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Making Real Money in Virtual Worlds: MMORPGs and Emerging Business Opportunities, Challenges and Ethical Implications in Metaverses

Savvas Papagiannidis, Michael Bourlakis and Feng Li

Abstract

Today, millions of people from around the globe play online role playing games (MMORPG), in which a large number of players interact with one another in a virtual world, either using their existing identities in the physical world, or more often than not, through new virtual identities that might not even be remotely linked to the identities of the players in the physical world. The number of users is growing at an exponential rate and we are probably on the verge of a new development that is going to be as significant as the Internet itself. This positioning paper will discuss the business opportunities and challenges of such a virtual world, that of *Second Life*, and will examine the resultant corporate social responsibility implications focusing on the ethical and policy-related ones. This will help to identify important research questions that need to be systematically addressed.

Keywords: massively multiplayer online role playing game (MMORPG), virtual world, metaverse, entrepreneur, corporate social responsibility and ethics

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Introduction

The rapid development of massively multiplayer online role play games, also know as MMORPGs (pronounced *more-peg*), has resulted in the re-creation of many real world activities in the virtual environment. These activities are often released from many of the constraints of the physical world, although in some cases they are still primarily reflections of it. In the past few years several MMORPGs have been experiencing exponential growth and for many people they have evolved far beyond mere online games. The economic, social and policy implications for both the real physical world and the virtual world are likely to be very significant, as will be illustrated by many emerging examples later in the paper.

In this positioning paper we will focus on the business activities and commercial applications that virtual worlds can host, and examine the wider implications of these virtual environments, often referred to as 'metaverses'. We will use the case of one such metaverse, that of *Second Life (http://www.secondlife.com)*, to illustrate some of the key issues and challenges that arise when transacting in virtual environments. We will start by first considering the attributes of *Second Life*, in order to illustrate its popularity and usage, before examining how it can foster business opportunities for entrepreneurs. The paper will then move on to discussing the market implications and, based on these, propose an extension to the traditional taxonomy of business activities by including the 'meta' dimension of the environment. Following this, the paper will consider the corporate social responsibility implications of this emerging business phenomenon by focusing on important ethical and regulatory issues. This is still an emerging and rapidly evolving area and more systematic research is clearly needed and further research avenues are suggested at the end.

The rise of the metaverses

"Online games" mostly refer to games that are played over the Internet using PCs and game consoles. Such games are often based on existing stand-alone games that have been extended to support a small number of players or may even involve thousands of players simultaneously. Massively Multiplayer Online Role Playing Games (MMORPG) are usually played by a very large number of players (often in the millions). They usually evolve around a theme that defines the goals of the game or encourages a free-style of playing, leaving it up to the participants to do whatever they like in the virtual worlds. Referring to these environments as worlds "captures the open-ended and broad nature of these arenas, pointing to the ever-increasing possibilities for action within them" (Malaby, Forthcoming). On the other hand, referring to them as 'virtual' misses their 'real' elements. Consequently, instead of calling them virtual worlds they are often referred to as synthetic worlds, highlighting the fact that these worlds are products of human actions (Malaby, Forthcoming). In the context of this paper we will refer to these worlds as 'metaverses', a phrase first used in Neal Stephenson's (1992) novel *Snow Crash*, in order to describe how a virtual reality-based Internet might evolve in the future. Our choice highlights how these worlds are not just gaming environments, but extensions of our physical universe, to which they add new dimensions and domains for economic, social and leisure activities.

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Stephenson's vision has already materialised in many respects in MMORPGs such as *Second Life*. *Second Life*, which was launched in June 2003 by Linden Labs, is a continuous and persistent world that was designed to provide users with control over nearly all aspects of their world, in order to stimulate users' creativity and self-expression which would translate into a vibrant and dynamic world full of interesting content (Ondrejka, 2004c). In *Second Life* users can be whoever they want to be and do whatever they want to without many of the various constraints of the physical world. To participate in *Second Life* users need only to download and install the required software. They can then connect to the grid and customise their avatars, i.e. the virtual character that will be representing them. Each avatar's choice of body shape (assuming they will be human) and clothing style may represent the real user or may be completely different. Using their avatars, users can explore the three dimensional world and interact with the various objects and buildings through a simple-to-use interface. They can also communicate with other nearby users by typing their messages or by using the game's instant messaging facility.

