

Business Models for Online Communities: The Case of the Virtual Worlds Industry in China

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Abstract

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). This paper identifies the challenges that developers of VWs will face in their efforts to find viable business models. This is a single case study of China as an exploratory project to determine the issues surrounding business models for virtual world developers and users. The paper discusses the feedback effects between broadband adoption and online games as well as issues such as culture, history, Waigua, private servers, virtual property trade, developer control, governance, and regulation. In spite of the profitability of major Chinese VW operators, close observation of the Chinese case suggests that even the most successful VW operators are still in the early stages of their business model development.

1. Introduction

As the Internet continues to grow worldwide, Internet-based channels have become increasingly important for communication. As a result, online communities of many forms and for various purposes have developed and have enabled people to work, socialize and entertainment themselves. Among the many types examples of online communities, a particularly interesting phenomenon is the virtual world (VW), a persistent synthetic environment where people communicate with each other using a virtual persona, often called an avatar. VWs are a type of online game that can have thousands of people involved and potentially interacting at the same time. The vast majority of popular online games in China are VWs.

MacInnes^[30] provided an overview and framework for understanding the VW phenomenon. It is now important to supplement this work through case studies. We chose to begin with a single case study of the Chinese online game industry because its market for VWs is growing more quickly than in many other countries due to the rapid adoption of broadband among other factors. Social, legal and other environmental issues are discussed in this paper from the perspective of business models. The challenges and opportunities facing the current Chinese VW industry are not merely country specific. The same

issues are likely to play out as less developed VW markets in North America and Europe grow. The lessons from this case can also be compared to other Internet based industries using the dynamic business model framework for emerging technologies.^[30]

This is a single case study of China as an exploratory project to determine the issues surrounding business models for virtual world developers and users. It is appropriate to begin by discussing some of the characteristics of China's national culture. In this way the conclusions and perspectives of this paper can be best put into perspective when applied to other countries as well as to other emerging technologies. We recognize that in a nation of more than one billion people it can be difficult to make generalizations. There are nonetheless certain traits that characterize the Chinese population that have come as a result of a shared heritage and governance structure. Based on these general traits we categorize the country using Hofstede's national culture dimensions.^[23] According to Hofstede, there are five independent dimensions: Power Distance, Individualism vs. Collectivism, Masculinity vs. Femininity, Uncertainty Avoidance and Long-term vs. Short-term Orientation. We make the following assumptions about Chinese national culture for the purpose of this paper. First, it exhibits strong power distance, meaning the unbalanced distribution of power in society is not strongly challenged by those who are at less powerful social echelons. It also emphasizes collectivism over individualism. It does not emphasize masculinity. It has a low degree of uncertainty avoidance, meaning the culture generally allows and endures a relatively high degree of uncertainty or more chaotic situations. It also has a long-term orientation, meaning the culture puts a strong emphasis on so-called long-term orientation values, including perseverance.

Understanding the national culture characteristics of China is helpful in recognizing how and why the VW industry in China has grown so quickly. For example, the culture's emphasis on strong power distance may have been one of the underlying reasons why so many Chinese people continue to play online games, the majority of which adopt a mechanism that encourages and rewards players to constantly strive to reach to the next level of power within the virtual world. Also, many games center their storylines on the formation of competing groups or tribes. In order for any tribe within the virtual world to

prevail over its competitors, the players within that tribe have to collaborate closely and even sacrifice for each other in some cases, which may particularly appeal to Chinese people because of their cultural emphasis on collectivism.

This paper addresses a number of questions. What alternative strategies are available to Chinese online game operators who are facing an increasingly competitive market? Will Chinese online game companies move upstream in their value chain? What is the role of broadband in the development of the industry? How is Chinese society reacting to this new form of entertainment? Why has the online game industry achieved greater success in China than stand-alone computer games?

2. Theoretical context

The growth of the Internet has enabled many new virtual communities to be established. One of the key issues facing a commercial virtual community is finding a profitable business model that also fosters the initial growth of the community toward critical mass. Early virtual communities were mainly scientific but more recent developments have motivated people to congregate in a virtual space to share personal interests. Virtual worlds provide a new level of graphical richness to virtual communities while also supporting complex market activities.

