Do Massively Multiplayer Online Games Represent an Evolution in Virtual Community?

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"Much of our energy has been directed toward understanding the speed and volume with which computers can be used as communication tools. Conspicuously absent is an understanding of how computers are used as tools for connection and community."
James Carey(1989)

1 Statement of Intent

As rapidly advancing technologies make communication faster and easier than ever before, the increasingly seamless exchange of information is changing the way that people interact. The traditional concept of community has been applied to this computer-mediated communication (CMC), and the term *virtual community* has been introduced to describe the new groups that are formed. Virtual community has been described as existing in media that allow for interaction among groups of people, including applications such as newsgroups, websites, real-time chat rooms, and online games such as multi-user dungeons (MUDs). Just as communication technology has rapidly evolved, so has virtual community. The latest step in this evolution is the commercial massively multi-player online game (MMPOG), a new incarnation of the traditional MUD.

Verant Interactive and Sony Interactive Studios[1] released one of the most popular commercial MMPOGs in the spring of 1999. This game, *EverQuest*, represented a significant advancement from its MUD predecessors. While traditional MUDS were unsophisticated, text based, volunteer-run, and limited in scale of usage, *EverQuest* leveraged a number of technological advances to create a fully rendered, three dimensional, professionally maintained world that can accommodate thousands of players. With life-like graphics and sound, the user experience is deeply immersive. While members of traditional virtual communities faced technological limitations in their interaction, MMPOG players enjoy an on-line experience that more closely resembles off-line experience. Virtual communities have progressed from relationship-based communities with text based interaction to ones closer to those in the real world, to the point of developing systemic levels of interaction. Initial observations suggest that people are doing more than simply “playing a game”; players are forming friendships, developing complex social structures, and establishing codes of conduct, suggesting the emergence and formation of on-line communities similar to off-line ones. It is the purpose of this paper to determine if MMPOG technology has removed the conditions constraining previous virtual communities, allowing sophisticated systemic interaction that creates an experience closer to off-line community while retaining the benefits of on-line communication. This research will be accomplished by investigating a specific MMPOG, *EverQuest*.

[1] Sony Interactive Studios has since been renamed 989 Studios.

2 Massively Multi-Player Online Games

Massively Multi-Player Online Games (MMPOGs), such as *EverQuest*, are a type of computer game where many users (players) play together over the Internet in a continuously sustained game world. Thousands of players can be logged in at once. These players interact with the game world and each other through a graphical user interface (GUI). Depending on the context of the game, the players may compete with each other, ally to overcome computer opponents or other players, co-operate to complete tasks, or even just socialize in the virtual game world.

2.1 MMPOG Technology

MMPOGs operate on a client/server model, a network architecture in which one computer (the client) requests information or processes from another (the server). This allows many computers to share common resources. In the case of MMPOGs, the player purchases a copy of the client program. The client for the MMPOG contains the software for the user interface: controller information, graphic files, world maps, and other required client-side information. In order to play the game there must be a connection to a game server, MMPOGs can not be played as a stand-alone game. On the server, the player sets up an account, usually paying a subscription fee. In conjunction with an online billing system, the server maintains the player's account information. The player's computer renders the games graphics and processes the player's actions to send to the server. The server manages the game world and governs player actions according to the information it receives from its clients. Client programs use Internet connections and standard TCP/IP in their communication with the server. The dominant platform for client-side operation is Microsoft Windows 98, with servers mostly running UNIX or Windows NT. The game servers are owned and maintained by the game company. *EverQuest* uses Windows NT servers, run by Verant Interactive Inc.[2] Multiple game servers are used simultaneously which allow for the many players of MMPOGS. The connections between the clients and the servers is coordinated by the World Server. Figure 1 shows the basic client/server network used for MMPOGS.

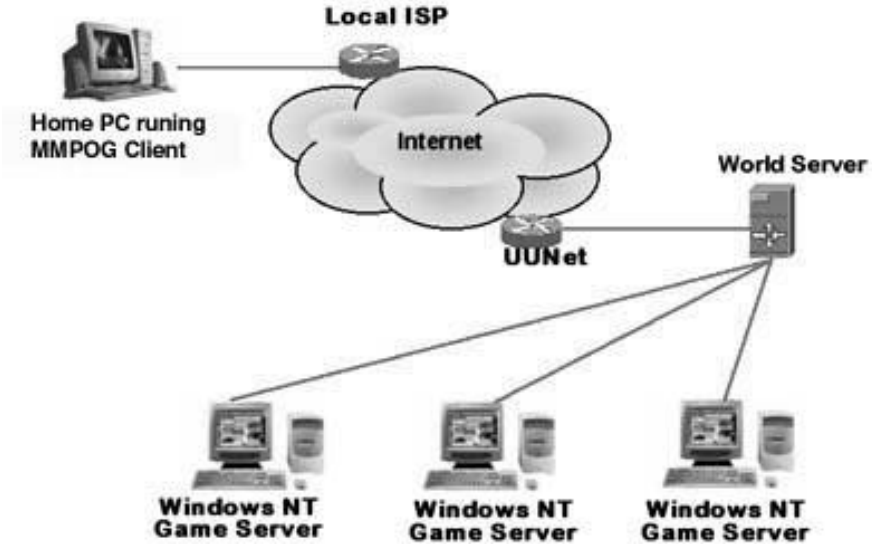

Figure 1: MMPOG Network

[2] Verant Interactive, Inc. is an independent online game development studio that was spun off from 989 Studios. Verant's employees include the *EverQuest* development team, network and system administrators, and customer support staff who play test and participate in the game world.

