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LIVING IN MULTIPLE SPACES:

EXTENDING THE BUSINESS ENVIRONMENT THROUGH MMORPGS AND

VIRTUAL WORLDS

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BIOGRAPHICAL NOTES

Prof. Feng Li is Chair of E-Business Development at Newcastle University Business School, UK. His research has centrally focused the Internet and e-Business, and emerging strategies, business models and organisational designs in the network economy. He was a Council Member of the British Academy of Management (BAM) and has been Chair of the BAM E-Business & E-Government Special Interest Group since 2003. His work on Internet Banking Strategies and Business Models, and on the evolving Telecom Value Networks and Pricing Models were extensively reported by the media. His new book, *What is e-Business? How the Internet Transforms Organizations*, was published by Blackwell (Oxford).

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ABSTRACT

The rapid development of Massively Multiplayer Online Role Playing Games (MMORPG) is creating new virtual worlds that significantly extend our business environment. Increasingly, organisations and individuals have to live in multiple spaces incorporating the physical, the electronic and the virtual spaces, which are creating numerous new business (as well as social and technological) opportunities and challenges. Today, MMORPGs – particularly virtual social worlds and online fantasy games - have evolved far beyond mere online computer games, and they are increasingly becoming the next generation user interface with the 3D internet, and are played by people of all ages and sexes, from all walks of lives, in both developed and developing countries. Some MMORPGs, such as the World of Warcraft, are not only generating billion dollar (US) plus revenues each year through subscription fees, but they are also creating numerous business opportunities for the players themselves, and for existing and new businesses to offer products and services to the players. The new business environment challenges existing management theories, creates new opportunities for businesses and entrepreneurs, and call for the development of new management theories and new research methods. Although as part of the new business environment, MMORPGs are still in their infancy, we have just reached the beginning of an exponential growth period. In this paper, we will explore the new development, discuss their strategic implications for theory and practice, and highlight a series of themes for new research.

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INTRODUCTION

This paper explores the emergence of various virtual worlds associated with the so-called Massively Multi-player Online Role Play Games (MMORPGs) and their profound business implications for both theory and practice. Today, MMORPGs – particularly virtual social worlds and online fantasy games - have evolved far beyond mere online computer games, and they are increasingly becoming the next generation user interface with the 3D internet, and are played by people of all ages and sexes, from all walks of lives, in both developed and developing countries. Some MMORPGs, such as the *World of Warcraft*, are not only generating billion dollar (US) plus revenues each year through subscription fees, but they are also creating numerous business opportunities for the players themselves, and for existing and new businesses to offer products and services to the players. In this paper we argue that from a business perspective, MMORPGs should be viewed as direct extensions of the physical and electronic business environments, and in some cases, the creation of entirely new virtual business environments. Increasingly, individuals and organisations have to live in multiple spaces incorporating the physical, the electronic and the virtual spaces, which are creating numerous new business – as well as social and technological - opportunities and challenges. Understanding and managing the complex interactions between the physical, electronic and virtual spaces has become a significant challenge for existing management theory and practice, and it also call for the development of new research methods. Although as part of the new business environment, MMORPGs are still in their infancy, we have just reached the beginning of an exponential growth period. So strategically, new research is urgently needed to make sense of what is happening, to develop new theories to conceptualise the characteristics of the new business environment, and to address emerging business opportunities and challenges.

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THE *NEW* 'NEW DISCOVERY'?

In 1492, Christopher Columbus led a fleet of three ships and over 100 men sailed westwards to India, as opposed the conventional easterly route by land. Although he never reached India, he accidentally 'discovered' America and thought he reached India. So he reported to his King that the world is round, not flat. His discovery redefined the global economic, social and political patterns ever since.[1]

Although there are no more new continents to be discovered on Planet Earth, we are probably on the verge of another round of 'new discovery'. Through the so-called massively multi-player online role play games (MMORPGs), including both virtual social worlds and online fantasy games, numerous virtual worlds have been created in the cyber space, each attracting from thousands to millions of participants.[2] Some of these new virtual worlds are direct reflections and extensions of our physical world (e.g. *Second Life*); while others are parallel virtual universes almost completely separated from our everyday reality in the physical world (e.g. *World of Warcraft*). In many cases, there are significant social and economic crossovers between our physical world and the virtual worlds.

This new round of spatial expansion could have far greater economic - as well as social and technological - implications than the discovery of America by Columbus. Columbus only discovered one new continent, but numerous new virtual worlds are being created in cyberspace. Columbus convinced his King and Queen that the world is round, not flat, but these virtual worlds are adding numerous new dimensions to our existing physical and electronic worlds, and these new extensions are only limited by technological constraints and by our imaginations.

Although these new worlds only exist 'virtually' and are often regarded as not 'real', for most players MMORPGs can be an extremely intense social and emotional experience, with direct actions and interactions amongst and between the players and with the virtual environment, which is perhaps more 'real' – and more engaging - than people sitting in their living rooms watching television or going to the cinema. Many players already spend as much as 40 hours per week interacting with other players and with the virtual environment, buying and owning virtual properties, developing electronic gadgets and virtual products and services for self consumption or selling to other players. Overall, billions of real dollars (US) are spent and made both on and within these games, and a growing volume of trading also takes place outside those games (e.g. on e-Bay).[3]

The business – and more broadly, the economic, social and policy - implications are very profound. The most popular MMORPG by number of subscribers is *World of Warcraft*, an online fantasy game. In early 2007, its total world wide subscribers reached 8 million, with more than 2 million players in North America, 1.5 million in Europe, and 3.5 million in China. Most subscribers paid US$15 subscription fees per month to play the game, bringing in well over US$1billion revenue each year from this one income stream alone to Blizzard Entertainment, the owner of the game.[4] By early 2008, subscribers have exceeded 10 million. In addition to monthly subscription fees, millions of real dollars are also spent by the players buying virtual gadgets and services from each other for their virtual characters (known as Avatars) – including buying fully developed avatars themselves. To feed these demands, some skilled players have given up their real life jobs and set up virtual businesses inside and outside the game. Many virtual games have their own game currencies, which can be easily converted into real world currencies.[5]