According to *Second Life*'s web site (http://www.secondlife.com) on the 1st of October 2006 their world had more than 800,000 users, 343,000 of whom had logged into the system within the previous 60 days, and had spent around US$382,000 (real money) in the preceding 24 hours. By early December 2006 *Second Life*'s population not only exceeded the 1 million milestone, but doubled its population and reached 1.77 million users, who spent US$656,000 in one day. By 17th January 2007, the total number of residents had further increased to 2.67 million, with 855,063 logged on in the previous 60 days, and the residents spent US$805,096 in the preceding 24 hours. These figures not only suggest that *Second Life* has reached critical mass, demonstrated by its rapid growth, but they also illustrate the potential importance and future significance of such worlds.

The popularity of *Second Life* is not only due to the fact that participating is inexpensive, as creating a basic account is free (premium accounts cost around $72/year), but mainly due to the opportunity it provides the participants with to make anything they want out of the game. In *Second Life* users create the game, develop characters, objects and so on, and developers mainly manage the game and provide creative tools (Working Party on the Information Economy, 2005). The tools provided allow users to create objects from scratch, not just crafting them out of limited resources controlled by the world's developers. This is of paramount importance for metaverses as the users "must be able to create truly new objects, to add value and innovate during the process of creation, and the market must be allowed to determine which creations have real value" (Ondrejka, 2004b). In *Second Life*, where user creation is a major component of the world and game play, a fundamental tension exists between asking the players to create the world and then having the world operators take ownership of everything they make."(Ondrejka, 2004b) Therefore the copyright on any objects belongs to their creators, who have the right to exploit them commercially, allowing for a plethora of commercial opportunities. This raises critical issues about intellectual property management and how such rights are maintained and enforced.

In-world currency and extending the traditional taxonomy on transactions

Within *Second Life*, the residents use a virtual currency – the Linden Dollar – for commercial transactions. Linden dollars can be purchased with, and converted into,

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real world money easily. According to Yamaguchi (2004) for a virtual currency to become a meaningful one the existence of an exchange rate is a requirement. This provides a strong incentive for entrepreneurs to seek commercial opportunities in the metaverse. Not surprisingly, allowing in-world currency to be exchanged for real world currency has profound implications for the world operators' strategies (Lehdonvirta, 2005a) and for the development of the virtual worlds themselves. It has equally important implications for the users too. For example, Lehdonvirta (2005b) put forward ten different ways that users think of real-money trading and how it can affect the worlds in which they operate (e.g. 'competition', as real money trading is considering cheating if it can be used to obtain competitive advantage, or 'socialising' as real money trading allows players to express themselves through their buying behaviour or 'customisation' as real money trading makes it easier to obtain a set of assets that correspond to the player's taste).

However, it could be argued that these apply mainly to themed worlds, such as the *World of Warcraft*, in which character developing and gaining experience is a primary aim. The potential problem is that allowing a user to progress through the game by buying new skills, weapons and resources using real money can alienate other users, who feel this is a form of cheating and that it breaks the sense of achievement for those who progress without buying their progress. This is not an issue that applies to *Second Life* as there is no predetermined goal and users decide what to make out of it. On the contrary, for *Second Life* allowing users to capitalise on their creation acts as a strong incentive and motivation to innovate and find market gaps to fill. Many users have already started new businesses, which could be termed meta-businesses, and which are a hybrid of electronic business and real world organisations. Some of the most successful in-world entrepreneurs are already making significant annual income and have been enjoying considerable growth. For example, property developer Anshe Chung has become the first online personality to achieve a net worth exceeding one million US dollars from profits entirely earned inside Second Life (Anshechung.com, 2007). Her virtual portfolio includes real estate that is equivalent to 36 sq. km. of land, 'cash' holdings of several million Linden Dollars, many shopping malls, store chains, stocks in other *Second Life* companies and has even established her own brands. This also raises serious policy issues, for example, should such income be taxed? And if so how can it be enforced? In game dollars or in real world currency?

Transacting in metaverses significantly extends the range and scale of economic activities and the context within which these are taking place. Similarly to how the Internet created an electronic transacting landscape, metaverses necessitate extending the 'traditional' taxonomy by adding a new dimension, as shown in the table below for business to business transactions. The table could be further extended by considering different types of actor (e.g. consumers, governments etc) participating in the transactions.

Table 1: Extending the traditional taxonomy by adding the 'meta' dimension.

