities online, In *Proceedings of Fourth International Workshop on Cscw in Design*, pp. 43-52.
26. Lessig, L. (1999) *Code and Other Laws of Cyberspace,* Basic Books, New York, NY.
27. Lessig, L. (2002) *The Future of Ideas: The Fate of the Commons in a Connected World,* Random House, New York, NY.
28. Litman, J. (2001) *Digital Copyright Protecting Intellectual Property on the Internet,* Prometheus Books, Amherst,.
29. Ludlow, P. (2004) Griefers and Group Formation in Alphaville, In *Times of London,* January 31.
30. Lueg, C. (2001), Information dissemination in virtual communities as challenge to real world companies, In *Towards the E-Society: E-Commerce, E-Business, and E-Government*, Vol. 74, pp. 261-270.
31. MacInnes, I. (2002) Business Models for Interactive Entertainment Communities, In *International Telecommunications Society Biennial Conference*Seoul, South Korea.
32. MacInnes, I. (2004), Dynamic Business Model Framework for Emerging Technologies, *International Journal of Services Technology and Management*.
33. MacInnes, I., Kongsmak, K. and Heckman, R. (2002) Barriers to Digital Distribution in the Book and Software Industries, In *International Conference on Electronic Commerce*Hong Kong.
34. Mueller, M. (2002) *Ruling the Root: Internet Governance and the Taming of Cyberspace,* MIT Press, Cambridge, MA.
35. Ondrejka, C. (2003) Escaping the Gilded Cage: User Created Content and Building the Metaverse, In *The State of Play: Law, Games, and Virtual Worlds*New York, NY.
36. Reeves, H. S. (1996), Property in cyberspace, *University of Chicago Law Review,* **63**.
37. Rheingold, H. (1993) *The virtual community : homesteading on the electronic frontier,* Addison-Wesley Pub. Co, Reading, MA.
38. Schlachter, E. (1997), The intellectual property renaissance in cyberspace: why copyright law could be unimportant on the Internet, *Berkeley Technology Law Journal,* **12**.
39. Schroder, D. and Yin, P. (2000), Building Firm Trust Online, *Communications of the ACM,* **43**.
40. Schubert, P. and Koch, M. (2002) The Power of Personalization: Customer Collaboration and Virtual Communities, In *Eighth Americas Conference on Information Systems (AMCIS)*Dallas, TX.
41. Sharp, C. (2003) Business Integration for Games: An Introduction to Online Games and E-business Infrastructure, Vol. 2004.
42. Taylor, T. L. (2002) Whose Game Is This Anyway?Negotiating Corporate Ownership in a Virtual World, In *Computer Games and Digital Cultures*(Ed, F., M.) Tampere University Press, Tampere, Finland.
43. Vasilopoulou, K., Pouloudi, N., Patronidou S. & Poulymenakou, A. (2002) Business models: A Proposed Framework, In *e-Business and e-Work Annual Conference*Prague, Czech Republic, pp. 1003-1009.
44. Wathne, K. and Heide, J. (2001), Choice of Supplier in Embedded Markets: Relationship and Marketing Program Effect, *Journal of Marketing,* **65,** 36-51.
45. Williams, R. and Cothrel, J. (2000), Four Smart Ways To Run Online Communities, *Sloan Management Review,* **41,** 81-91.