

UNDERSTANDING THE VIRTUAL WORLDS

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INTRODUCTION

Virtual worlds are a very alive and fast expanding area kept in rapid motion by innovation as well as by the ever increasing number of participants and the influx of funds. Reports appear on a daily basis about broken records, new solutions as well as new positive and negative influences in virtual worlds. However, these reports are indicators and do not convey the full picture. Furthermore, they are not clear from a methodological point of view, and they are aimed at attracting attraction, wonder and (also negative) sensation.

All things considered, the last four years have brought about significant changes in the area of virtual worlds, which in our case includes MMOs¹ and PWs². The games market is expanding and the number of Internet users is on the increase, contributing to the growth of virtual worlds. Besides the strengthening of the business segment, new models have emerged, especially in serious games.

It has been a point of debate for a long time what we mean by the expressions “massively multiplayer online” (MMO) and “persistent world” (PW), since the former does not only apply to role-playing games, and the latter points beyond the complexity of simple adventure games. It is a generally accepted view that software can be called MMO if the potential number of players simultaneously logged on to the same server exceeds a certain level. For example, more than 2,000 players can play simultaneously on Everquest. Based on this, a lot of games that only have multiplayer features and are built on this quality (e.g. Quake Arena) cannot be called MMOs, and neither can the predecessors in this category, the multi-user dungeons (MUDs).

A Persistent World is a virtual world that continues to exist and operate even after a user exits that given world. This rather broad approach opens the way for a great number of phenomena that are not included in quantitative definitions, like the one above that are difficult to define, to be merged into the term persistent world. The abbreviations MMO and MMORPG have become broadly used to denote virtual worlds because at present the overwhelming majority of virtual worlds are multiplayer gaming worlds (MMO), and the vast majority of these are role play games (MMORPG). Our research is focussed on the social and economic impact of virtual worlds, especially in those areas that are in the making right now (serious games). Since these games are still evolving, I can gain experience and knowledge only from the great number of MMO worlds which have been around for longer (for over ten years) and which have high numbers of players. The function of a given virtual world plays an important role in my analysis.

Since the terminology of virtual worlds is still in the making, several terms are used simultaneously to denote the same phenomenon, and some of them are only used on one or two occasions with the simple reason of attracting attention. The phrase synthetic worlds is often used (especially by Edward Castronova (see e.g. 2006b), one of the main theoreticians of the field), while in Asia digital spaces is in use. A number of useful resources focussing on the cultural aspects of virtual worlds can be found under “virtual cultures”.

¹ MMO – Massively Multiplayer Online (game); is a video game which is capable of supporting hundreds or thousands of players simultaneously. By necessity, they are played on the Internet.

² PW – Persistent World. A persistent world is a virtual world that continues to exist even after a user exits the world and that user-made changes to its state are, to some extent, permanent. See (Deal, 2007).

INTERNET AND DIGITAL CULTURE – A CHANGED WORLD

There were some one hundred million Internet users at the end of 1997, and one and a quarter billion at the end of 2007. This represents more than a tenfold increase in ten years – the high rate of increase exceeded all expectations expressed 5-10 years ago. About one sixth of the world's population uses the Internet. At the beginning of the 2000s a second, qualitative wave began in the proliferation of the Internet – that of connections enabling users to have a fast and permanent online presence – which is the strongest driving force behind the evolution of digital culture. One of the best indicators of the inequalities generated by the information society is that at the end of 2006 only one in ten people used the Internet in the developing countries, whereas in the developed countries this proportion was close to (and in some countries exceeded) six in ten. The prevailing broadband access technology is xDSL. The slogan for the future is connecting the next billion to the network – not only in a physical but also in a cultural, attitudinal sense. Such a quantum leap is only possible to achieve by improving the economies of the developing countries. It is certain that in the future wireless and FTTX (Fiber to the x) technologies will appear as new technological shifts; their leap of development actually started in the last two years.

A new, digital culture has evolved as a result of the broadband Internet gaining ground. Below is a short description of the levels and characteristics of digital culture, as they provide the background to the identities in virtual worlds.

The word culture originates from the Latin verb *colere*, which means “to cultivate”. It was first used by Cato³ to refer to the cultivation of land (vineyards, gardens, etc.). Thus, *cultura agri* meant looking after, nurturing, changing and improving the “raw” nature that surrounded man. It was a statement made by Cicero⁴ in his work *Tusculanae Disputationes* that brought about a significant change in the meaning of the word, which was the first important step towards the formation of its present usage: “*cultura animi ... philosophia est*” (Kondor, 2001), i.e. philosophy is the cultivation of the soul. Man is a biological and social being at the same time. It is culture – instruments, tools, clothing, ornaments, customs, institutions, beliefs, rites, games, works of art, etc, and even language – which enable man to become a social being. Leslie A. White, an acclaimed cultural anthropologist, defined man as *one possessing the ability to create symbols and thus culture* (White, 1942). Culture has numerous definitions.⁵ This chapter will look at culture as a survival strategy and as a sum of all non-inherited information.⁶ The holistic approach to culture has recently been summed up in anthropological scholarly literature by Clifford Geertz (1973).

³ 234-149 BC.

⁴ 106-43 BC.

⁵ Alfred Kroeber and Clyde Kluckhohn collected 160 definitions of culture in 1952, and since then this number of definitions has multiplied.

⁶ For some definitions of culture accessible online see <http://www.tamu.edu/classes/cosc/choudhury/culture.html>.

It can be seen from the above that culture is a highly complex concept undergoing changes era by era and understood differently by social groups. *Digital culture can be regarded as a growing part of "traditional" culture which cannot be interpreted or even exist on its own.* Digital culture is part of culture, and can be seen as a sum of all cultural objects (and the meanings conveyed by them) that exist on a digital platform, whether they have been *created digitally* or *digitalised*. Digital culture is a complex area including the following major sub-areas:

- The technical equipment necessary to access digital culture; their development, changes and the new opportunities they open up, etc. This area includes all kinds of equipment through which the elements and phenomena of digital culture can be accessed (for example, computers, mobile phones, PDA, digital cameras, modern televisions, etc.).
- The capability of value creation through the ability to make use of digital culture, i.e. information literacy. Just as the overwhelming majority of society was excluded from certain types of dialogue, rights and services in the early part of the modern age because they did not read and know how to use Latin, so the inability to create value through the use of digital culture can exclude a great part of the world's population from the information society.
- Digitalisation.
- Cultural elements created digitally or on a digital platform.

In a simplified way, digital culture can have *two sources*: the *digitalisation* of already existing cultural objects, and the *digital creation* of cultural elements. Both these areas are extremely multifarious and exciting, and thanks to today's revolution in regard to *online* content and users, digital creation has attained a predominant role with digitalisation – which seemed to be a key task just years ago – having faded into the background.

In the world of digital culture – to use Nicholas Negroponte's expression – only bits (and not atoms) travel (Negroponte, 1995). *The real world and the virtual environment are linked at many points; however, the mediating digital platform itself is immaterial.* This fundamental aspect defines many features of digital culture.

Contemporary culture is basically characterised (among other things) by *instancy, the local interpretation of globalised (and uniform) content*, as well as the worldwide presence of symbols and icons of mass culture. Features in addition to the aforementioned ones are detailed below. Digital elements are created in many ways: primarily with the help of computers, but digital cameras have pushed traditional devices into the background, our telephones are suitable for recording (moving) images and sound, and there is a digital switchover in television and radio broadcasting. Computers are no longer used only as tools to provide us with information digitally in our private lives but they also determine our public lives through e-government, e-health, etc. Furthermore, every "atom" of virtual worlds, which will play an increasingly important role in the future, is digital.