The early years of the Internet emphasized bringing together researchers but once many universities were connected, communities based on personal interests developed. These often involved hobbies and entertainment.^[33] In these early days the most common technologies were e-mail and listservs that later evolved into bulletin boards and MUDs where people began to create fantasy worlds.^[16] These were forerunners of today's graphical virtual worlds.

Research about online communities has evolved. Scholars have documented the effectiveness and use of virtual communities in society to foster, for example, civic behavior^[14] and social resistance movements.^[19] Virtual communities can also be used to create, gather, organize, and manage knowledge.^{[15] [18] [24] [35]} They have also 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.^{[26] [35]} These communities often result in criticism of companies, however.^[29]

Virtual communities can be classified according to types of activities and membership. For example Hagel and Armstrong^[22] identified four categories of online communities: communities of transactions, communities of interest, communities of fantasy, and communities of relationship. Similarly Klang and Olsson^[27] divide 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. Klang and Olsson^[27] 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.

Many users are willing to pay for communities such as the Internet Chess Club.^[21] 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. Design assumptions of the community will often determine whether developers want to encourage or discourage the profit motives of users. Lack of company control can cause difficulties. 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.

Because of the revenue streams that virtual worlds are now able to generate, this study focuses on the business model aspects of those 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^[30] 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.

Even though these stages were conceptualized as a progression in evolution of an IT company, these steps are by no means linear as there are likely to be iterations and overlaps.

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 other scholars have identified in each of the four stages 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^[20] 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^[36] point out that issues of regulation and policy are critical to this effect. Similarly Schroder and Yin^[34] 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^[38] 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^[1] identify four factors that can make a business successful: 1) efficiency in the form of reduced transaction costs; 2) complementarities between technologies, activities and products; 3) lock-in through

network externalities high switching costs; and 4) novelty through new structures, content and participants. 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.^[39] With some users developing their own businesses, developers lose some control.

3. Current state of the VW industry in China

In 2003, China's Internet game industry had revenues of RMB 1.32 billion yuan (US \$160 million), an increase of 45.8% over the year 2002, and the industry generated another RMB 8.71 billion yuan (US \$1.05 billion) for the telecommunication industry and RMB 3.5 billion yuan (US \$424 million) for the IT industry. By the end of 2007, the industry is expected to reach a market valuation of RMB 6.7 billion yuan (US \$811 million) with 41.8 million online game players, 29.5% of total Internet users in China.^[3] According to CCID Consulting, the online game industry will have a valuation of RMB 3.5 billion yuan (US \$424 million) in 2004 with a growth rate of about 80%.

The VW industry in China has been undergoing exponential growth while stimulating other industries as telecommunication, information technology, and media through closely related as well as newly expanded value chain connections. One of the biggest drivers of the online game industry is the expansion of broadband in China.^[28] Major Chinese telecom and broadband companies, such as China Netcom, China Telecom, China Unicom and Great Wall Broadband Network, have all heavily promoted the installation and usage of broadband in the past two years. It is expected that China will be the world's largest broadband market by the end of 2004.^[4]

The initial installation and equipment fee in Chinese cities has dropped to around US \$30-40, and is sometimes free with a one year contract. The monthly fee for broadband usage has been within the range of US \$25-30 for 120 hours of usage per month.^[6] Statistics from the China Internet Network Information Center show that China had around 80 million Internet users in 2003. This number has surpassed Japan making China the second largest country in terms of the absolute number of Internet users. However, the number of Internet users in China still only constitutes about 5.2% of its entire population, a percentage that is less than half the average global level of 10.7%. Among Chinese Internet users, broadband users have moved beyond 10 million, a number that serves as a threshold for potential "avalanche-effect" growth, following the example of the telephone in China.^[7] According to an estimate from the Telecom Research Institute of the Information Industry Ministry, the number

of Chinese broadband users will exceed 25 million in 2004.^[42]