	Real	**Electronic**	**Meta**
Real	B_r2B_r	B_r2B_e	B_r2B_m
Electronic	B_e2B_r	B_e2B_e	B_e2B_m
Meta	B_m2B_r	B_m2B_e	B_v2B_m

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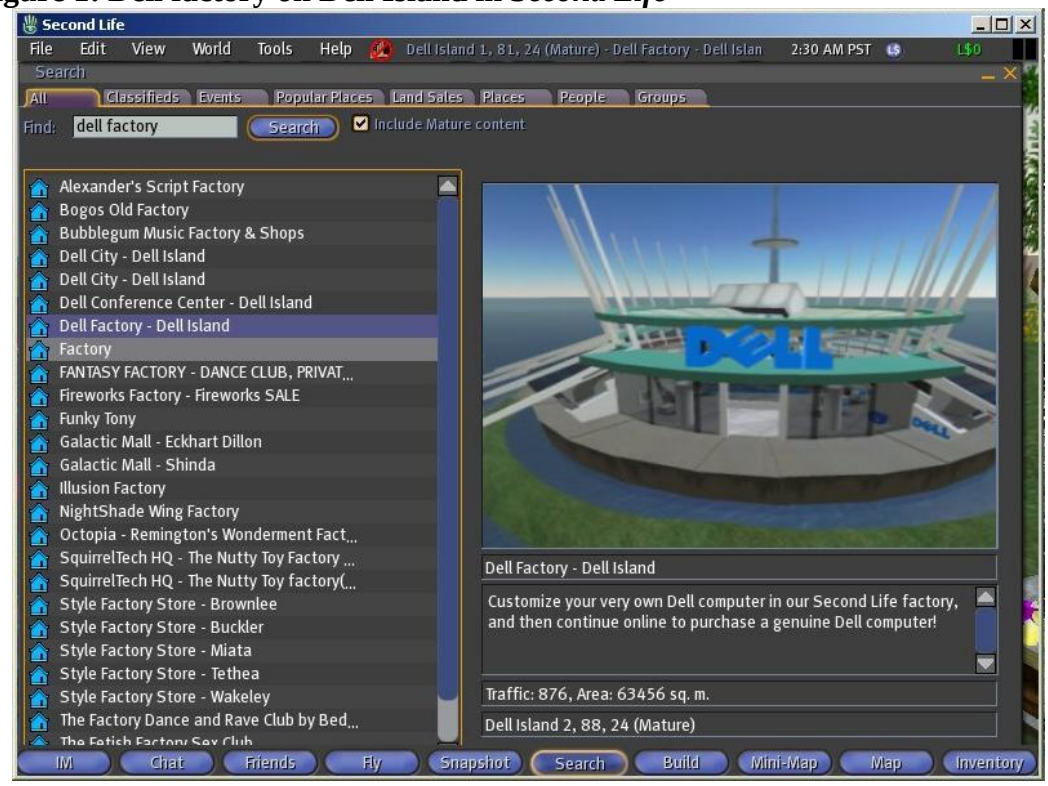
Note: The subscripts indicate the dimension within which the transaction takes place.

Perhaps the most interesting types of transaction occur when there is a crossover between the three dimensions, because such developments can significantly complicate the interplays between the physical and the virtual spaces and entities. One example is the (virtual) Dell factory on the (virtual) Dell Island in *Second Life*, where you are allowed to 'customize your very own Dell computer in our *Second Life* factory, and then continue online to purchase a genuine Dell computer!'.