The computer, digital objects, the Internet, and later broadband, created new culture-shocks, and all within the last twenty years. *Never before has humankind* – due to the impact of globalisation we can talk about the whole of humankind and not only some nations– *experienced so many and such profound changes in such a short period.*

When Johannes Gutenberg printed the Bible in 1454, he *actually started a communication revolution*. Seventy years later over one thousand printing presses were operating in Europe. The printed word spread at lightning speed, and it can be claimed that *it gained dominance in culture in the subsequent centuries*. Written texts – in contrast to oral ones – were a rational, easily understandable and reliable channel of communication.⁷ Communication via printed texts revealed a more analytical, more rational and more organised world. *The predominance of the printed word was dealt the first blow in the 1950s, when television appeared and started spreading*. The proliferation of digital culture and within that especially that of digital media brought the 450-year dominance of the written word to an irreversible end: written digital texts and digital culture in general require new skills, a new approach and a new understanding.

Digital written communication is much closer to the oral communication that predated the proliferation of printing. Digital media combine texts, images, sounds and data and we, the recipients, perceive these complex messages in a more *complex* way - multi-media reception via multi-channel networks. In a digital environment information spreads at a breathtaking speed and news about a terror attack or about the outburst of an epidemic travels the entire globe within minutes. Due to digital culture, our general knowledge is transformed into the sum of interactive, global and multimedia-type experiences accessible any time and anywhere.

The digital world has many new features, which will be examined below. It is important to note that *none of these features are determined by technology* since all of them are a result of changes in culture. However, we can see a two-way process here: changes in culture induce technological changes, which then also have an effect on culture.

INTERACTIVITY

The digital environment creates the opportunity to increase interactions. In a digital environment it feels natural that an image or a piece of music is modified or entirely changed. *There is a trend for our online environment to become more personalised* with modules which we are interested in appearing on our homepages and the same information (e.g. a news item) reaching us in different forms (we can read it *online*, it can come in a newsletter, we can receive it in an *SMS* or read it via an *RSS* channel), depending on our choice. Targeted advertising appears more frequently: companies want to get their message across to us in as targeted a way as possible by using various automatic techniques. Games are becoming increasingly interactive with the simple choices of the past having been replaced by today's entirely interactive environments – we are given a ready-made dynamic world. In *MMO* games, which can only be played *online*, the environment is not generated in advance but is built together by thousands of players. Digital television moves even this “classic” channel towards interactivity.

INTERCONNECTIVITY

The electronic devices of the information society give us the feeling of constantly being connected. We can be reached on our mobile phones at any time; when we are sitting in front of our computers working *online*, searching for some information or perhaps enjoying some form of entertainment. We can contact our friends who are *online* either by speaking (*Skype*, etc.) or writing (*email*) to them, whichever we prefer. Moreover, because of the convergence of devices

⁷The relationship between oral and written communication is a far more complex issue. See e.g. (Ruth, 1997).

and technologies, mobile phones, computers and the Internet are beginning to merge into one unit, a means of providing a permanent interactive connection. The possibility of permanent availability and connection change many traditional cultural patterns ranging from how we use our personal space to how we do our work.

COMPLEXITY

Complexity is present at every system level: complex systems can have complex impacts. Devices we use every day are capable of carrying out complex processes at the touch of a button; the speech of a high-ranking politician might make an impact in a stock market at the other end of the world within minutes.

THE MERGING OF ORAL AND WRITTEN COMMUNICATION

Written records form an integral part of most cultures and are generally one of the basic means of preserving and disseminating information. It can be seen that in a digital environment written communication has some characteristics of oral communication as distinct from those of written records, as we understand them in a classic sense. *Chatting*, exchanging electronic messages and various digital objects (e.g. images, series of images, sound and video documents) formally take place in writing; however, these forms of communication and their features appear closer to oral communication. Oral and written communication is merged in a digital environment, harking back to the early centuries of the Gutenberg Galaxy, when similar oscillations could be seen on the borderlines of oral and written cultures.

SPEED

All new technology is designed to enhance speed. The first important trend was to increase the speed of changing locations, while today the main aim is to increase the speed of information exchange. This acceleration can be felt in our everyday lives, too: letters no longer take weeks or days to reach their destination but only a few minutes. If someone wants to find a photograph taken of a South American city, he/she no longer has to go to a library and spend hours searching since now it is a routine task that can be done in just a few minutes. With the help of mobile phones we can reach anyone anywhere since we do not have to wait until the person we want to contact gets home. Furthermore, administrative and business information spreads extremely fast and the stock markets of the world have an almost instant connection with each other. This stepped up speed has a depressing effect on a lot of people, who feel it to be one of the drawbacks, and a kind of pressure, characteristic of our modern era.

INTANGIBILITY

In a digital environment we are distant from the actual source of information and objects. There is a greater distance between us and the tangible world, and thus *the importance of trust and reliability has increased*. Perhaps one of the greatest cultural shifts has taken place in regard to how we feel about "real" and intangible cultural objects. In other words, is something that is not physically tangible regarded as valuable by the members of a given culture? The seemingly (!) intangible nature of digital cultural objects and patterns can easily lead to loss of substance. However, in the coming decades people will most probably come to accept that *digital actions, digital words and digital objects are real actions, real words and real objects in every sense*.

CONVERGENCE

In the context of the information society the strict, originally mathematical sense of *convergence* is interpreted in two senses: on the one hand, it means the ability of various network platforms to provide basically similar services, and on the other hand, it is used to refer to the unification of consumer goods such as the telephone, the television and the personal computer.

Convergence is a multifaceted phenomenon and besides the information society it is used in politics, in regulation, in the area of services and markets, as well as in intersectoral associations and fusions. Convergence actually refers to a kind of merging together of areas, channels, solutions and products that were previously distinct from one another.

It is the changes resulting from technological convergence that are the most perceptible. Now we can use the Internet when using digital television or we can have a telephone conversation via *PDA* and *Wi-Fi* connections, which is realised through operating several technologies in tandem. The platform neutrality of the Internet protocol plays a crucial role in such fusions. The convergence of technical devices serves the purposes of an increasing concentration of services ("I have one device in my hand which I can use for phoning, taking photos and connecting to the Internet") and miniaturisation: devices with an increasing number of functions take up ever-smaller space. Technological convergence results in telecommunication, informatics and media approaching each other and merging together.

UNPREDICTABILITY

We live in a world full of uncertainties. In the early stages of computer development we were certain that this device would always be confined to laboratories. Before the Internet spread worldwide we thought that this channel of communication would never become widely popular. Now, only a few decades later, these devices and the opportunities they offer have a profound impact on our lives.

MULTITASKING

In practice, multitasking means that we can do many things simultaneously. It is highly characteristic of media consumption, for example. The trend of secondary media consumption could be seen after the appearance of traditional electronic devices - this mostly meant background listening to the radio - but more recently television is also often used in this way. Intertwined and simultaneously running activities can dissipate our attention and push some elements into the background. A permanent online presence enables interactions in several communication spaces running in parallel, leading to the almost inevitable "fusion" of personal, group and mass communication. Similarly to background media consumption, background communication is also emerging, which - due to permanent broadband connection - means a simultaneous presence in more than one communication space.