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Back in 2001, a study by Edward Castronova revealed that in *Everquest*, a fantasy MMORPG, the average gross domestic product (GDP) of each of the two million or so 'residents' was around US$2,000.[6] He arrived at the figure by measuring the monetary value of the virtual 'items', such as magic weapons and trade goods that users produce during the 20 hours or so per week they typically spent in the online world (but ignored the subscription revenue that people paid to play the game). The real world nation with an equivalent GDP per capita and population was the African nation Namibia, which had about two million people and a gross national income of $1,790 per capita. In terms of productivity, the gamers in the virtual kingdom of *Everquest* were as productive as workers in Bulgaria, but more productive than workers in China or India.

In *Second Life*, a virtual social world, the number of players (residents) has been growing exponentially. On 17th January 2007, the total number of residents was around 2.67 million, and these residents spent US$805,096 in the preceding 24 hours. By 12 March 2007, this had grown to 4.56 million, and the residents spent US$1,771,418 in the preceding 24 hours, while by 15th May 2007, 6.24 million registered users but spending dropped slightly to US$1,598,803 in the preceding 24 hours. By July 2008, total residents exceeded 14 million (http://www/secondlife.com). It should be noted that the total number of people logged on at any given time in *Second Life* tended to be in tens of thousands rather than millions (Shirky, 2007). This, however, did not stop between 150 – 200 in-world entrepreneurs each making over US$5000 per month (US$60,000 per year), with a small number of them making over US$200,000 per year. The most successful in-world entrepreneur in *Second Life* has been a virtual property developer by the name of Anshe Chung (her real name is Ailin Graef, a Chinese born language teacher living in Germany) who sells and rents virtual land and buildings in

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Second Life. In 2006, she became the first online personality to achieve a net worth in exceeding of one million US dollars from profits earned entirely inside *Second Life*. Her virtual portfolio included virtual real estates that were equivalent to 36 square kilometres of land, 'cash' holdings of many million Linden Dollars (the currency used inside *Second Life*), numerous shopping malls, store chains, stocks in other *Second Life* companies and she even established her own brands. According to the *Financial Times*, her business produced US$2.5m worth of annual revenues in 2006.[7] She also incorporated Anshe Chung Studios (www.anshechung.com) as a real world business with offices in China, employing over 80 full time employees and a large network of freelance workers worldwide. Her story has been widely reported in newspapers and magazines.

The rapid development of MMORPGs is not only creating a wave of new opportunities for entrepreneurs and businesses, but also raising serious challenges for policy and law makers. For example, should such income be taxed? And if so, how can it be enforced? Should the tax be paid for in in-world (game) currencies or in real world currencies? There are many social, political, legal and ethical issues involved, too – such as addictions by some players and the associated social and health problems. Some real world businesses have already been set up in developing countries (such as India and China), employing players who spend long hours each day playing games in order to earn in-world currencies (known as 'gold mining') which are then converted into real world currencies. It is not inconceivable that a significant amount of future economic growth and new employment opportunities could come from the continued rapid developments of MMORPGs both in developed and developing countries.[8]

Such developments are together creating a complex new business environment incorporating not only the familiar physical and electronic spaces, but also new virtual spaces

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that extend and intertwine with the existing business environment. New research is urgently needed to make sense of the new developments, to develop and test new theories to address emerging opportunities and challenges, and to guide business and entrepreneurial practice and policy making.[9] In this paper, we will conceptualise the nature and characteristics of this new business environment, discuss their implications both for real world organisations and for entrepreneurs, and highlight the need for the development of new theories and new research methods. Drawing on lessons from recent developments of e-Business and e-Commerce associated with the emergence of the electronic space, we will use identity management and marketing as examples to illustrate the unique business opportunities and challenges associated with virtual spaces.

ABOUT THIS RESEARCH

This paper is based on several strands of our work on MMORPGs over the past three years, through literature reviews, case studies, observation, participation and practical developments. Compared with researching businesses in the physical and electronic spaces, virtual businesses in MMORPGs poses several new challenges for researchers. For example, advanced game playing skills are often required to observe the best players in action in some online fantasy games, and such skills can take as many as 400-500 hours of practice to acquire.[10] The real identities of the players behind the avatars are difficult to verify, which raises issues about the quality of the data gathered through conventional methods such as interviews or questionnaires. This is further complicated by the fact that some people maintain multiple identities both within the same game and in different MMORPGs. Conducting case studies also raises issues in terms of gaining high quality access to the owners, and many of them are

reluctant to reveal business secrets or financial information. Furthermore, financial transactions often take place separately outside the virtual game environment, which sometimes are, strictly speaking, not allowed by the games. To overcome these constraints, this research gathered and used information from multiple sources, using a range of conventional and new methods.

Firstly, we identified and reviewed academic and professional studies about virtual economies and businesses in MMORPGs published in books, reports, journals and conference papers. This strand of work gives us an overview about previous research in this field, including their research questions, methodologies and methods deployed, the constraints they experienced and their main findings, as well as areas that require further work. Their theoretical, methodological and practical insights provided the starting point and basis for our research.

Secondly, we gathered a large amount of data from online and offline sources over the past three years about different MMORPGs, including media reports, commentaries, stories, experiments and anecdote evidence. This strand of work provides a broad coverage of different MMORPGs, and the business opportunities and challenges involved.