The bandwidth from dial-up Internet connections is often too narrow for online games. The rapid adoption of broadband has ignited tremendous growth in the country's online game industry. There are also feedback effects as the game industry has likewise led to additional broadband adoption. According to the 2003 Chinese Game Industry Report released by PopSoft, one of the major software magazines in China, there are currently about 20 million online game users in the country, of whom half are actively paying money to play online games on a monthly basis. Among those active players, about 68% play online games at net cafes, of which all are equipped with broadband Internet connections.^[9] Currently, online games are one of the major broadband applications in China, together with online multimedia entertainment services, file swapping services and online education. About half of all money spent by online game players is for connection costs and only about 30% of the money is for game time itself according to a 2003 survey of 180,000 users conducted by the Game Industry Committee of the Chinese Association of Publisher Professionals.^[11]

While Japan has excelled at producing computer games, the number of people who play online games remains low compared to China and Korea.^[40] Unlike Korea, where the government has promoted the game industry through investments and preferential policies, it was not until recently that the Chinese government established policies congenial toward the industry and also invested modest amounts to support the development of home-grown generic online game engines. Therefore, China's online game industry has become prosperous mainly as a result of the fast growth in broadband usage, particularly in the cities.

Of course, because users have to buy either "point cards" or monthly accounts in order to log into the game servers to play, online games are generally immune to traditional forms of piracy, a problem that has plagued Asian software and stand-alone computer and console game industries.^[17] This piracy-free characteristic of online games has thus contributed to the fast growth of the industry in Asia.

4. Development of the VW industry in China

The fast growth of online game industry in China began around 2001 when Shanghai-based Shanda Networking imported the online game *The Legend of Mir* from Korean game developer Wemade, which later proved to be one of the most successful online games in China. Nowadays, the *Legend of Mir 2*, still operated by Shanda Networking, has 60 million registered users, with simultaneous players as high as 520,000.^[25] By charging each registered user RMB 35 yuan (US \$4.24) for a

month of online time, *The Legend of Mir* alone has helped Shanda accumulate a profit of RMB 600 million yuan (US \$73 million) over two years.^[37] Shanda's success has inspired many other Chinese companies to invest in the fast-growing VW industry, including all four of the top portal websites in China, Sina.com, Sohu.com, NetEase and Tom.com.^[32]

The dynamic business model framework for emerging technologies^[30] identifies four stages in the development of business models that influence business evolution: 1) factors to overcome technical problems; 2) factors to overcome environmental problems including legal, societal, and economic issues; 3) factors to overcome business related obstacles, which are the traditional business model components such as sources of revenue and customer value; and 4) factors to overcome at a time of maturity.

On the surface, by importing online games from Korea, China game operators were able to skip both the technical and environmental stages of the dynamic business model framework for emerging technologies and thrive on this fairly simple import-license-subscription-based business model without needing to add distinctive user value to it. However, close observation regarding the current online game market in China actually suggest something almost the opposite.

The initial success of some online game operators in China and the tremendous financial incentive blinded most of the later entries in the market, especially in terms of their business model thinking and planning. Almost all of the online game concerns in China have been focusing on the easy revenue sources, such as charging users for online time and sharing profits with telecom and ISP companies. Few have considered innovative revenue models. As a result, they have adopted a simple business model, which hardly adds any distinctive value to consumers once the market became saturated with popular online games. They pay high upfront fees to import games from abroad, particularly Korea.^[41] (p. 4). Almost none of the early entries of the market were interested in attempting an alternative strategy, such as developing the game locally. One explanation is that Chinese online game operators have not had sufficiently experienced developers and technical expertise to develop their own games. However, since the Chinese game operators were so eager to obtain the licensing right of popular online games from abroad and operate them in the local market for quick profits, bargaining power rested almost entirely with Korean developers as they controlled the scarce resources - popular game titles - in the Chinese market.^[41] As a result, Chinese online game operators usually have to pay a large upfront licensing fee, which can be as high as \$1-2 million US, plus a large portion, as high as 50%, of later operating profits. As well, Korean game developers were able to do this while providing poorly developed games with many bugs. They had little

incentive to work with the Chinese operators to address these issues. As a result, operating risks were born almost entirely by Chinese operators.