As digital devices become increasingly popular, so digitally created elements play an ever-increasing role in our everyday lives. The mass proliferation of digital cameras, computers, mobile phones, digital television, etc. has generated many new cultural trends. The most important medium of the sudden growth of digitally created culture is the broadband Internet. It must be stressed again that culture created on a digital platform can only be interpreted in the context of traditional culture; however, it is going to represent an ever-greater part of it in the course of the coming years and decades. Digital culture also creates inequalities in our society that did not exist before.

A SHORT HISTORY OF MULTIPLAYER GAMES

In the early days multiuser games were played in front of a divided screen or with the so-called hot seat method with players taking turns. These had drawbacks, such as a reduced screen size and a long waiting time if more than two or three people wanted to play the same game. The then unique null modem, serial cables, and solutions via modems are long gone. Instead, broadband Internet began to appear in an increasing number of households, which set off the revolution in MMO games, which are revolutionary exactly because the players are connected through the Internet.

The first multiplayer game was Empire, in 1973. It was created by John Daleske, who had help from Silas Warner. The game ran on the PLATO system and enabled simultaneous play in the Star Trek universe for 32 users, who were able to play real time combat.⁸ The first multiplayer 3D first person shooter game, Spasim, was completed in 1974. As game consoles and PCs began to spread the market of multiplayer games developed further. The most popular games (MULE, MIDI Maze, Doom) triggered a large number of clones, but the first real MMP games only appeared in the second half of the 1990s.

The ancestor of MUD (Multi User Dungeon) was created in 1978 by Roy Trubshaw and Richard Bartle under the name of MUD1. It ran on a PDP 10 and was built on telnet technology. In practical terms this game was a text-based RPG in which players were able to interact with each other. Despite the fact that MUD attracted a camp of enthusiasts who developed it further, the game remained entertainment and a proving ground for a narrow circle. In this period the big gaming services such as Sierra Network and QuantumLink had a far greater number of users. These gaming pages were operated in an hour- and minute-based system, and all they did was maintain a service for communities of gamers without providing their own content.

Meridian 59 brought the first breakthrough in 1996. The game was built on MUD (not for the last time) and the terms MMP and PW were used for this game for the first time (there are other interpretations of course). Today this game could not survive: there were a total of 12 servers and only 250 people were able to play on the same one. This game already contained all the features of today's typical online games: a fantasy universe, and an almost three-dimensional (in this case 2.5) display and interactivity, which suggested the coming of a new era.

This new era began in September 1997, when Ultima Online, the first MMP game – understood in today's terms – was launched. The game was a novelty and became a success with over 200,000 subscribers. It has remained popular to the present day despite the difficulties in its use.

Many would continue this history with the appearance of Everquest. It is true that this game is the biggest success in the western hemisphere, but the “Korean connection” should not be forgotten: Korea has a peculiar place on the games market. In Korea there was an embargo on importing Japanese products for a long time so PCs became more widespread than consoles. The high density of the population, broadband access and the popularity of Internet cafés made Korea a breeding ground for MMPs. The isometric, two-dimensional display of Lineage, launched in 1998, wipes the smiles off our faces if we look at the number of subscribers to the game. While Everquest had a “huge” camp of 500,000 players, Lineage was proud to have over 6 million.

⁸ The game still exists and can be downloaded from www.netrek.org.

Nevertheless, Sony’s Everquest was truly a success. Built on the basic solutions of MUD it is the first three-dimensional MMORPG and it was the first game that brought real popularity to the genre. Of course, seeing the development of the games market a number of corporate giants joined in: Microsoft strengthens its dominance with Asheron’s Call, while the first film company to make a move in this direction was LucasArts with their Star Wars Galaxies, and Matrix Online is being developed. The most successful MMO game in the west is World of Warcraft.

Today it is possible for people living at the furthest possible distance from each other to play in real time, with the only discomfort being caused by jet lag.

VIRTUAL WORLDS: THE PRESENT

Virtual worlds are experiencing an astounding degree of expansion in regard to the services they render, the number of their players and the amount of time spent in them. The participants of Second Life, the biggest 3D virtual world, have so far spent 36.8 million hours, i.e. 4,200 years, online, as active users. In late 2008, this world had over 16,000,000 players. The largest gaming world for children are Habbo with 100 million participants and Neopets with 45 million registered users. The most successful online role-playing game is World of Warcraft with 11.5 million active players.

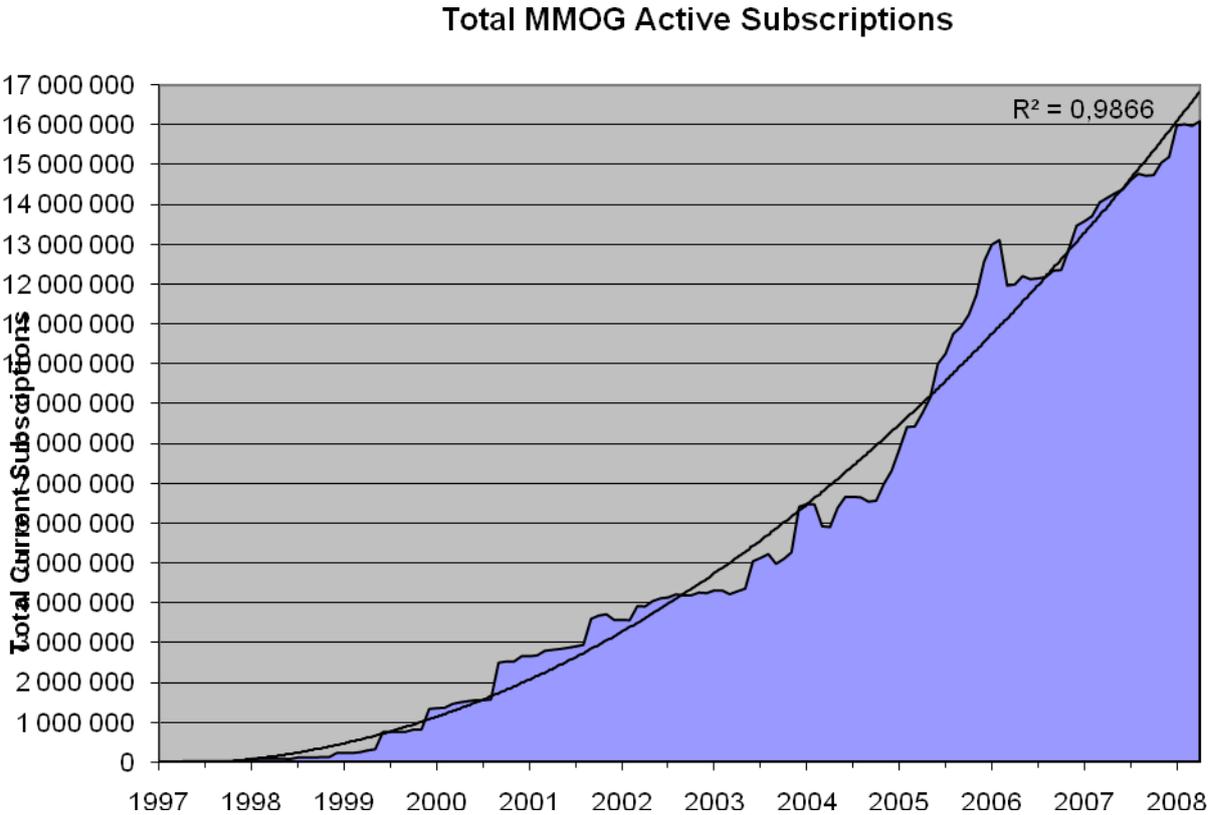


Figure 4.1. Changes in the number of MMO players worldwide (Source: MMOGCHART⁹)

⁹ www.mmogchart.com

Data are changing at an incredible pace. There is no information about the number of those who participate in more than one game, those who enter the world only once (as a general rule accounts are not terminated for six months), those who play with several identities, etc. Moreover, since one of the main sources of data are the company records, their reliability can be questioned – they do not lie *per se* but distort figures by for example not clarifying the aforementioned categories of players.