Thirdly, we regularly accessed and monitored the economic statistics published on the website of *Second Life* (http://secondlife.com/whatis/economy_stats.php). This provides us with systematic economic statistics on the evolution – as well as snap shots at different points in time - of both this particular virtual economy and the businesses it supports.

Fourthly, members of the research team spent considerable time in *Second Life* and a number of other MMORPGs over the past three years or so. The purposes are two folds. On the one hand, this allows our research team members to participate in different social and economic activities, interact with the virtual environment and other residents (their avatars), and some of us also bought and sold items. This provides us with first hand experience of what the virtual world

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is like, and why people come to such worlds, and how some of the commercial and other activities take place. On the other hand, we visited various places and organisations of interests (e.g. some real world businesses inside *second life*), and conducted mini case studies based on observations and interviews with virtual business owners and their customers. This not only provided real empirical evidence for the research, but also allowed the team to verify various stories and reports we gathered from other sources (e.g. media reports).

Fifthly, the research team purchased, developed and maintained a virtual island within *Second life.* We developed teaching, social, residential and commercial spaces, and in the process we bought and developed properties and various other items from other residents and in-world businesses; and sub-contracted a small part of the development work to a real world business and paid for their work in real world currency (rather than in the game currency, linden dollars). The facilities are open to selected postgraduate students on our course to experiment with various business ideas on the island to explore commercial and other possibilities. This experience has been invaluable in informing our research and our understanding of the virtual world in general.

Finally, an internal mailing list was setup within our university to encourage people from different disciplines, including business management and marketing, computing, architecture, law, psychology and sociology to share information and discuss emerging issues, thoughts and ideas about MMORPGs in general and *Second Life* in particular.

There are clear limitations with each of these strands of work, which reflects the emerging nature of MMORPGs as part of the new business environment, but collectively the data - and experience - derived from these work have enabled the research team to explore the business implications MMORPGs.

THE VIRTUAL SPACE: MMORPG, SYNTHETIC WORLD AND METAVERSE

The origin of the virtual space and its associated economies could go back to the 1970s with the development of text-based multi-player dungeons know as MUDs. Some MUDs went on to achieve commercial success as part of early online services since the 1980s, but most of these text-based virtual worlds occurred within the academic domains of universities. Graphic MMORPGs emerged since the late 1970s [e.g. Oubliette (1977), Avatar (1979 on PLATO), NeverWinterNights (1991 on AOL) and Shadows of Yserbius (1992) on ImagiNation Network], but it was the launch of *Ultima Online* in 1997 that attracted 100000 subscribers by the end of its first year. The commercial success of *Oltima Online* and other multi-player online games inspired others to develop and promote new graphic multiplayer games, including *Everquest*, *World of Warcraft*, and *Secondlife*, which are generally referred to as Massively Multi-player Online Role Play Games, or MMORPGs.[11]

Most MMORPGs have started as virtual gaming environments but some of them have since evolved into alternative realities, sometimes referred to as synthetic world or metaverse. Synthetic world is a term coined by Edward Castronova to illustrate virtual worlds that are created and 'synthesized' electronically. Metaverse is a term first appeared in the book *Snow Crash* to describe how a virtual reality based Internet might evolve in the future.[12] It has since been used more broadly to explore aspects of the physical world objects, actors, interfaces and networks that construct and interact with virtual environments (www.metaverseroadmap.org). There is no single, unified entity called the metaverse. Rather, there are multiple mutually-reinforcing ways in which virtualization and 3D web tools and objects are being embedded everywhere in our environment and becoming persistent features of our lives. Using a two

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dimensional matrix, the spectrum of technologies and applications ranging from augmentation to simulation; and the spectrum of interactions ranging from intimate (identity-focused) to external (world-focused), four metaverse scenarios can be identified: Argmented Reality, Life Logging, Mirror Worlds as well as Virtual Worlds (Figure 1). However, in this paper, we regard Argmented Reality and Life Logging as part of the electronic space, because they are not computer 'simulated'. We use the term metaverse to refer primarily to the simulated mirror worlds and virtual worlds.

Insert Figure 1 about here

In the last few years, some researchers have made distinctions between online fantasy games (such as *World of Warcraft* or *Eve Online*) and virtual social worlds (such as *Second Life* or *Club Penguin* for children). Online fantasy games usually evolve around a theme that defines the goals of the game, whilst virtual social worlds encourage a free-form style of playing, leaving the goals up to the participants. Compared with online fantasy games, virtual social worlds generally lacked 'structured, mission-oriented narratives; defined character roles; and explicit goals'.[13] However, both of them are simulated, 'synthetic' virtual worlds in which a large number of people can interact with the virtual environment and with each other via avatars. In this paper, both of them are regarded as MMORPGs, and the terms MMORPGs and virtual worlds are used broadly and interchangeably with synthetic world and metaverse.

THE EVOLUTION OF MMORPGS AND VIRTUAL WORLDS

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The widespread proliferation of information and communications technologies (ICTs) has significantly shaped our business and social environment, which has led to the emergence of a new geography of the information society and economy, and a plethora of e-Business and e-Commerce activities.[14] Since the early 1990s, the evolution of the information society and economy and their spatial implications, including the geography of software and space and the interactions between software and the physical world, have been investigated from different perspectives and domains.[15] With these developments, an electronic space has emerged, which overlaps and intertwines with the physical space and place of our physical world. This has significantly increased the complexity and flexibility of our space economy for organisations and individuals, and extended our business and social environment.[16] The process is ongoing today. Although the misconception about the 'death of distance' and 'end of geography' in the information economy has largely been dismissed, the full implications and the enormous complexity of our new space economy are only beginning to be understood today.[17] The manifestation of the intertwined physical and electronic spaces has been reflected in the rapid development of e-Commerce and e-Business, social networking and other business and social activities through the Internet, which have significantly redefined the environment in which we live, work, communicate, learn, play and shop.