Even as Chinese online providers have begun developing games in the past two years, two-thirds are still imported, with most, including the most popular, originating in Korea. An anonymous industry expert working for a Chinese game development studio interviewed for this paper estimated that Korean online game developers have taken 40% of the total annual revenue of the online game industry in China, and 60% of profits. This has resulted in some high profile disputes between Chinese game operators and their Korean game licensors. Wemade, for example, jettisoned its long-time partner Shanda, and instead licensed Legend of Mir 3 to OPTISP, a competing Chinese online game operator.^{1 [10]}

The weak bargaining position of Chinese online game operators also has meant that bugs have marred the licensed games. The Chinese game operators are not given access to the source code. Troubleshooting problems with licensors abroad has been time-consuming and ineffective.

Developing games in China has other advantages. Sail Yip, CEO of Shanghai-based game company Glosun Technology, pointed out that local developers are better able to identify and take advantage of the country's rich history and culture to tailor games toward local tastes.^[43] Westward Journey, developed by NetEase, a major Chinese portal website, was able to attract about 1.2 million subscribers within its first year and has been one of the few top 10 most popular online games in the Chinese market. It was based on a well-known classic Chinese novel, Journey to the West

In 2003 one of China's biggest software companies, Kingsoft Co., launched the first domestically made online game. Because of their success with the game the company decided to spend US \$ 6 million in research and development to expand its activities in the area.^[5]

According to Kevin Bae, manager of marketing services at NCsoft, Korea's largest online game company, Korea shares some cultural similarities with China and because of that Korean developers have been able to successfully license games to China.^[41]

5. Issues in managing virtual world communities in China

In spite of the profitability of major Chinese VW operators, close observation of the Chinese case suggest that even the most successful VW operators are still in the early stages in terms of the four stages in the development of business models that influence business evolution.^[30]

China's VW industry has so far initiated little innovation in terms of business models or online game technologies except in developing some online real-time payment systems to facilitate game distribution through various outlets and users' purchase of online game point cards and monthly cards. In the past, the focus of competition in the Chinese VW industry was on improving distribution channels and operating efficiency. Though the technology and industry have evolved over the past few years, companies still remain in the process of overcoming some of the early stage obstacles that they have failed to effectively deal with so far. The industry is currently moving through the second iteration of the business model stages, having to adjust to new technical and environmental issues that were not anticipated in the first years.

Waigua is a type of software designed to automatically conduct activities for players within the gaming environment in order to quickly increase their level even when they are not actually at their computer. Waigua is thus similar to the concept of "gold farming" discussed in the online game literature, where users develop macros that enable them to accumulate digital assets without having to engage in the effort typically required to achieve this.

Savvy online game players tend to take advantage of even the slightest design weakness in a VW environment to help them gain advantage in the gaming environment and ultimately obtain financial gains.^[31] Game users will attempt to develop tools like Waigua to substantially decrease the amount of time they otherwise will have to spend in order to make progress in the game. Users of Waigua have an advantage over others and this has created problems for the industry in China. About 60% online game players in China have used Waigua of some kind at least once.^[13] The Waigua phenomenon is also present in Korea and other countries.

By using Waigua, a player can enhance his avatar's skill, experience, health, wealth and other areas so quickly that he can reach a much higher level in the VW within days, whereas non-users would take more than six months to achieve the same level. As a result, Waigua substantially decreases game players' online play time especially in those games that have a well-defined end of some kind. This reduces the game provider's potential revenue from customers. Even though many games do not have a well-defined end and those players who quickly reach a high level of power within the game by using Waigua may have incentives to remain in the game showing off their "achievements," such players' overall playing time will still be shorter than otherwise because to obtain a fairly sophisticated level of power within the VW is usually the most time-consuming aspect of playing. More importantly, some players' cheating through using Waigua damages the expectation of players of a balanced and fair environment. Players who do not use Waigua are

¹ The person interview requested to remain anonymous.

at a disadvantage when competing with those who do and therefore tend to become frustrated and dissatisfied. As a result, the churn rate of an online game is likely to increase when it is known to have Waigua exploits. The developing and trading of Waigua software and dedicated Waiguai hardware, usually called Waigua cards, have formed an underground industry in China, which has a significant negative impact on VW developers.