Figure 1: Dell factory on Dell Island in *Second Life*

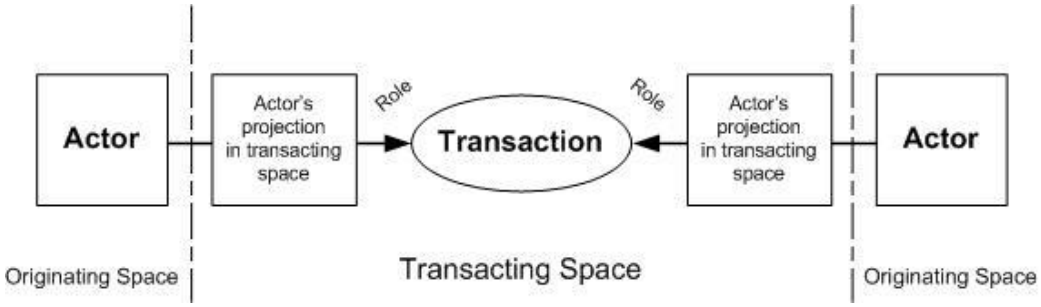


Metaverses also export to the real world, as illustrated by a company that runs a competition for clothes designs, the best of which are then featured in the real world (SpaceThinkDream, 2004). Finally, an example of crossover between the electronic space and metaverse can be seen in the case of services like SLExchange.com that allow buying *Second Life* content over the web. The user first visits one of the in-world ATMs and deposits an amount of Linden dollars which then becomes available at the SLExchange.com's web site and can be used to purchase the items the user desires.

With actors living in more than one space (Li, Whalley, & Williams, 2001) it may not always be easy to classify them, although this will only be an issue for those actors that adopt the same persona across all spaces. As the different combinations create complex interfaces it is not feasible anymore to use acronyms to describe the classification. In fact, many classifications may not even be possible. For example, before one transacts in a virtual world one needs to create an avatar. If the avatar is a

mere projection of the physical actor then will one be considered as a physical actor even if represented by a virtual entity? A visual representation of the transactions could be adopted, as shown in the following diagram, in order to provide a framework for analysing them.

Figure 2: Transacting space and the interactions between actors and their identities



The actors are represented by a projection of the type of their selected identity depending on the transacting space. In real life this will be their real persona, while in the metaverse it will be their avatar. These types can then assume different roles depending on the nature of the transaction. This raises serious research questions about the understanding and management of multiple identities and the associated social, economic, ethical and legal issues this might entail. The issues of multiple identities are not just limited to individuals who might choose to be themselves or be someone completely different in different metaverses. Organisations increasingly have to face the same issues as they set up shop not only on the Internet in the form of dot.coms, but also in metaverses as whatever they choose to be (e.g. the Dell factory on Dell island illustrated earlier; or Reuters in *Second Life*). How to make sense of, and classify, the multiple identities of individuals and organisations in our extended social, economic, policy and legal environments is one of the challenges different social scientists have to address.

The virtual entrepreneur

Papagiannidis (2006) argued that everyone has an entrepreneurial propensity, which is only translated into actions, i.e. entrepreneurship, when environmental conditions favour such behaviour. The low entry barriers and the nature of the digital products, the rapidly expanding user base, the vast number of real world activities and the vast number or new activities for which products and services that could be offered, the geographical dispersion of the Internet and hence of the metaverses are all facets of emerging markets of high entrepreneurial temperature.

Looking back at the early stages of the Internet boom one can find similarities to how these metaverse markets develop. For example, the World Wide Web created demand for web developers and web designers. Similarly, metaverses such as *Second Life* created demand for scripting developers and product designers. The same applied for the actual products and services offered and the way transactions were undertaken.

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For example, before the Internet boom, there was no online access to bank accounts and for most people buying books meant paying a visit to the local book store. The Internet altered the nature of product offerings by offering new conduits for the transactions to take place. This is also true for metaverses. It is already the case that virtual products are offered in commercial establishments (e.g. virtual shops within virtual malls) and avatars browse them as they would normally have done in the real world. One could argue that it could be just a matter of time until real products are offered by default in metaverses and customers have the opportunity to browse them in a virtual setup. This would render the shopping experience more natural than simply looking at them in two dimensions as part of a web page, profoundly transforming shopping for a second time in less than a decade and the introduction of e-tailing.

For the time being the majority of offerings seem to originate from the real world. "There are certainly business proposals that don't have real-world analogues, but residents' freedom to leverage the vast range of real world-world business allows those residents who choose economic motivations to engage in a fluid, rapid evolution of ideas. These can further borrow from the real world because they understand the location, customer traffic and advertising all apply within *Second Life*". (Ondrejka, 2004c) Architects, fashion designers, automotive manufacturers, real estate agents and night club owners are a few examples among the growing number of entrepreneurs who provide their products and services in-world.

Starting a business and trading in metaverses can have real world implications. For example, virtual economies have already attracted the US government's attention. It has started looking at policy issues related to taxation, barter exchanges, property and wealth (Pasick, 2006). Also for countries of low per capita income, but with growing IT/digital media expertise such as India and China, it could potentially provide new employment opportunities. It has been reported that companies have already been set up in China whose employees spend more than 12 hours per day playing various online role play games. The characters they create and the resources accumulated are then sold to other players from developed countries, and the game dollars are then converted into US dollars (Barboza, 2005). This can also apply to outsourcing of in-world creations to developing countries (Au, 2006).