As the 'two spaces' continue to evolve at unprecedented complexity and speed, a new round of radical development is taking place through MMORPGs.[18] This development is far more profound than the development of the computer game industry or an additional form of electronic entertainment. Its real significance lies in the extension of our physical and electronic worlds along multiple dimensions, creating intertwined and parallel virtual universes for individuals and organisations. The distinctions between the electronic space and the virtual

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space are not always clear cut, but there are some fundamental differences between them. Whilst the electronic space is primarily an electronic representation and extension of the physical world, and people and organizations in the electronic space by and large operate within existing laws, regulations and geographical boundaries, the virtual worlds are primarily computer simulated, synthetic worlds that are more detached from the physical worlds, and some of them are in fact deliberately created to operate under very different rules (e.g. to kill or rob people). People and organizations are increasingly crossing over the boundaries between the physical, electronic and virtual spaces in undertaking various economic and social activities. The result is that growing proportion of us are living in 'multiple spaces', incorporating not only the familiar physical and electronic spaces, but also virtual spaces. This raises a range of issues from identity management to law enforcements, as well as new commercial and social opportunities and challenges. The business implications are particularly profound, which need to be systematically investigated.

FROM ELECTRONIC BUSINESS TO VIRTUAL BUSINESS

Towards the end of the last century, it was generally accepted that 'information' has become the most critical strategic resource upon which the efficiency and competitiveness of all organisations depend. The continued rapid development of ICTs has enabled organisations and individuals to acquire, store, communicate and manipulate the most important resource of the economy (i.e. information) cheaply and often in ways not possible in the past. The combination of these developments requires all organisations to review the way their activities, processes and people are organised and managed. This has created not only a plethora of activities in the name of e-Commerce, e-Business, e-Government and e-Learning, but also called for the development of a new generation of organisation and management theory for the networked, knowledge-

based, information economy, in the form of new strategies, business models, organisational designs, work organisation and inter-organisational relations.[19]

The rapid development of MMORPGs is bringing a whole set of new opportunities and challenges to our business – and social – environment. The virtual worlds can significantly extend our social and business spaces. As the economic and social interactions between the players of these games and between the players and both in-world and real-world businesses increase, the economic and social crossing-overs between the virtual, the electronic and the physical worlds become increasingly more significant. These developments are leading to the emergence of a complex multi-spaced business environment, which challenges the validity and effectiveness of existing management theories and practice.

Virtual Businesses

Today, a significant amount of economic activities already take place in these virtual worlds, and huge amount of real world money is spent on virtual characters, objects and environments. The wealth generated in virtual worlds (in game currencies) can be easily converted into real world currencies. For example, in *Second Life* alone, residents spent an equivalent of about US$50million in January 2007 for virtual products and services for their avatars. Many virtual entrepreneurs, such as fashion designers for online characters and architects for virtual properties, have given up their real world jobs to focus on their virtual, in-world businesses – and the virtual money they earn in these games are then converted into real world money. Table 1 lists some virtual businesses currently active within *Second Life*. It is interesting to note that some virtual businesses are modelled on real world businesses, but others do not have real-world equivalents, and these business ideas are evolving rapidly.

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Insert Table 1 about here

Table 2 below shows the number of *Second Life* business owners, using Positive Linden Dollar Flow (PMLF). According to *Second Life* website, PMLF looks at the flow of Linden Dollars into a unique user's account before Linden Lab Charges are applied to the account. These numbers exclude payments or receipts related to the sale or acquisition of virtual land. Businesses that are operating Linden Dollar exchanges are also excluded. Some businesses accept payment outside the Linden Economy, and those numbers are not included in these reports. The number of individuals making significant amount of money is relatively small at the moment but they are growing steadily.

Insert Table 2 about here

In December 2004, a 22-year-old gamer made history by spending US$26,500 (£13,700) on an island that exists only within the game *Project Entropia*, an MMORPG which allows thousands of players to interact with each other.[20] The Australian gamer, known by his gaming name Deathifier, bought the island in an online auction. The virtual island includes an abandoned castle and beautiful beaches ready for developing beachfront virtual properties for other virtual characters. Deathifier made money from his investment by taxing other gamers who come to his virtual land to hunt or mine for gold. He also sold plots of lands to people who wish to build virtual homes on his virtual island. Today, owning, buying, and renting virtual properties have

become very common in an increasing number of MMORPGs; and assets within different virtual worlds have become increasingly valuable both within and outside the games.

Crossing Over Different Spaces

Many commercial organisations have set up shops in these virtual worlds, and some even developed their own MMORPGs (e.g. CokeCola's *Coke Studios* and Wells Fargo Bank's *Stagecoach Island*). In many ways, the virtual world is as real as the physical world. Commercial transactions and social interactions take place between the avatars of different players either from the same city or from the other side of the world. Within many virtual worlds, players can set up virtual businesses selling products and services to other players via their avatars; and the wealth generated can then be spent on other virtual products or services, or converted into real world currencies for spending in the physical or electronic commerce worlds. Some virtual businesses can also do business directly with organisations from the physical and electronic worlds.