As an example, World of Warcraft, the biggest MMO, has more than 11.5 million players¹⁰, while Second Life has 14 million players¹¹. These are the two largest worlds¹² but added together the two figures come to more than the total MMOG figure of 17 million worldwide. The deviation is the result of factors such as players with multiple identities, data rounded down, etc., which make the full picture more subtle.¹³

Coming up with accurate figures is especially difficult in the Asian region, where business models are at variance with western ones and are more chaotic than the western model of assigning accounts to credit cards. The differences here are sometimes staggering: in one of the games a figure of over several million users was announced although the number of actual players might “only” be in the hundred thousand bracket.

When statistics are made about western players, a significant distortion is caused by the fact that a lot of virtual worlds were launched (also) for young people, but keeping records of minors adds extra problems since personality rights are linked with the protection of children’s rights.

Virtual worlds are a new fad, a new phenomenon, inviting a reaction from everybody: business players (e.g. 600 million dollars were invested in this market segment in 2008), the various representatives of the press and even government institutions. After the battle fought to become the market leader is over, in the next stage users will be targeted with new “bests”, offering more impressive visual displays, better and more easily manageable virtual spaces and more services. The era of specialised worlds has begun.

The figure below clearly shows the huge participant numbers and their distribution by age groups. These data might well be a surprise for many.

¹⁰ WoW Insider World of Warcraft hits 11.5 million subscribers

<http://www.wowinsider.com/2008/12/23/world-of-warcraft-hits-11-5-million-subscribers/>.

¹¹ Second Life Economic Statistics http://secondlife.com/whatis/economy_stats.php.

¹² The Chinese clone of Second Life has started to pick up recently, and it will certainly attract masses of people, HiPiHi, http://www.hipihi.com/index_english.html.

¹³ The list of all MMO type games can be found a MMORPG.com.

<http://www.mmorpg.com/gamelist.cfm/show/all>, ca. 300 registered games. About the most popular ones see the GIGAOM list at <http://gigaom.com/2007/06/13/top-ten-most-popular-mmorpgs/>. There are only MMO games for children on the TenTonHamster page, for example. The list of the most popular MMO-s reveals that they have huge numbers of players: <http://www.tentonhamster.com/>.

Virtual Worlds Registered Accounts Q3 2008

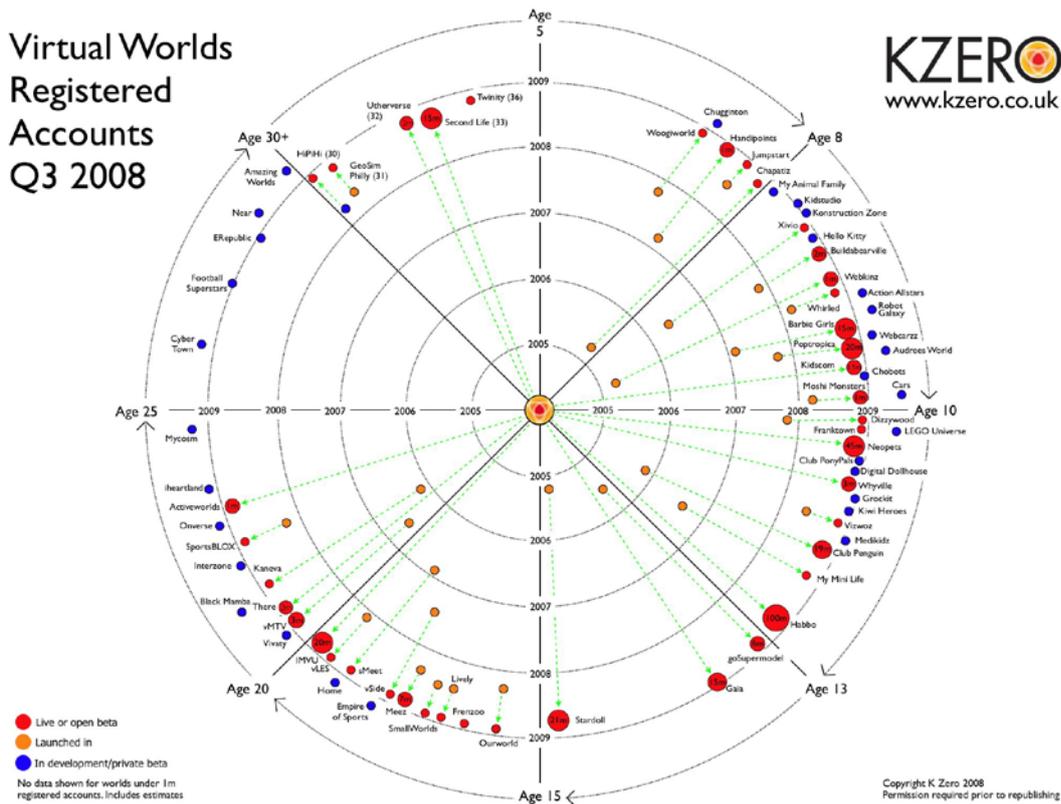


Figure 4.2. Virtual worlds and participant numbers (Source: KZero 2008¹⁴)

RESEARCHING VARIOUS ASPECTS OF VIRTUAL WORLDS

These virtual worlds are radically different from each other in their appearance, objectives and services. Players have different objectives and the experience of playing differs from one game to the next. Accordingly, research is carried out at different levels and examines various aspects, such as virtuality, roleplay, tamagochi experience, dependence, communities, virtual communities, roles and identities, games creating new value and games causing damage, etc.

There are numerous connections between real and virtual worlds with the player having the role of mediator. These connections do not only exist on a mental but also on a physical level. Players are often in contact both in the real and the virtual world. Typically, a lot of players enter a game together with their friends or join on the advice of a friend; these people maintain contact in the game, too. There is a less close but nevertheless valid cohesion between regions. For example, in the case of Hungary, which is a small country, this means the entire country. Hungarian players have their own clans and worlds; they keep in touch and organise (this is also true for other PC games played in groups).

The popularity of and visits to virtual worlds can be best compared to the most successful community portals, since they are practically just that. Besides examining the behaviour of players and their avatars in the online gaming space, their (typically online) life outside the virtual world is also important to be studied. It can be seen that players spend a lot of their net time spent outside the game with activities related to the game: they read forums, exchange information and do trade.

¹⁴ KZero Radar: <http://www.kzero.co.uk/blog/?p=2485>.

Despite the topic of virtual worlds being a fashionable one on the surface, research on it is limited and mostly focussed on economic aspects (virtual economy – real money). Virtual worlds are digital translations of the offline world and have a specialised, unique and at the same time borrowed economic and cultural model. Despite the fact that virtual worlds will have a great number of uses in the future, their mechanisms of operation are not fully understood.

Virtual worlds are excellent tools for disseminating information, education, and value-added communication. IBM has integrated this model into the world of work¹⁵, and the BBC is building a world for children¹⁶: it is planning to design a virtual world familiarising children with the culture and language of China. The increased interest in virtual worlds and increasingly sophisticated technology will have an impact in the areas of education and training. Currently, there are close to 300 such worlds.