In addition, even though receiving micro-payments for in-world exchanges perhaps may not sum up to a significant income stream for those living in developed countries (with the exception of some in-world entrepreneurs (for example see Bridge, 2006), and this number is likely to grow rapidly), a few US dollars could potentially make an enormous difference for those in developing countries whose annual income is low. As a result, such opportunities leading to entrepreneurial activities and employment opportunities need to be considered in depth.

In the long run, the metaverses are likely to create lucrative opportunities for an increasing number of individuals and organisations from both the developed and developing worlds. In fact we are probably on the verge of a development that is going to be as significant as the Internet itself. The different MMORPGS could potentially be integrated together at a higher level and become a main source of future wealth creation and employment opportunities, and an important new environment for work, learning and leisure. More research is required to monitor the development of different metaverses and the emerging opportunities and challenges for individuals and organisations.

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Creating and trading virtual assets and owning virtual land

In a presentation in March 2006, Rosedale and Ondrejka (2006) of Linden Labs, provided an array of interesting statistics that illustrate the penetration and economic potential of the game:

- 25% of *Second Life*'s users were from outside the USA, with the UK being the second-largest country of origin.
- The average age of users was 32, and the median age of users was 36.
- 43% of users were female, 50% were female 'by use'.
- There were $5 million USD in virtual transactions per month conducted between users.
- 180,000 distinct objects were sold in a 30-day period roughly spanning February, 2006.
- 75% of users were buyers, 25% were sellers. Among the sellers 'low hundreds' of them identified *Second Life* as their full-time job.

Perhaps more important than the above demographics about *Second Life* users is the reference of Ondrejka, the vice-president of product development at Linden Labs, to the '1% rule' (Arthur, 2006) that 60% of their users create their own content compared to less than 1% of readers of the online encyclopaedia, Wikipedia (Keegan, 2006). As the creators maintain the copyright of their creations and have the right to exploit it more than half of them can potentially assume a selling role in the metaverse.

Depending on the nature of the business, commercial space may be required. To own land a user must have a premium account and pay the corresponding fees. A casino operator or a vacation resort owner may opt to buy a private island in order to develop a virtual property on it, while a fashion designer may decide to rent space in a mall aiming to capitalise on the mall's popularity. As in real life, location is often critical to the success of a venture: "Land near the telehubs receives more traffic and is easier to reach. It would be more valuable for someone setting up a shop." (Ondrejka, 2004c) Aesthetic issues can also matter and often beachfront property has consistently sold for more than inland plots (Ondrejka, 2004a). On the other hand, if the business does not require commercial space (e.g. if one selects to become a bodyguard or dancer or a private detective) then one is already in business by simply connecting to the grid. As mentioned above, trading also takes place on the web and many in-world entrepreneurs and companies maintain web sites that promote and sell their products and services.

Being able to own virtual assets raises a wide range of legal questions. If metaverses are to provide a sustainable business environment these will need to be addressed. This is also true about the legal framework that is required to regulate the responsibilities of the world's operators towards the users. What would happen if Linden Labs decided to stop supporting *Second Life* and close down the metaverse? Legal frameworks could boost trust in the metaverse and encourage more entrepreneurs to invest in it.

Moreover owning virtual assets and being able to trade commodity and trade for real world money has significant implications for real life too, as show in the diagram below, summarising what has been discussed so far.