The cross over between the virtual, the electronic and physical worlds are taking place along multiple dimensions. On 13th May 2006, for example, BBC Radio One's Big Weekend Concert in Dundee (Scotland) was not only broadcasted on digital television and performed live to a crowd of real people, it was also staged in the virtual space of *Second Life*.[21] A large virtual crowd of avatars gathered at the concert. There is no reason why a virtual concert cannot be broadcasted live to a real world audience on television in the future. Other examples of such cross-overs include 10Lindens (http://10lindens.anshechung.com), an e-commerce website selling virtual items for use in Second Life for 10 linden dollars (the currency used within *Second Life*). This site is owned by virtual business entrepreneur Anshe Chung – the first person

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to make US$1 million within *second life*. Another example is IWOOT (http://www.iwantoneofthose.com), a UK-based online retailer offering a selection of gadgets, toys and home, office, outdoor and travel accessories, which opened a virtual store in *Second Life* in July 2007. It allows users to purchase products in *Second Life* and get them delivered to a real life address. Vodafone, the mobile phone network operator, launched Beta testing of an InsideOut service in *Second Life* (http://secondlife.vodafone.com), an in-game mobile phone system, letting users call other avatars, or using a mobile phone in the physical world to call or message someone using a virtual phone in *Second Life*.

Second Life has also been used for public lectures (e.g. Stanford and the UK National Physical Laboratory).[22] Such lectures are often used to reproduce traditional learning environments, but in many ways they could provide students with an enhanced learning experience. Various academic institutions from around the world have acquired virtual land, such as the eBusiness Island with virtual facilities for teaching, social and commercial activities, owned and maintained by a group of scholars from Newcastle University in England. .

Currently, different MMORPGs are separate virtual worlds due to different ownerships, standards, and the nature of the games. This is similar to the development of the electronic space, which used to be separated by different standards and technologies and only become fully interoperable with the development of the Internet. In the future, virtual worlds may become interoperable, creating an integrated virtual universe. A virtual character could then move from one virtual space to another without having to develop a new avatar from scratch. On 8 July 2008, IBM and Linden Lab announced that research teams from the two companies successfully teleported avatars from the *Second Life* Preview Grid into a virtual world running on an OpenSim server, marking the first time an Avatar moved from one virtual world to another.

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IBM and LindenLab regarded this as an important first step toward enabling avatars to pass freely between virtual worlds, which may create a *de facto* standard for virtual worlds. Around the same time, Google announced the launch of its own virtual world *Lively* (http://www.lively.com). Different from other virtual worlds, *Lively* is available through a browser plugin for Firefox and Internet Explorer. It does not feature one coherent world like *Second Life* but splits worlds into different rooms. Users can create their own virtual rooms, which can be embedded into any webpage. Despite its current limitations, Lively may open up possibilities for achieving interoperability between virtual worlds.[23]

New Taxonomy: Business Transactions in Multiple Spaces

From a business perspective, the evolution of the virtual world is significantly extending the range and scale of our business activities and the context within which these are taking place, which need to be systematically mapped out. For example, in addition to existing categories of e-Business activities between individuals and organisations in the physical and electronic spaces (such as B2B and B2C), similar activities are being developed in parallel in the virtual world, and more significantly, crossing over between the physical, electronic and virtual spaces. A company can be set up within a MMORPG to provide services to individual virtual consumers or other virtual companies, which creates new categories of e-Businesses, such as virtual business to virtual consumer, or virtual business to virtual business (VB2VC or VB2VB). Furthermore, such virtual relations can be extended to interact directly with entities of the physical and electronic worlds, so a virtual service can be sold to real businesses in the physical world – VB2PB (virtual business to physical business), or vice versa. A company serving the electronic or physical world can market their products and services via virtual companies inside

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MMORPGs (PB2VB or EB2VB).   Such developments will significantly complicate the interplays between the physical, the electronic and the virtual spaces and entities, with profound theoretical and practical implications.

Similar to the Internet which created an electronic transacting space, the virtual spaces necessitate the extension of the 'traditional' taxonomy of business transactions as shown in Table 3, which serves as an example to illustrate the extended categories of Business to Business Transactions (B2B) in the multi-spaced business environment.   This can be further extended by considering different type actors (e.g. consumers, governments) participating in the transactions. The most interesting types of transactions occur when there is a crossover between the three spaces.   One example is the (virtual) Dell factory on the (virtual) Dell Island in *Second Life*, where a virtual customer is allowed to 'customize your very own Dell computer in our *Second Life* factory, and then continue online to purchase a genuine Dell computer' according to the island's description, which can then be delivered to the consumer's address in the physical world.   Managing the logistics of such an operation challenges the effectiveness of existing supply chain management theories and practice.

Insert Table 3 about here

MANAGING MULTIPLE IDENTITIES IN MULTIPLE SPACES

Identity management has been one of the most difficult challenges for e-Business and e-Commerce in the electronic space, and this will become significantly more complex as millions of people from around the globe begin to live, work, trade and play in various virtual worlds of

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MMORPGs. Different from the electronic space where people by and large use their physical world identities for e-Commerce and many other activities, but in virtual worlds people often (though not always) create and maintain new identities that are not linked to the identity of the players in the physical and electronic spaces. Furthermore, because there are many different MMORPGs, the players of multiple games also require multiple virtual identities, and in some cases, players maintain multiple accounts (i.e. virtual identities) within the same MMORPG. Given that several commercial games are already reporting millions of subscribers, the complexity of managing or even understanding the identities of these players for commercial purposes can be a significant challenge. Furthermore, these virtual identities also evolve over time through social and economic interactions with the virtual - and sometimes real (e.g. some players meet up in person) - identities of other players and with the virtual environment.

From a business perspective, such growing complexity calls for the development of a new framework to distinguish activities based on the actors involved and the nature of their identities, and the spaces these actors originate from. The actors could come from three closely intertwined spaces, namely the physical, the electronic, and the virtual spaces. Because the actors (including both individuals and organisations) could live in more than one space, it is not easy to classify them, as an actor may choose to use the same identity or persona across all spaces, or using different or multiple identities for different spaces and purposes. The different combinations of identities and spaces create complex interfaces, making it increasingly difficult to classify the actors involved. A visual representation of the transactions is illustrated by Figure 2.