To combat this problem, online game operators and developers have to overcome both technical and environmental challenges. Firstly, how the use of Waigua should be detected, prevented, and punished remains a technical challenge for the industry. Some developers have resorted to encrypting technologies, which makes the development of corresponding Waigua for the game much more difficult. Others have designed their games in such a way that the player cannot switch among windows while playing, which prevents some Waigua from being used. There are several other innovative solutions. One company, for example, created a virtual exile island within the VW. If a player is found using Waigua, his avatar is exiled to the island by the game master, where levels would be substantially decreased. If such a player lets the Waigua run while away for hours, the avatar will be destroyed and the player has to begin the game again from the beginning. Some operators have suspended or canceled accounts. A purely technical solution is unlikely to entirely solve the Waigua problem, however, because financial incentives, technical challenge, and the satisfaction of developing Waigua to defeat counter-Waigua technologies will always inspire some to do this.

Action at the environmental level is likely also necessary to control Waigua. Threat of lawsuits against Waigua developers and users can be effective. Many websites that previously promoted or sold Waigua software in China have been closed down recently due to their fear of being sued. Many game operators have vowed to prosecute Waigua developers. The Chinese government has also officially cracked down upon Waigua development and usage.

Private servers are an even bigger potential problem for game providers than Waigua. "Private server" refer to the situation where the server source code is stolen, hacked, or otherwise leaked. As a result, some people set up their own game servers using the leaked source code and charge users for playing on their own servers. In many cases, these people do not even utilize dedicated game servers but common Internet servers in order to cut costs. Not only do those people who run such illegal private servers not pay any licensing fee to the game developer, they typically charge players lower fees, which results in substantially lower revenue for the game operator. This Chinese VW industry has been working closely with the government and law enforcement authorities to crack down upon the usage and spread of private servers in China.

Another important issue in managing virtual worlds is the trade in digital items. When users associate VW items with value demonstrated in real world markets, the developer might become liable for loss due to circumstances within its control. Systems therefore must be protected against hacking, cheating, and scamming. The company Arctic Ice, for example, did not sufficiently secure its systems from hacking and in 2003 was found liable by Beijing's Chaoyang District People's Court for a player's lost virtual property.^[8] This may be the first case of its type in the world but others are certain to follow. VW developers 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.

These property right claims will need to be resolved before more sophisticated transactions such as bartering with physical goods and seamless exchange between virtual and real currency can be executed.

One of the most important considerations for game developers and operators is to create a positive environment using technical, non-technical, direct and indirect methods so that players' virtual property and other items within the VW that hold value within the community are protected.^[31] Recent measures taken by Chinese game concerns to achieve this end include the establishment of a group of independent game players with the mission of monitoring and investigating every aspect of the service provided by operators that is relevant for players such as customer service, performance of game masters, technical support, game-related dispute settlement, and planning for new games. Such independent players monitor the above operational aspects of game operators to ensure that it behaves in a fair and transparent fashion.

Oversight of the game master, for example, is an important role. A game master is a network administrator that oversees the virtual world. She has access to player-related information and data within the VW and has the ability to reward or punish players. It is thus a powerful and sensitive position and if her behaviour is unethical this could create problems for the operator. To ensure that game masters behave in an ethical and appropriate manner, some game companies have installed surveillance monitors in rooms where game masters work; installed action-tracking software on every computer through which they conduct their responsibilities; kept track of every word a game master has uttered in the game, every place a game master has been to and every action a game master has taken within the game; and bundled game masters' accounts with particular IPs so that they can only have their system privileges on certain computers. The game master's

system privileges in solving sensitive issues such as virtual property are balanced among three parts: customer service, technical support, and the game master. Thus a Game Master cannot take actions single-handedly. Some game operators have promised rewards as high as \$10,000 for anybody who can provide evidence that a game master has behaved inappropriately, such as through selling virtual property or helping certain players gain advantages in the virtual world.