Digital culture has undergone vast qualitative and quantitative changes in the last ten years. This culture did not merely stay a computer-based side-product of traditional culture but evolved into an alive and expanding social phenomenon interacting with traditional culture, mainly as a result of the profound changes in the information society. Although the change began some fifty years ago, the explosive development of digital culture was triggered and has been kept in motion by the dynamic spreading of broadband Internet and digital imaging devices.

The above-mentioned technological and cultural shift could be virtually felt and observed from the start; however, the most important changes take place in people's heads. Virtual worlds are among the most significant and complex elements of digital culture and they exert an influence on the lives of participants and non-participants alike.

Exploring virtual worlds is of key importance since as a kind of essence these worlds sum up a great deal of positive and negative aspects of digital culture. We have a unique and irreproducible opportunity to familiarise ourselves with virtual worlds and in a wider sense digital culture: the changes are happening right now and their origin can still be grasped.

The research of virtual worlds involves a number of approaches: of course ludologists¹⁷ were the first ones to be interested. Then, when attention was turned to the addictive power of these games (the highest of all the game types) and playing started on a mass scale, mostly psychological, motivational analyses were carried out, focussing on the reasons and on the nature of the addiction. After it became clear that in virtual worlds players not only play but also live and create something, the attention of social scientists was attracted to this area. Later, as

¹⁵ The IBM's project about virtual worlds:

http://domino.research.ibm.com/comm/research_projects.nsf/pages/virtualworlds.index.html

¹⁶ Adventure Rock is the subject of a year-long joint research project between CBBC and the University of Westminster, funded by BBC Future Media and Technology, and the Arts and Humanities Research Council which began in July 2007, and aims to look at how children engage with virtual worlds. The BBC's virtual playground <http://www.bbc.co.uk/cbbc/adventurerock/>, and some plus information from BBC <http://news.bbc.co.uk/2/hi/technology/7415442.stm> and the Wikipedia article: http://en.wikipedia.org/wiki/Adventure_Rock

¹⁷ the ludologists are specialized social science researchers, in their focus are the (computer) games.

the number of players increased and these games represented greater importance for business (millions of dollars), research projects examining the economic interrelations between virtual possessions and real money were done in great numbers. Last but not least, an expansive dialogue is on-going about the legal issues related to virtual worlds.

Most research areas regard virtual worlds as their means and not their objective (see law and economics). The main goal can be to understand the laws governing virtual economy, or in the case of law to study the complexity of issues related to the legal regulation of an international virtual environment. In the latter case at least three areas overlap: the interest of the proprietor companies, the regulatory system in force in the players' mother country and the personal rights of users, as well as the value and ownership issues of contents created by the players.

Motivational research and social science focus more on virtual worlds directly, and on the people living a social life in them in particular. The main question is: what benefits do these worlds bring and what impacts do they have on different people?

The following large themes can be identified in the research on virtual worlds:

- **motivation and attitude of players:** Taylor (2006): gigantic ethnographic monograph, description, a diary of observations written by a participant observer identifies virtual worlds as community spaces but does not feel that they are unique cultural spaces; Kelly (2004): explores the formation of addiction in players, uses three years of research and hundreds of interviews, economic attitude, and changes in language, through changes in morality, Bartle (2003) identifies game types, approach from the perspective of game developers;, Gervassis (2004): studied the electronic personality's search for values by identifying the levels of such a personality; Jesper (2005): places computer games in the history of human civilisation from ancient Egypt to interactive filmmaking, exploring the historical roots of people's interest in such games; Yoon (2005): the central issue raised is whether MMO games are multiplayer versions of computer games or they are gaming communities?
- **psychology:** Armando Simón (1987): the earliest research of this type, studied the effect of roleplays on psychological stability – and found no scientifically proven connection; Nick Yee (2006) and the Daedalus Project: research that has been conducted for years, and uses stratified sampling, with data gained from players' personal answers which in my opinion are distorted, mostly conducts research into players' motivations, and most findings are about players' need to form relationships; Ren Reynolds (2002): studies the morality of games through the game GTA 3, and the choice is not accidental since it is an action-centred mafia story; Moore-Ducheneaut-Nickell (2007): the authors researched the body language, gesticulation and eye contact of avatars
- **economic approach:** Castronova (2004, 2005): Castronova, the most prolific, key publisher on the theme, has written numerous books, articles, carries out scientific experiments. His interest is focussed on how the economy of virtual worlds is structured and to what extent it has an impact on the economy of the RL¹⁸ world. To answer the first question he constructed a model to examine the complexity of the games: the more complex a game, the more

¹⁸ RL – Real Life.

complex its economy. To answer the second question his assumption is based on the natural process that the more a virtual world is part of people's everyday lives, the more it influences their lives, and it is these influences that he explores; Lehdonvirta (2005): studied the value judgement of players, who is willing to pay and for what. An in-depth and detailed bibliography can be found about virtual economy on the research network homepage dedicated to the field, which of course is mostly the work of the members of the research network.¹⁹

- **international and information society law:** Lastowka and Hunter (2008); Grimmelmann (2004); Gervassis (2004). So far the most detailed list about the issues of virtual law – containing 66 items, the first one dating back to 1996 – was made by Greg Lastowka. The list strives to be all-inclusive, and includes conference presentations and even the smallest comments.²⁰ Some additional information can be found among the comments. See (Lastowka and Hunter, 2008).
- **education, training:** Galarneau and Zibit (2006); Delwiche (2006): studied Everquest and Second Life, examining whether they could be used in education, it is suggested that they are excellent opportunities for roleplay learning; de Freitas-Griffiths (2007) and Childress-Braswell (2006): the authors give an account of a successful teaching experiment in the world of Second Life; McFarlane, Sparrowhawk and Heald (2007): they conducted surveys in primary and secondary schools in Britain about the usefulness of computer games in learning, and in their opinion a number of valuable skills used in schools can be developed with the help of these games; Bonk and Dennen (2005): they identified virtual worlds as a training ground in military education, with special focus on team work.
- **technological challenges:** Chen et al. (2006): studied the several-million-strong data transfer of the game ShenZou Online, established that the Poisson works here too, thus provided game developers with valuable help. Compared with general data transfer, the data transfer in online games changes drastically as a result of personal decisions.
- **government sphere:** MacInnes, Park and Whang (2004); Jenkins (2004): studying the efficiency of freedom of speech in a virtual post-nuclear military world.
- **experiments using virtual worlds:** one of the leading researchers in the field, Castronova, launched and manages a virtual world called Arden, evoking the world of Shakespeare.²¹

Google has started an interesting project to develop the display of virtual worlds in real space (Terdiman, 2007) - it seems some people envision Multiverse networks. Contact Consortium have been the leading player in the field since the second half of the 1990s:

<http://www.ccon.org/>. Their TimeLine project is especially useful as a historical review of the theme: <http://www.vwtimeline.org/>, since it provides a comprehensive history of social virtual worlds from the pioneering days in a picture presentation of hundreds of pages.

¹⁹ Virtual Economy Research Network <http://virtual-economy.org/bibliography>.

²⁰ The ever expanding list can be read online at http://terranova.blogs.com/terra_nova/2008/03/virtual-law-b-1.html.

²¹ <http://swi.indiana.edu/ardenworld.htm>.