Insert Figure 2 about here

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The actors are represented by a projection of the type of their selected identities depending on the transacting space. In the physical space, and in many cases in the electronic space, this will be their real persona; while in the virtual space, their avatars are usually different from their identities in the physical and electronic worlds. These different identities can then assume different roles depending on the nature of the transaction. The issues of multiple identities across different spaces are not limited to individuals (personal identity) who might choose to be themselves or be someone completely different in different spaces, organisations increasingly have to face similar issues (corporate identity) as they setup shops not only in the physical world and on the Internet for e-Commerce and e-Business, but also in various virtual spaces (e.g. Dell factory in *Second Life*). The issues for organisations are perhaps not so much about managing multiple identities, but more about managing identity and brands across multiple spaces. However, the challenges they face are equally complex.

VIRTUAL MARKETING

Business developments in the virtual space may follow a similar trajectory as the development of e-Business and e-Commerce in the electronic space where some of the most significant innovations were first introduced in marketing and advertising before extending to other business functions.[24] For a marketer, however, the development of virtual spaces raises new challenges, because the traditional marketing mix theory dealing with the physical world – and to some extent the electronic world - was centred on the principles of customer satisfaction, whilst in the virtual worlds the underlying principle is primarily to provide the consumer a unique experience, and in many cases, a new identity or new life (as is the case in *Second life*). The virtual settings also provide new opportunities for promoting certain types of products and

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services in ways not possible in the physical and electronic spaces. For products and services that portray an alternative lifestyle or image in the physical world (such as fashion products and luxury products), it is possible to promote and sell them in the physical and electronic spaces and further enhance them within virtual settings. It is not surprising that companies such as Coca Cola has already engaged in developing its own MMORPG (*Coke Studios*).[25] Toyota also gives away its virtual cars inside *Second Life* for people to modify and play. Many other real world brands are experimenting with different ways of promoting and enhancing their images in the virtual worlds.

To systematically address new opportunities and challenges from a marketing perspective, we propose the construction of an overarching framework that includes three key levels:

• The first level (micro-environment) focuses on the consumers (personal identity)

• The second level (meso-environment) deals with the businesses involved and any associated corporate activities (corporate identity), and

• The third level (macro-environment) analyses the interactions and synergies between the physical, electronic and virtual worlds, and in particular, the interplays of personal and corporate identities across different spaces.

The first level dealing with the consumers (and their identities) needs to examine the range of consumer segments involved. Within the physical and electronic worlds, a plethora of consumer segmentation studies have been devoted to examining the different attributes and criteria for alternative buying occasions and different products and services. However, there has been a scarcity of consumer segmentation research within virtual worlds. Such work will provide the necessary support for targeting the right audience and for developing the ideal positioning strategy for these virtual identities. Similarly, the traditional consumer behaviour

models need to be tested to verify whether these models will be applicable to virtual situations and virtual identities, and whether any modification, extension or re-conceptualisation is required notwithstanding that an "identity crisis" may be looming. In addition, marketing research is required to illustrate how the consumer behaviour has been influenced from the ongoing interactions between these multiple-worlds. Has that behaviour been altered and if so, in what way in terms of lifestyle, attitude and buying behaviour? Do we encounter the developments of new societal trends as a result?

The second level examines the businesses involved in virtual worlds, and it may be necessary to isolate the organisations that operate only in the virtual environment from the ones which also operate in the physical and electronic environments. A key aspect to consider at this level will be the redefinition and extension of the marketing mix principles. Within the virtual environment, we are dealing with alternative products and brands and different promotional and pricing strategies, to address the needs of not only the virtual consumers and citizens, but also the real people controlling them. Therefore, how effective would it be for a physical world brand to be marketed within the virtual world, perhaps inside a particular MMORPG? Should the marketer be targeting the avatars inside the game, or the real players behind the avatars? The firms involved need to adjust their marketing mix strategies to the new environment, which need to be based on an extensive marketing research. In addition, firms may wish to avoid possible market or product/service cannibalisation, or the provision of negative connotations, i.e. trying to promote their products/services in the virtual environment without considering losing sales or even creating possible negative image associations with the physical environment. Therefore, firms need to avoid a 'corporate identity crisis', as their corporate positioning, brand image and identity may be successful in one of these spaces but may not be transcended successfully into

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other spaces. Firms also need to analyse their relationship marketing strategies aiming to maximise customer retention and loyalty when operating in multiple spaces.

The third level examines the interactions between the physical, electronic and virtual spaces in terms of the technological platform used, and the social shaping and construction of the technology. The nature and characteristics of the new business environment need to be systematically mapped out from a marketing perspective, in terms of the similarities and differences between the physical, electronic and virtual spaces; and the implications for consumers, citizens and businesses respectively in terms of alternative personal and corporate identities in different spaces. For example, is there a provision for the development of a regulatory body that will become the controlling mechanism for the virtual environment and will aim to minimise possible identity crisis either at personal or corporate level? Through what mechanisms will such a body minimise possible consumer exploitation and manipulation via the irresponsible use of technology and the consumer confusion emanating from the presence of alternative identities?

SUMMARY AND FUTURE RESEARCH

This paper discussed the emergence of the virtual space through the rapid development of MMORPGs and virtual worlds, and explored the implications for theory and practice from a business perspective. This development is significantly extending our business – and social - environment, and increasingly individuals and organisations have to live in multiple spaces and deal with the complex interplays between them. We have made some initial attempts to conceptualise the changing nature and characteristics of the new business environment, the enormous complexity in understanding and managing multiple identities in multiple spaces, the

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profound marketing implications. We also highlighted some other challenges – such as legal, policy, and methodological – involved that will have profound implications for theory and practice.[26]

Today, MMORPGs have evolved far beyond the computer game industry and electronic entertainment. Their real significance lies not only in the vast revenues they generate for the owners of these games, but also more importantly, in the new business opportunities and challenges such games create for entrepreneurs and for both in-world and real world businesses, by extending our physical and electronic environment into virtual spaces. Significant amount of economic activities are already taking place within these games and real money is being spent and made, and the size of these activities – and the total number of players – are growing exponentially. It is not unconceivable that significant future employment opportunities and sources of wealth creation could come from the effective exploitation of various virtual worlds.