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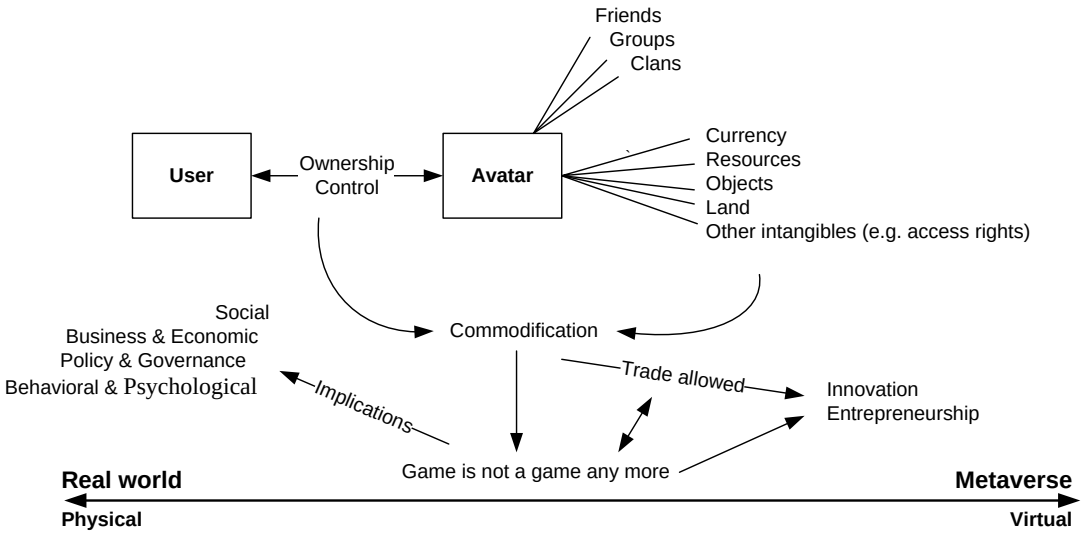
Figure 3 The implications of commodification of virtual assets



The users own and control the avatars who act as proxies for the users' social interactions and commercial transactions. Consequently, it could be argued that the avatars have their own 'human' and social capital associated with them. The assets owned could be commodified and coupled with real money trade, transform the online game to a metaverse environment that encourages trade and commercial exploitation, which in its turn raises a series of social, business and economic and policy implications to name but a few. The next section deals with these implications, focusing on the ethical and regulatory - policy ones brought under the corporate social responsibility umbrella.

A Corporate Social Responsibility Agenda: Ethical & Policy Implications

Cramer [20] notes that corporate organisations embracing the corporate social responsibility concept should aim to apply specific measures to protect, *inter alia*, their employees, their product / service users, the community, the society and the overall environment in parallel with achieving corporate financial growth. *Second Life* needs to be proactive and to develop its own concrete ethical policies without expecting the government or other regulatory body to intervene.

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It is clear then that there is a relevant ethics dimension for the *Second Life* user. For the latter, Bynum (2001) indicates computer ethics' overarching and broad dimensions by noting that: "computer ethics identifies and analyses the impacts of information technology on social and human values like health, wealth, work, opportunity, freedom, democracy, knowledge, privacy, security, self-fulfilment, etc". Moor (1985) also argued that the information technology (IT) revolution would be a two-stage process; the first one focusing on the technical development and use of IT whilst the second stage aiming to bring together the technical and social aspects by blending the IT systems and processes with the human and social interactions concerned. We could argue that *Second Life* is part of the second stage considering its strong human, social and consumer element, even though all these aspects are evolving at a very fast pace.

Similarly, Johnson (2001) notes the key characteristics emanating from the Internet technology in relation to ethical concerns. The first one is scope, due to its global reach and interactive nature; secondly, the anonymity and the reproducibility of information via that technology. Accordingly, in *Second Life*, one can generate revenues by undertaking various in-world activities. However, the ability to exchange real money for in-world money suggests that those privileged in the real world can become privileged in the virtual world too. Supporting a virtual lifestyle could be equally expensive as the real one. The user's spending power can determine to a great extent their decision making when it comes to spending. Still, as many real-world needs simply do not exist or at least could be 'avoided', users may decide to prioritise their needs based on different criteria (Foxall, Goldsmith, & Brown, 1998). These could be more influenced by the latest in-world trends, which may be completely different from the real-world ones. More interestingly, at the user level, there may exist two completely different sets of rules when it comes to spending decision-making, as a virtual character may represent a persona which is completely different from the real one.

In addition, in-world users are as open to manipulation as happens in the real world (see for example, Crisp (1987)), although one should emphasise two important points. The first is that although the social, educational and economic barriers to entering a virtual world are virtually non-existent, virtual worlds are often populated by well-defined types of users. What differentiates these users is not their real-world attributes and characteristics, but their in-world ones, which they can use to manipulate others. This is especially true in cases where more experienced users take advantage of inexperienced users. On the other hand, avatars are not autonomous but controlled by real people and how quickly experience is gained and how this is applied to protect oneself or manipulate someone else depends on the individual. Therefore, one could argue that avatars are equally prone to being manipulated.