The above measures reflect controls from both operators and game players themselves^[31] developed a diagram, represented in Figure 1, to show the different levels of control that can be undertaken in VWs. Hobbesian communities emerge when the developer does not set or enforce rules and does not provide the tools to foster governance by the players. Panopticon communities, in contrast, are under the absolute control of the developer, who sets and strictly enforces rules without input from the players. 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. Shared governance communities are likely to grow as developers gain experience in managing social dynamics and begin to understand the incentives and rules necessary to enable joint governance of their creations.

Chinese game operators are moving toward the shared governance scenario, as can be seen by their attempts to give players a role in developing a positive community atmosphere. Panopticon communities have not been common in China's VW industry, which may be related to one of the national culture characteristics of China discussed at the beginning of this paper: low degree of uncertainty avoidance. Chinese culture tends to tolerate, and in some sense even celebrate, uncertain situations where rules or goals are not clearly defined or multiple factors come into play simultaneously. As a result, a Panopticon virtual community may not appeal to most Chinese online game users because its rules are meticulously stipulated and enforced by game developers and therefore allow almost no uncertainty within the VW.

The relatively simple business model of the Chinese online game industry has left a number of issues unresolved at the stages of overcoming technical and environmental factors. As discussed so far in this paper, the competition of Chinese operators have been traditionally based on scrambling for the best imported game titles from overseas, improving operational efficiency, establishing and expanding distribution channels, overcoming first stage problems, and, more recently, shifting toward the stage of overcoming environmental factors, such as the legal, governance and economic aspects of VWs.

It is expected that more social aspects of the online game industry are and will come into play in the industry. For example, in April 2004, Chinese Ministry of Culture

established a committee to inspect the content of imported console, stand-alone computer, and online games that contain excessive violence, sexual, or other problematic content. This government initiative is partially a response to a increased concern among some in Chinese society that too many young people, particularly students, spending too much time and money on online games whose themes are currently almost all about violence or other topics that lack do not benefit the public good. With respect to the time consuming nature of games, many young players become obsessed with virtual worlds and have a hard time differentiating the real world from the virtual one in their life, to the detriment of the former.

Similar social concerns have resulted in more stringent policies against online games elsewhere in the world. For example, in Thailand, whose government is concerned that games are highly addictive, there is a ban on people younger than 18 years old from playing online games between 10 pm to 6 am. The government is also concerned that players spend too much on virtual property or other game related items and is considering other measures to restrict activities of young people. These include forcing players under 18 offline if they spend more than two consecutive hours on a game. These regulations have hurt revenues of game operators, particularly those from Korea. There is some question about how such restrictions will be addressed in global trade regimes.

Chinese game operators are currently in their second iteration of the dynamic business model framework for emerging technologies and, after addressing many of the new technical and environmental issues will move toward developing new revenue models. The era of "low hanging fruit" has come to an end and local development is likely to increase.

As is common with emerging technologies in rapid growth, Chinese online games have had to address numerous business model challenges. At the same time implementation of other technologies provides some potential solutions for the industry. For example, anonymity is a major challenge for online communities because it enables users to behave in socially detrimental ways without consequence. The Chinese government has established a second generation national ID card system that could help the industry to overcome this issue among others. This system will employ smart cards that electronically store personal data about card holders such as gender, age, and address. The system will be launched in 2005 and completed by the end of 2008.

While the industry's current focus on environmental factors will continue, it will gradually shift focus toward factors related to revenue models. This is illustrated in Figure 2. While still in early iterations, the industry has matured somewhat, as can be seen by the movement toward listings in overseas financial markets by companies such as Shanda.

The Chinese VW industry has relied on import licenses and needs to move toward a new model. Barriers to entry under the existing model are low and it is increasingly difficult for companies to differentiate themselves in a crowded market. Bargaining power is concentrated with the upstream companies, usually overseas developers, and risk is born largely by local operators. The online game industry has not yet been accepted as a mainstream format for entertainment within the Chinese society and thus the government is likely to impose greater regulatory restrictions to minimize their negative societal impact. Game users will also become more sophisticated and selective as the industry continues to grow and evolve. All of these factors are harbingers of greater competition. Some Chinese game companies are no longer operating the products they imported from Korea. This may be an early sign of a shift toward a new approach.