Our research has clearly indicated that we are on the verge of a new round of 'new discovery' and development, which is significantly extending our social, economic and political space. The extension is only limited by our imaginations and it is evolving rapidly. Understanding and managing the complex interactions between the physical, electronic and virtual spaces will become a significant challenge for existing management theory and practice. New research is urgently needed to make sense of what is happening, and to develop effective business and policy responses.

The emergence of virtual spaces provides a plethora of new opportunities for research and theory development. There are already numerous examples of applications related to business, education and entertainment in different virtual worlds, and each of these could form its own research sub-domain (e.g. virtual-Learning or meta-Learning). Many research projects that have

been developed for the electronic space could be reproduced and extended to the virtual spaces. New research is also required to understand the development of virtual characters (avatars) and their relationships with the real life counterparts. This could prove to be one of the most difficult undertakings as distinguishing where one character stops and the other begins is not a trivial task. In many cases this may not even be possible. Privacy and confidentiality will be significant parameters in any such research project, especially in cases where the avatars reflect inner desires that are not expressed in the physical or electronic spaces. To further complicate this challenge, many fundamental rules, principles, norms and etiquette of our society may not necessarily be applicable in various virtual spaces. In order for data collected to be interpreted within the right context, the researcher would be required to have a sound understanding of the attributes and etiquette of the space in which the research takes place.

Furthermore, in some fantasy games, advanced game playing skills are often required to observe the best players in action, and such skills can take as many as 400-500 hours of practice to acquire. The real identities of the players behind avatars are difficult to ascertain or verify, which raises issues about the quality of data gathered through conventional methods such as interviews or questionnaires. This is further complicated by the fact that some people maintain multiple identities both within the same game and in different MMORPGs. Conducting case studies also raises issues in terms of gaining access to the owners, and many of them are reluctant to reveal business secrets or financial information. Furthermore, financial transactions often take place separately outside the virtual game environment. All these issues pose new methodological challenges that need to be addressed.

The emergence of the virtual spaces also calls for the extension of existing theoretical frameworks, and in many cases, the development of new theories in almost all domains of

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business management, in order to understand and manage alterative realities and their complex links to the realities in the physical and electronic spaces. The development of virtual economies will result in the emergence of new employment types, as entrepreneurial-minded users capitalise on the new opportunities. Existing organisations need to fully understand the new opportunities and challenges of the new, extended business environment.

Future research is particularly needed in the following areas to inform both theory and practice. Firstly, in depth case studies of successful entrepreneurs and virtual businesses inside different games and the special issues they have to deal with in comparison to businesses and entrepreneurs in the electronic and physical spaces. Particular attention should be paid to novel applications that have the potential to be replicated broadly. Systematic, large scale surveys would also be useful in revealing the extent to which some of the new practices are taking place.

Secondly, in depth case studies of businesses in the physical and electronic worlds that are successfully taking advantage of new opportunities in the virtual worlds, and the mechanisms through which they interact with consumers and businesses inside virtual spaces, and the way they manage the interplays between the multiple actors in multiple spaces. Particular attention should be paid to novel applications that have the potential to be replicated broadly. Quantitative surveys would also be needed in understanding the extent to which some of the new practices are taking place in different settings and contexts.

Thirdly, new conceptual frameworks are needed to systematically compare the virtual business environment with the electronic and the physical business environments. Such new frameworks need to be empirically tested and refined. For example, most MMORPGs are only regulated by the rules of play set by the game developer, in which space restrictions are limited in comparison to the physical space, and there is virtually no reproduction costs, which may have

implications for scale economy and challenge the fundamental economic principle of scarcity. The market could become near perfect through effective search functions. This strand of work need to incorporate intensive and extensive multi-disciplinary research to explore the wider social, economic, political, technological, legal, psychological and policy implications of MMORPGs and virtual worlds.