It is worth mentioning that all users have to behave and act according to the defined sets of rules that owners and developers of the game, i.e. Linden Lab for *Second Life* in this case, have set. These are appropriate for the theme of each world and ensure not only that there is a framework within which avatars need to operate, but also that real world users are protected too. For example, privacy and harassment issues are always taken very seriously. Enforcing these is a non-trivial task. In fact, in many cases it may not be possible to do so. Consequently, great emphasis is put on peer monitoring, with users reporting behaviours that do not meet the set standards. The developers are then called on to investigate each case and decide whether there

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has been a violation and what action needs to be taken. In addition to the developer's rules, other sets of rules adopted by the communities themselves may also apply. These could be simple etiquette rules or even terms and conditions which an avatar has to comply with, if access to a product or service or location is to be granted.

Another important issue when considering ethics in a virtual world is to examine which code of 'ethics' actually applies. Is it the one that applies in the real world or is it a new code of ethics that arises from the very nature of the world in which the users operate? For example, the nature of the products and services traded can cause deviations from real-world ethical standards.

Finally, other themed metaverses may encourage 'unethical' behaviour according to real-world behaviour in order for the user to achieve the desired aim. Within some themed metaverses, killing or stealing may be actions that should be taken, as otherwise there will be little point in participating. An example with commercial focus would be that of the pyramid scheme in Eve Online, which allowed a user to net 700 billion ISK (game currency), which could be converted to more than $119,000 if sold on Ebay (Spamer, 2006). This example illustrates how manipulation is possible, even when it comes to well-known real-world exploitation schemes. Considered within the games boundaries, one could argue that profiting from such a scheme would not have been unethical or illegal. On the other hand, the ability to convert in-world currency to real currency does raise questions about what indirect impacts on the real world such cases may have. Metaverses are not isolated artificial spaces, but vibrant, highly-interactive and quickly evolving places that can reach the real world in numerous direct and indirect ways.

Following the above discussion, it becomes apparent that there is a pressing need for the development of appropriate frameworks (although this in itself raises the issue of who decides what is 'appropriate' or not) that will guide the commercial development of metaverses, especially when in-world currencies could be converted to real world money. There are currently limited or no specific policies or regulatory frameworks in relation to commercial activities in metaverses, notwithstanding the fact that the virtual environment represents a very recent phenomenon.

Taking into account the global use of metaverses, an important question is whether the introduction of a global advisory or event regulatory body could have a universal appeal and influence, or whether different countries, organisations or communities might introduce separate legislative codes. The former requires the development, introduction and conformity to the same set of standards of conduct and, at the same time, consideration of the country-specific similarities and differences such as consumers' income inequalities, the divide between information rich and information poor citizens and the existing country legislative procedures to name but a few. In light of this, Spinello (2000) considered some options for possible Internet governance and proposed three top-down models: first, direct government-state intervention, secondly, coordinated international intervention and thirdly, self-Internet governance. Spinello (2000) illustrates the major costs and benefits of adopting each model. For example, the first model (direct government – state intervention) could be abused by users who look around for more relaxed country environments and, overall, it entails a strong enforcement difficulty. The second model (coordinated international intervention) could potentially address the shortcomings of the first model due to the global nature of virtual environments as it would be possible to transcend geographical boundaries, although at the same time, it

could become cumbersome due to implementation and bureaucracy problems. The third model (self-internet governance) is the favourite choice for the US government, but nevertheless it has some key problems related to accountability and management of politics between the stakeholders involved.

Still, this could be the basis of the introduction of community advisory or regulatory bodies at a game-level, so that the unique attributes and characteristics of each game and community are taken into consideration. Their members could represent all major stakeholder groups and especially the gamers. Although initially this could be perceived by game developers as giving away significant control power it would help build trust and confidence in the game's platform, ensuring its longer term prosperity. Also, the opportunity for all stakeholders to take part in the decision making process would ensure that the development of the game is directly influenced by those that matter the most: i.e. the users. Allowing stakeholders to be actively involved could make them feel more valuable, which would further build the feeling of trust among the members of the community. For example, such bodies could act as a barrier for possible manipulation of users' privacy and guarantee the continuous protection of user interests, while for the firms involved an open democratic forum could help increase the credibility and legitimacy of trading. Such community bodies could then collectively interface with real-world bodies like associations or policy makers.