There is only a limited amount of sources available on virtual worlds. MMOGCHART must be mentioned as a source of statistics; Nick Yee's Daedalus Project (<http://www.nickyee.com/>) has also been collecting data for years, focussing especially on the motivations of players but he has done some other surveys of interest too. Yee's data usually come from questionnaires filled in by volunteers and provide little data about these people, yet they are important, precisely because of the deficiency of data.

One of the most important sites on virtual worlds is called Terra Nova: http://terranova.blogs.com/terra_nova/, where professionals interested in the theme exchange and publish their views. A great number of web pages and periodicals deal with games, but of course only some of them explore the subject in depth. One of the best magazines is The Escapist http://terranova.blogs.com/terra_nova/, and GameLife, the games blog of Wired (<http://feeds.feedburner.com/Gamelife>) is also an important source. Virtual Cultures (<http://virtualcultures.typepad.com/virtualcultures/>), a blog devoted to virtual cultures, was an interesting initiative but it has slowed down recently.

Important source dealing with the relationship between virtual possessions and real money is Virtual Economy Research Network (<http://virtual-economy.org/>).

There is also a news page dedicated especially to virtual worlds that aims to provide interesting news and data for the business sphere (<http://www.virtualworldsnews.com/>). The serious side of virtual worlds is dealt with by the Worlds in Motion page (<http://www.worldsinmotion.biz/>), which has some very useful analyses.

A separate blog called Educational Games Research (<http://edugamesblog.wordpress.com/>) deals with the educational potential of games (education games, edugames, see opportunities offered by serious games). The Phantom Compass project also addresses similar issues. A page called Izzy Neis <http://www.izzyneis.com/> is dedicated to issues such as the opportunities children have in virtual worlds and the dangers they have to face.

Develop (<http://www.developmag.com/>) is a page that deals with game development in general, but it offers some useful data on MMO games from time to time.

The blog PlayOn <http://blogs.parc.com/playon/> is dedicated to the social aspect of virtual worlds. It is rarely updated but contains some very important materials.

THE PROBLEMS OF SOCIAL NETWORK RESEARCH IN A VIRTUAL ENVIRONMENT

In the research of virtual worlds, social network analysis seems to be a logical and potentially successful solution. As a theoretical experiment, the difficulties faced by identity research are outlined below, presenting some of the characteristic features of online identity.

Some problems arise in connection with virtual MMO environments:

- can the borders of the network be delineated?
- can the characters be identified?
- can the online and offline networks be connected?

- are the characters interchangeable?
- are the avatars replaceable?
- what opportunities do individual characters have? etc.

Below is an attempt to answer these questions.

THE PROBLEM OF IDENTIFICATION

The question of identification creates a special situation in the social network analysis of virtual worlds. Players have at least **three identities** during a game:

- own RL identity (e.g. secondary school pupil);
- information society identity (this somewhat forced term basically refers to the identification of the ICT – username, password, credit card number, etc.). A lot of players join the system anonymously or under an alias;
- identity in the game, RPG identity (e.g. Jedi knight).

During MMO games the players operate with these three identities simultaneously. E.g. during a fight in the game the player's RPG identity is the strongest; however, if he is involved in a friendly chat or social activity, his offline, RL identity becomes emphatic.

Is it possible that if a player switches from one identity to the next, it affects the strength of his relationship with others? Are their bonds and relationships linked to the different identities? Is it possible that some identities create a different network of relationships? Is there an interrelation between these different networks?

The answer is more probably yes. The strength of bonding between online and offline identities is discussed later. For now, it is suffice to say that of the three identities the second one probably does not have the power to build and maintain a network, while the other two have a great deal of such power.

Besides alternating between identities players also need to have trust – online identification in virtual worlds is made difficult because an avatar can practically be any RL person. One of the important activities of players is to find out who is behind an avatar. The question is whether a strong relationship can be formed between people who only know each other online, when their online relationship is very deep. If the answer to this question is yes, it means a new victory in the realm of digital culture.

THE SIZE AND THE TWO LEVELS OF THE SOCIAL NETWORK

As stated above, although in theory the MMO world is a closed one (the number of registered players, the number of those simultaneously online, etc.), in practice research must reckon with huge numbers and too many variables: thousands of players can be moving about in the system, can enter and exit any time, and can travel great "geographical" distances, etc.

One of the most critical points in social network analysis is connected to sampling, i.e. how the boundaries of the multitude being studied were delineated. There are two possible ways to delineate boundaries. The realistic approach deals with the boundaries of a group according to

who the actors being studied regard as members of that group. The nominalist approach, however, is based on a researcher's theoretical field of interest: the network that will be explored is determined by this interest and it is the basis for what is regarded as relevant during the research.

In virtual worlds the whole multitude of the network is either too large or the number of members is too changeable to be analysed. Thousands of players might be simultaneously logged on to the same server. This figure can reach tens of thousands in whole worlds and in larger ones it can even be millions. Theoretically, anyone can contact anyone in the system but in practice one player is connected to one server, although even this can amount to thousands of players. Moreover, players can be playing with more than one account and on more than one server.

Mapping up the online network provides no answers to offline relationships. Thus, another problem arises, namely that we must think in terms of a two-level network: online and offline.

An analysis of the network of relationships must be carried out:

- to examine the online space (clan, participants in the same game, those trading, acquiring information, chatting, etc.),
- and the offline space (what relationships players have in real life).

It must be taken into consideration that there is also a transitory online space, that of forums in connection with the games, exchange, auction and fun pages, etc. In this space players are not present in the virtual world but they are connected online. Dealing with the game outside playing is a communal activity that takes up a huge amount of time.

Exciting findings can be achieved by making a comparison between the above two spaces, and especially from their temporal analysis: how does the online space influence the offline space in regard to the world of relationships?

THE QUALITY OF RELATIONSHIPS

In virtual gaming worlds the quality of bonds is not determined by physical proximity (neither is it in the real world, although there it has a stronger influence) since relationships are formed in a shared virtual space which brings players closer together. Instead of physical proximity the objective and function of relationships dominate.

The avatars are physically close to each other in shared virtual worlds but it is important to research whether psychological ties are formed and whether they produce strong bonds. Although the nature of these games demands strong bonds, it remains a question whether or not these strong bonds develop and are as strong in virtual space as in offline space and which identity they are connected to. (see problems of identity)

Based on the above, five kinds of relationships can be distinguished in virtual worlds:

1. no offline **relationship**, weak online **relationship**
2. weak offline **relationship**, weak online **relationship**

3. strong offline **relationship**, weak online **relationship**
4. weak offline **relationship**, strong online **relationship**
5. strong offline **relationship**, strong online **relationship**

The first type is very common in MMO games. It is basically the most frequent one. Since players live in all parts of the worlds, they usually do not know each other's RL identity and they do not need to – it is unimportant if trade in a virtual world is done with a baker from California or an old woman from a neighbouring village because it is the avatar's characteristics and completing interactions that play an important role.

In the case of the other four types there is an offline relationship between the two endpoints. Examples can be brought for all the four variations. If both the online and offline relationship is strong, we can talk about an offline friendship or love relationship that has an online manifestation. In my research I have found that good friends often play together, but there are a number of cases where e.g. a husband and wife play in the same game. Online and offline relationships can also generate each other: an online relationship can generate a strong offline one, in which case we are practically dealing with the extensive area of online dating and looking for friends.

There are probably fewer instances when the offline and online relationships are not proportionate, i.e. there is a strong offline but a weak online relationship, or there is a strong online but a weak offline relationship. Such scenarios are possible, e.g. friends who occasionally play together, or virtual fellow warriors who have the opportunity to form an offline relationship but never or rarely do this.