Figure 1: Metaverse Scenarios
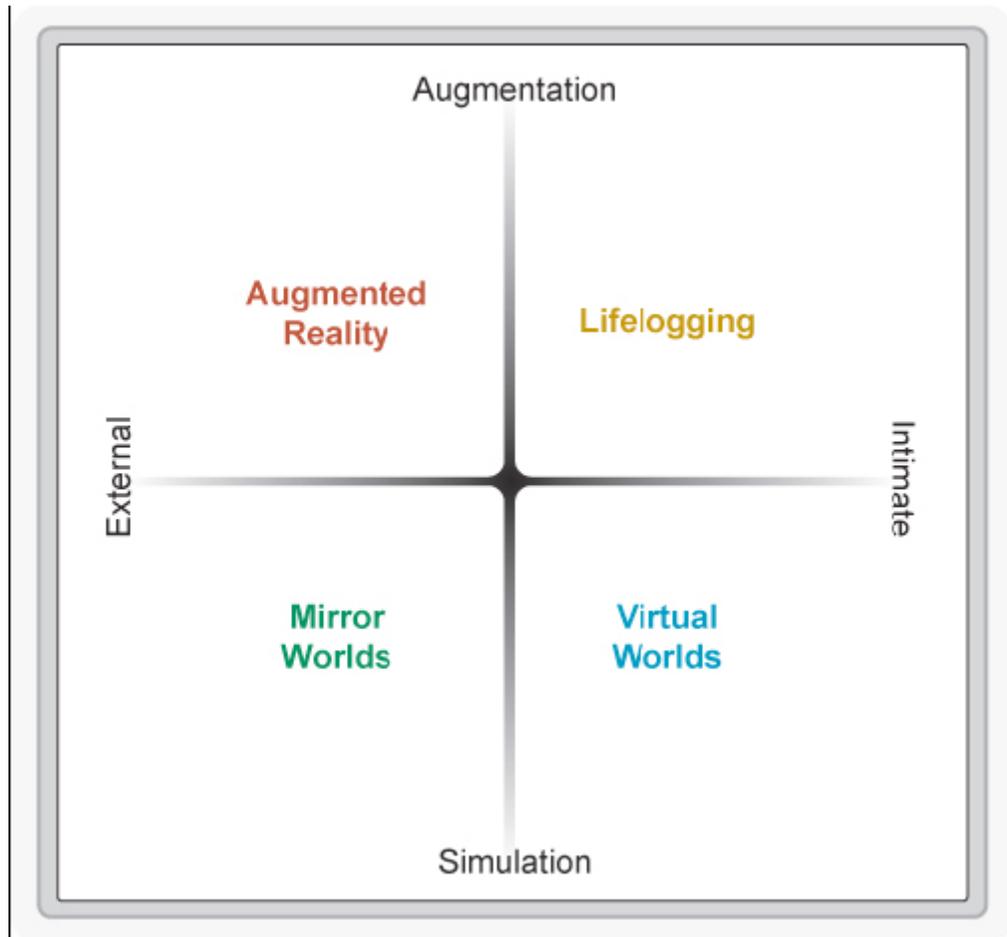
Source: Smart, J, Jamais Cascio & Jerry Paffendorf 2007) Metaverse Roadmap: Pathways to

the 3D Weds. Available from http://metaverseroadmap.org

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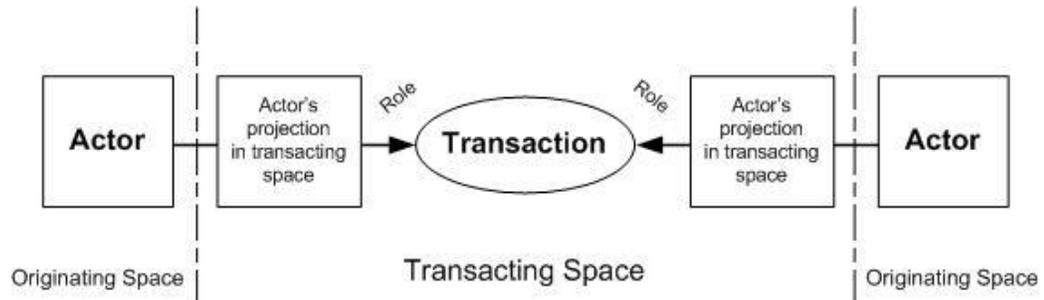**Figure 2: Multiple Identities in Different Transaction Spaces**

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Table 1: Some Business Opportunities in *Second Life*

There are as many opportunities for innovation and profit in the Second Life world as in the Real World. Open a nightclub, sell jewellery, become a land speculator; the choice is yours to make. Thousands of residents are making part or all of their real life income from their Second Life Businesses. By way of example, here are just a few in-world business occupations which Residents founded and currently run, and make part or all of their real life living from.

• Party and wedding planner	• musician
• pet manufacturer	• custom animation creator
• tattooist	• theme park developer
• nightclub owner	• real estate speculator
• automotive manufacturer	• vacation resort owner
• fashion designer	• advertiser
• aerospace engineer	• bodyguard
• custom avatar designer	• magazine
• jewellery maker	• publisher
• architect	• private detective
• XML coder	• writer
• freelance scripter	• gamer
• game developer	• landscaper
• fine artist	• publicist
• machinima set designer	• special effects designer
• tour guide	• gunsmith
• dancer	• hug maker

Source: http://secondlife.com/whatis/businesses.php

Table 2: Estimating the Number of Second Life Business Owners Using Positive Monthly

Linden Dollar Flow PMLF)

US Dollar Equivalent PMLF US$)	10/2006	12/2006	01/2007	07/ 2007	10/2007	12/ 2007	01/2008	02/2008	03/ 2008	04/2008	05/2008
< $10	6,285	9,000	11,396	24,292	24,132	26,922	28,711	28,896	31,082	29,598	31,142
$10 to $50	3,402	4,535	5,671	12,540	15,213	14,618	16,417	16,212	16,566	16,999	17,383
$50 to $100	866	1,239	1,489	3,006	3,528	3,156	3,740	3,465	3,754	3,642	3,725
$100 to $200	692	921	1,119	2,149	2,477	2,237	2,436	2,357	2,389	2,493	2,468
$200 to $500	563	823	1,018	1,788	1,984	1,971	2,115	1,981	2,093	2,191	2,282
$500 to $1,000	263	350	386	727	872	830	863	861	935	961	955
$1,000 to $2,000	160	229	263	441	473	462	464	513	537	515	558
$2,000 to $5,000	92	140	188	279	320	324	333	307	367	358	378
> $5,000	41	90	97	145	157	158	156	155	165	173	189
Total Unique Users with PMLF	12,364	17,327	21,627	45,367	49,156	50,678	55,235	54,747	57,888	56,930	59,080

_Source: Second Life Economic Statistics http://secondlife.com/whatis/economy_stats.php)_

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Table 3: Business to Business Transactions in Multi-Spaced Business Environment

Business to Business Transactions	Physical Space	Electronic Space	Virtual Space
Physical Space	PB2PB	EB2PB	VB2PB
Electronic Space	PB2EB	EB2EB	VB2EB
Virtual Space	PB2VB	EB2VB	VB2VB

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