Another issue to consider is whether all users were given the chance to participate in that environment and, therefore, try to maximise possible social inclusion. In light of this, we need to examine the financial implications and especially the cost of acquiring virtual objects and property and the resultant transactions between buyers and sellers. For example, who is going to monitor such transactions and who will authenticate and validate them? What about overcharging and possible avoidance of opportunistic behaviour, which is commonplace in the UK physical property market? Will any legal documents be issued, such as the virtual property equivalent of deeds? Questions such as these are often addressed by the terms and conditions of each game, which are drawn up by the company developing the game. In many cases this could lead to controversy. For example, in *Second Life* the terms and conditions state that Linden Lab has the absolute right to manage, regulate, control, modify and/or eliminate the in-world currency as it sees fit at its sole discretion, without any liability to the users. This highlights the implicit risks that a growing number of entrepreneurs take when trading in such emerging markets.

Last but not least, to address ethical user and business issues such as these we would suggest a discussion framework of the following levels: the micro level, where we are encountering user-specific issues; the meso level, where we are encountering the firms and the resultant IT systems used; and finally the macro level, where we are dealing with governments, regulatory bodies and other stakeholders which will be responsible for setting the agenda for the ethical use of these systems by all participants involved. To maximise the effect of these upon issues of user ethics, ongoing discussion between participants at these three levels is needed. We suggest the immediate introduction of standards of conduct for both the users – consumers and firms involved. The participating firms will have to consider the corporate social responsibility dimensions and it is our suggestion that a corporate ethical responsibility matrix (and indices) could be further developed and refined based on an ongoing dialogue. In addition, a stakeholder analysis could also be co-employed,

especially at the macro-level of the proposed framework, which could maximise an analysis of social responsibility matters by highlighting to firms their key ethical responsibilities. According to Spinello (2000), some of the key stakeholders to be included in that analysis are the individual users and households, firms, non-profit organisations, software and other IT vendors, internet service providers, regulatory agencies and organisations, interest groups, national and local governments and media.

Conclusions and future research

During the past few years, we have witnessed the evolution and development of the phenomenon of metaverses and its manifestation through massively multiplayer online role playing games. We are only at the beginning of a profound development that is likely to be as significant as the Internet itself and the vast majority of indications predict that its popularity will soar. This positioning paper has highlighted some of the profound potential social, economic, ethical and policy implications that require further research and pose a plethora of questions. For example, who decides on what to spend in a virtual world? Is it the avatar or the real user behind it and which one is mainly expressed? In *Second Life*, where there is no defined goal for the users to achieve, other than what they feel is of interest for them, the activities that take place are more often similar to the activities undertaken in real life. As a result, one would expect that the ethics sets would be comparable in most cases. This argument could be extended to user ethics as well, as most of the transactions undertaken are based on real transacting models and the in-world currency is linked to real world currency. *Second Life* itself has a defined set of Community Standards, but these are mostly behavioural guidelines rather than an attempt to provide a user or business behaviour framework.

Metaverses also provide ample opportunity for both interdisciplinary and multidisciplinary research. Future research will need to consider the questions mentioned in the previous section from a number of different perspectives and angles that should be studied through novel cases that could highlight the different possibilities. Both qualitatively and quantitatively systematic studies like that of Yee (hosted on his web site at http://www.nickyee.com/daedalus) will also be required to shed light on the metaverses phenomenon. Researching in a metaverse such as that of *Second Life* may pose additional methodological challenges to those that research in the real world has to face. For example, when interviewing an entrepreneur or a user who is the researcher really interviewing: the avatar or the real person behind the avatar? In other words has the user's behaviour been influenced by the ongoing interaction between these two? Has that behaviour been altered and in what way, in terms of lifestyle and attitude and what is the overall impact on our society, i.e. are we encountering the developments of new societal trends? The above indirectly challenges a fundamental aspect of MMORPGs, that of gaming. MMORPGs such as *Second Life* should not be seen just as games, but as highly complex communities. Only then does the real significance of the issues discussed above become clear and making it possible for potential solutions to be sought.

To sum up, as the number of users continues to grow exponentially in various MMORPGs, we are probably on the verge of a new round of development that is going to be as significant as the Internet itself. In this positioning paper we have

briefly discussed the business opportunities and challenges of such a virtual world, that of *Second Life*, and highlighted some very complex issues from the perspective of corporate social responsibilities and their ethical and policy implications. This is still a rapidly expanding field, and a wide range of important research questions will need to be systematically addressed.

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