The strength of bonding is definitely influenced by the number of interactions between given players: it is stronger if the players have taken part in numerous adventures requiring hard teamwork, or if they are in the same clan, etc. ²²An important question is: to what extent is a character interchangeable in a relationship? Since the number of actions carried out by avatars is rather low, interchangeability is high.

THE OPPORTUNITIES FOR THE AVATARS

In MMO games avatars do not have an unlimited number of opportunities for interaction. It is another matter that it is the same in the RL world, since our behaviour and opportunities are determined by our social, economic and cultural environment. Players do everything in their power to exploit their opportunities to the greatest possible effect and carry out as complex actions as the given opportunities allow. For example, a lot of avatars can meet in one place in the virtual space: they organise meetings and even rituals – there have been a number of online weddings, and similar events. In theory, the avatars of the fantasy world do not have such opportunities (there is no separate function for such actions designed in the games), but the human factor, the community, adds this type of content to the game.

²² As we can see it from interviews with Hungarian players (20 interviews), and a questionnaire with 670 MMO player in one server (Everquest server in Hungary). The result of this survey will be published in 2010: Social structures in MMO games, PhD tesis under publishing.

It can be seen that players have more opportunities than the game's rules and built-in functions make possible, but "of course" fewer than in a RL environment. Extra opportunities in the games are mainly a result of communication, to which are added the usually temporary rules and consensuses set up by micro- and other, bigger communities: e.g. avatars can throw lances, which is one of the combat functions of the game, but if some avatars co-operate and decide not to fight with this function but instead they organise a sports competition, e.g. long distance- or target throwing, this becomes a communal experience beyond the game.

Interactive opportunities of the players:

- communication – conversation, getting information, organisation, knowledge sharing, entertainment;
- trade – producing, selling and buying virtual goods;
- combat – every avatar does it with the tools of his caste.

Activities pursued by players alone or without any significant impact (walks or explorations for a personal reason, etc.), cannot be included among interactive opportunities.

Due to the nature of MMO games, the strongest bond is forged in combat. Players are organised in clans and teams and at high levels it is impossible to survive without being a member of a group. For example, in one of the games tasks can be carried out in groups of maximum 40 members. What is more, teamwork on this scale is absolutely necessary at higher levels. Such tasks require a great degree of discipline from the RL identity of players since they must be online and active for a given period of time (until the end of the game). It is severely frowned upon if someone abandons his team by exiting in the middle of playing, etc. In the aforementioned game the number of castes (the RPG identities that can be assumed are actually the "professions" of the players' avatars) is far smaller than 40, usually about 5-8 members depending on the accessories. This means that when a team is formed, it consists of avatars that have similar "professions". Every member of a caste has a specific task assigned to him: characters with healing powers must heal, wizards must use magic, warriors must fight, etc. When a team is organised, it usually observes strict rules: e.g. when they can use magic and for what purpose, what consequences the negligence of an action will have, etc.

All that was described above clearly shows that in MMO games every avatar can be easily replaced by another even during the activity with the strongest constraints (going on adventures with one's team), except if the player's avatar or RL identity has some special sustaining power.

In the case of MMO players the network of relationships operates on three layers: on the level of virtual worlds, below it on the transitory level, and on the RL level below that. Problems arise when the boundaries of these spaces must be delineated, especially because these three levels are different in their nature. When studying RL space emphasis must be restricted to relationships connected to the game and to online space (Internet, PC).

HUNGARIAN CASE STUDY

We conducted national representative survey among Hungarian Internet users about virtual worlds²³. The omnibus questionnaire not only examined the virtual worlds, but also the general attitude of Internet users, their methods of obtaining information and in addition we analysed the phenomena of Web 2.0, etc.

The following presents the data pertaining to online games and an outline of the main trends.

Close to half of Hungarian Internet users have heard of online role-playing games. This is a huge proportion, bearing in mind that the actual players represent only 6% of all Internet users. This form of entertainment does not only interest players, but it is likely that thanks to the media a lot of non-players know about it too (or think that they are familiar with it and thus form their opinions).

Have you heard of online role-playing games?

Yes	45.1%
No	44.3%
Not sure	10.6%

Is there somebody in your immediate environment (family, close friends, neighbours, etc.) who regularly plays online games?

There are a lot	9.4%
There is such a person	24.3%
None	55.7%
Not sure	10.6%

Close to a quarter of Hungarian Internet users know somebody who plays, and this also supports the idea that the virtual world extends beyond its own boundaries.

Have you ever thought of trying online role-playing games?

Yes, I plan to	8.9%
No, because it is too expensive	4.1%
No, because it is too complicated	4%
No, because I am not interested in it	79.2%
Not sure	3.8%

²³ The survey method was online surveying. There were 2.000 respondents from a 25.000 sample. The data are representative for Hungarian online population. The style of questionnaire was omnibus, the other modules asked about information seeking, entertainment, digital culture, communication culture etc. The data collection was developed by professional market researcher firm (NRC, <http://www.nrc.hu/eng>). This is the first national representative data collection in the world in the topic of virtual worlds.

Of Hungarian Internet users 9% plan to try out virtual worlds, thus an increase of close to 10% can be predicted! Approximately another 8% are interested in the phenomenon, but find it either too complicated or too expensive, while close to 80% of Hungarian Internet users are not interested in it at all.

How many hours per week do you spend playing online role-playing games?

0-5 hours	70.5%
5-10 hours	11.8%
10+ hours	17.7%

Close to one fifth of players spend more than ten hours playing RPGs and 12% spend between 5-10 hours. The majority spend less than five hours, which means less than three quarters of an hour per day. A significant difference can be seen here compared to Nick Yee’s data, which are far higher than the ones in the Hungarian survey. The most fundamental reason for this is that Yee works with self-filling questionnaires, which are naturally filled in by more interested and committed players, and the Hungarian survey used representative, random sampling.

THE TRIUMPH OF INDEPENDENCE

Analysis of the data shows that MMO players prefer to roam in the virtual worlds alone, rather than in groups. This fact fundamentally overturns our view to date, namely that group games have the power to draw people into a community.

Do you prefer to pursue your adventures alone or in a team?

Exclusively alone	17.5%
Rather alone	52.4%
Rather in a group	25.2%
Exclusively in a group	4.9%

How important is it for you that your character be viable on its own?

1 – not important at all	8.8%
2	6.9%
3 – neutral	7.8%
4	21.6%
5 – very important	54.9%

The same aspiration for independence is reflected in the second question, from which it transpires that for more than half of players it is very important that the avatar be viable even on its own.

THE SPIRIT OF COMPETITION

How important is it for you to compete with other characters?

1 – not at all important	19.4%
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2	13.6%
3 - neutral	26.2%
4	18.4%
5 - very important	22.3%

Have you ever killed any of the other players' avatars?

Yes, it has sometimes happened	33.3%
Yes, once	15.7%
Never	51%

The two questions above indicate how motivated a player is by the spirit of competition and the desire to defeat other players. The above data illustrate that for some 58% of players it is not at all important, or that competition with other characters is of no interest. The same restraint in regard to other players is reflected by the PvP (Player verses Player) data too, according to which half of all players have never fought against another character in the game.

The above data demonstrate that players would rather struggle against the challenges of the virtual world than against one another.

MEMBERS OF A COMMUNITY

How important is it for you to be part of a reliable guild?