There are several possible paths as companies implement new third stage revenue models. Virtual property transactions, for example, may result in business opportunities for existing VW operators. Many developers are exploring the possibility of selling digital game items directly to users or otherwise profiting from player to player transactions. This model carries legal risks, however. Among the current virtual property trading initiatives, E83 International, launched in Taiwan^[2] in November 2003, seems to have adopted some sophisticated techniques to facilitate the smooth trading of virtual property between players and protect their interests. The company was owned by Korean company NEXIAN but has its operations in the greater China area. The website maintains a database that retains information regarding all aspects of virtual property transactions that its registered members have conducted so that such information can be turned in to law enforcement authorities should any problems with the transactions arise later. Also, E83 International requires registered members to convert real money into virtual currency on the website before they can complete the transaction process. Such a combination of both real and virtual currency for virtual property transactions helps prevent fraud. The growth of virtual property transaction websites such as www.go2online.com.cn, ibay.com.cn, and www.56173.com, shows that their exchange services are valuable to many players. They have reduced the risk, both physically and financially, which players might otherwise face if they conduct such transactions offline on their own. The company attracted more than 1,000 registrations in its first 5 days of operation.

Virtual property transactions either conducted between game operators and players or among players themselves have been among early attempts of business model innovation initiated by online game companies. For example, Sina.com, one of the major Chinese portal websites, introduced a new portal channel called Match Channel at its Taiwan website^[2] in February 2004, which

is an auction platform solely devoted to virtual property trading among game players.^[12] Such endeavors may evolve into larger scale e-commerce activities utilizing VWs as a platform. This is only one of many options that online game industry can employ in establishing new revenue models. They can also sell game derivatives such as guidebooks, T-shirts, dolls, and toys that follow from virtual characters and storylines. Operators can also move toward a more vertically integrated value chain by developing their own games and taking advantage of potential convergence with traditional media and advertising.

6. Conclusion

This paper has used the dynamic business model framework for emerging technologies^[30] as a reference model for the discussion on the Chinese VW industry. The Chinese case provides a number of interesting examples for the management of virtual communities. Managing player behaviour is complex because there are many opportunities for creating problems for the community. In particular Waigua devalues in-game experience and frustrate honest players. Source code must be protected carefully as private servers can directly reduce revenue for operators. A Chinese court has decided that an operator can be held liable for a player's loss of virtual property even it attempts to retain rights through a EULA. VWs in China are devolving some power to players through joint governance committees. Government oversight is increasing as VWs become more popular.

As the Chinese VW industry continues to overcome factors at early stages of development and different industries are converging and identifying new potential business models, we expect that future VWs will further resemble the real world, not only visually but also in terms of their economic activities, the communicative channels they provides to users, and their ability to facilitate e-commerce. As a result, the day when VWs are accepted in society not only as mainstream entertainment but also as a mainstream communication format is approaching.

There is great potential for research on this industry. Future papers can address a number of questions such as the following. How will environmental factors shape the future of the VW industry? How will the VW industry converge with other industries? How will VWs influence real world society? While academic interest in this industry is still at an early stage it will grow as societal, legal, and business issues related to VWs become better known.

7. References

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Figure 1: Control in Virtual World Communities

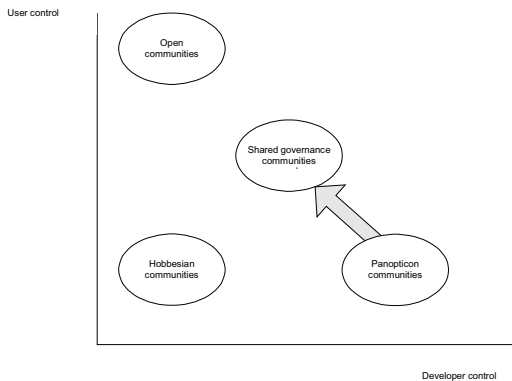


Figure 2: Trends in the Chinese VW Industry Mapped According to the Dynamic Business Model Framework