1 - not at all important	20.4%
2	15.5%
3 - neutral	27.2%
4	22.3%
5 - very important	14.6%

How important is it for you to have a live chat with other characters?

1 - not at all important	19.4%
2	22.3%
3 - neutral	30.1%
4	19.4%
5 - very important	8.7%

At the same time the players are members of separate communities.

From the question in regard to guilds it transpires that for a little more than a quarter of players virtual communities – which offer numerous types of advantages – mean nothing (neutral), for more than one third they are not at all important, and for more than another third they are very important. This is a very even distribution and does not allow for special conclusions. The

question about chats makes the picture more subtle: it shows a similarly even distribution but shifts somewhat towards the lesser importance of communication.

How important is it for you that your character match your chosen role/profession?

1 - not at all important	29.1%
2	13.6%
3 - neutral	14.6%
4	19.4%
5 - very important	23.3%

For a third of players it is not at all important that their RL and virtual characters are matched. However, for a quarter it is very important and for a fifth it is rather more important than not.

How important is it for you that your character's clothing and weapons look tasteful, e.g. they harmonise in colour and style?

1 - not at all important	21.4%
2	19.4%
3 - neutral	13.6%
4	19.4%
5 - very important	26.2%

How important is it for you that your character's appearance differ from those of other players?

1 - not at all important	20.2%
2	16.3%
3 - neutral	21.2%
4	21.2%
5 - very important	21.2%

The two questions above examine the manifestation of the tastes of RL identity and the gaining ground of individuality. It is interesting that the answers to both questions are evenly distributed in both cases, shifting a little towards individuality, but not significantly. It can in no way be claimed that virtual identity is some kind of heightened tool for self-expression, or a tool to experiment with twisted or reversed tastes.

Do you use ready-made modules or character-generating programmes to create your character?

Yes	14.4%
No	85.6%

We received a far more emphatic answer to this question, and it appears that the overwhelming majority of players aspire to create an individual character rather than selecting one from among the ready-made templates.

Did you create a background story for your virtual character?

Yes	8.0%
No	91.3%

The lack of attachment of players to their avatars and the low level of sophistication in this regard are well proven by the above data. A significant proportion of players do not devote their attention to elaborating a detailed virtual identity.

Do you roam in the MMO world merely for the sake of discovery?

Yes, many times	61.2%
Yes, it happened once	22.3%
It has never happened	16.5%

Do you collect objects that are not crucial for the advancement of the game?

Yes, many times	53.3%
Yes, once	14.3%
Never	32.4%

The two questions above examine how absorbed a player becomes in a game, i.e. flow. More than half of all players often play games merely for the sake of discovery or out of curiosity.

How important is it for you to take a look and enjoy the virtual environment you are in?

1 - not at all important	19.2%
2	18.3%
3 - neutral	14.4%
4	24%
5 - very important	24%

How important for you is it that the virtual world allows you to detach yourself from your everyday life?

1 - not at all important	16.3%
2	9.6%
3 - neutral	22.1%

4	23.1%
5 – very important	28.8%

Do you think that MMO games distract your attention from your everyday problems?

Yes	60%
No	40%

The three questions above also measure the degree of absorption in virtual worlds. 60% of players feel that virtual worlds distract their attention from their everyday lives. This is confirmed by the answers to the other two questions: players like to enjoy the visual experience their virtual environment provides them with and they become absorbed in it in similar proportions.

How much would you charge for your character?

1-10,000 HUF ²⁴ (less than the price of the basic game)	51.3%
10,000 – 20,000 HUF (price of basic game plus six months playing)	16.7%
20,000 – 50,000 HUF (price of basic game and 12 months playing)	10.7%
50,000+	21.3%

Our final examination was of players' commitment to the game. From the table above it transpires that more than half of players would in practice sell their character for a lower price than they bought it for. These players were probably disappointed in this form of entertainment and it did not have especial value to them.

However, close to a quarter of players would only sell their characters for a large sum, i.e. a price which is a multiple of that of the basic game, which means that they have endowed their virtual identities with far more than mere material value over time and an emotional commitment has formed.

CONCLUSION

The advent of the information society has fundamentally changed people's way of thinking and their sense of reality (time, space, individual and community). The spreading of broadband Internet and strong computers has made a new form of entertainment, 3D virtual realities, possible. The demand is visible in the huge improvement of and the strong addiction to these worlds. It has been proven that participants do not only play but also "live" in these virtual worlds of games.

The firmness, verifiability and trustworthiness of an individual's identity have always been major indicators of people's status in society. Digital environments, from passwords to 3D-

²⁴ 10,000 HUF is approximately 32.5 EUR.

avatars, have created new, uncontrollable identity models. Human culture is now in the process of getting to know the cultural background of managing these new types of identity. Because of this learning process we can meet plenty of controversial phenomena; for example, an unnaturally strong bondage and a highly superficial approach may appear simultaneously, but we can also witness the merging of several perceptions, extreme defenselessness and perhaps even new lifestyle success stories.

The management of the identities of the physical world is the result of cultural processes that have been shaped for thousands of years, and even though it is changing permanently, it has always been fed by some historical precedent. We can see failures of identity management between cultures, but also between generations within the same culture. Accordingly it is hardly a surprise that a phenomenon without any precedents – digital identity – appears as a real culture shock. All members of society should learn the management of these digital identities in their own best interests. Virtual gameworlds are splendid opportunities to complete this (voluntary) learning process in an entertaining manner.

The management of digital identities is a challenge that is cultural rather than technical in nature. The learning process has three levels:

- individuals learn to build their own digital identity;
- they need to learn to manage identities between individual and individual;
- the community needs to learn how to manage their digital and RL (real-life) members simultaneously.

Studying virtual gameworlds shows us how fundamental this cultural change is and how difficult it is to manage even for those who address this task voluntarily and with a high level of information literacy. Digital identities are not new identities but the extensions of existing ones in a peculiar manner, which holds out numerous promises. Yet still, exactly because of the close connection with real-life identity – they are built upon each other – virtual identities represent an enormous threat, a ‘security gap’, to the psychological protection of individuals. Because of the growing interconnectivity of society this phenomenon can also be observed at a community level. Indeed, exactly because of the birth of global online networks, it can also be experienced in meta-communities.

In an information society people forced to represent their identity through digital channels in artificial (or at least totally new) circumstances. This difficult process can be eased by numerous cultural assistance (for example the culture of telephoning or the emoticons used in written texts). The two notion of the narrative identity (idem and ipse) appear in a very special way in the virtual words. The basic question is can we stay ourselves while we are not the one we used to be? Is it possible that the experience without the tether of the body and the projection of the self into a digital environment are making basic difference on our identity? The use of technology does not affect the way we see ourselves. But the main goals of virtuality are to imbibe us, to engage and to blindfold our senses and thoughts - so as to heal us, teach us or entertain us. Could it be possible that the virtual identity (affected by very intensive experience

of pictures, sounds, mimicry, moves etc.) become a real identity? This question is not relevant only at the individual level (in this case it is the topic of psychology), but also at society level. Our research shows that the identities come into existence in virtual worlds are really special ones: their primary goal is to create deep, long-time attachment. Using this identity interaction is happening in different ways (movement, mimicry, figure, sound, text) which can radically increase personalization and engagement. Avatars are interim identities which are not interim anymore.

Our research shows that the deep commitment to the digital identity exists at the individual level, and not at society level.

It is becoming clear that the development of controllers (control with brain or thoughts) and the embedding nature of information technology are making our virtual identity a basic part of our real identity - and not a separate one.

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