On most MMPOGs, the player creates a *character*. A character is composed of various descriptions and statistics that affect game play. For example, a thief character might be named Jericho, have a high dexterity value and a low charisma value, and be described as dark and roguish looking[3]. This information is stored on the server. The server sends information about the character and its immediate environment such as landscape and weather to the client, which then renders the scene in the GUI. The server updates the client's information using proprietary upper layer protocols sitting above the TCP/IP suite.

2.2 Inside the Game

The game play of an MMPOG takes place in the *game world*. The game world is the environment in which players interact. The game world can be of any setting or genre, such as western or science fiction, though the most popular game genre is medieval/fantasy, the genre *EverQuest* uses. The game world is designed to simulate the real world. A world map is created that can include landmasses (such as continents) and bodies of water (oceans). Typically, the landmasses are divided into different countries, cities, and wilderness areas, such as deserts and forests. Inside the towns, there are business oriented locations such as stores for players to buy equipment (weapons, armor, food) for the game. There are also socially oriented locations, such as bars and temples. The game developers can create new areas of the game world on the servers, which then update the client's world maps. Additions to the game world can also be offered by retail expansion packs.

The game world's inhabitants are called characters. There are two types of characters: *player characters* (PC's) controlled by the player and *non-player characters* (NPC's) controlled by the game server[4]. The player interacts with the world through a first person view. Inside the game, the PC is represented by an *avatar*. This is what the PC looks like to other players. The avatar's appearance varies according to physical characteristics, clothing, equipment, and even the health of the PC. Figure 2 shows a first person view including an avatar from *EverQuest.*

Figure 2: Screenshot from *EverQuest*

[3] Other common statistics are strength, intelligence, wisdom, charisma, and constitution. These are given number scores, typically between 1 and 18.

[4] NPC's are divided into *people* and *monsters*. People are townspeople, vendors, and barkeeps: characters that are not considered hostile to PC's. Monsters, are NPC's that wanders around the game world, and are hostile to the PCs. PC's fight monsters to gain treasure and increase their abilities.

2.3 MUDs

MMPOGs are an evolution of a type of online game called Multi User Dungeon/Dimension/Dialogue or MUDS. MUDS follow a similar client/server model, but very little information, if any, is stored on the client computer. Instead, players access the server computer over the Internet, usually through telnet, to play in the game. All of the game information is stored in the server, which also handles any processing needed for the game. The game world inside of the MUD is continuously sustained, similar to MMPOGs, prompting to players to spend great amount of time playing. MUDS also have multiple players logged in at once, though few if any can handle the quantity of users that MMPOGs do. MUDS are traditionally text based. As shown in figure 3, instead of seeing pictures of their characters and the world, the player reads detailed descriptions of the game world. This is the main difference between MMPOGs and MUDS.

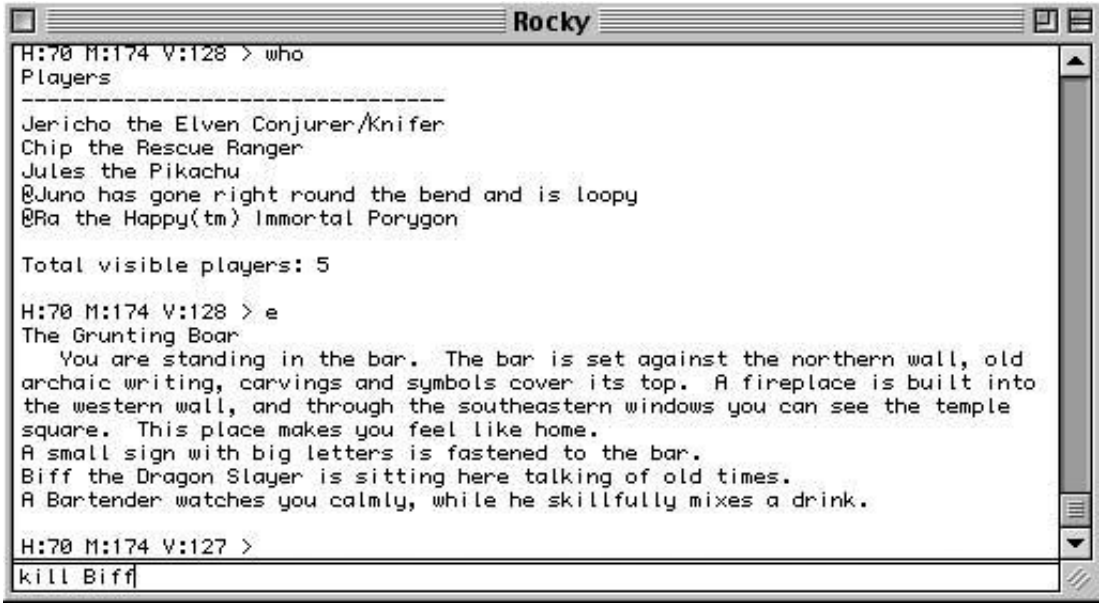

Figure 3: Screenshot from a MUD

Like MMPOGs, MUDS can be based in different settings or genres. MUDS are also categorized by the code of the server program that determines the category of game the particular MUD is. There are many different variations of MUD server code, but they break down into 3 main categories: social, role-playing, and combat. Social MUDS, as represented by TinyMUD and MOO (MUD: Object Oriented) code, are basically multi-room online chats where player interaction is mainly just talking to each other. In role playing MUDS, such as MUSHes (Multi-User Shared Hallucination) and MUCKs, the PC often has a different personality than the player. The game play is based on acting as the character. For example, in many role-playing MUDS, players take the roles of characters from movies or books. In combat oriented MUDS, like LPMUDS and DikuMUDS (named after the computer department at the University of Copenhagen where it was developed), the goal is to gain treasure or experience points by killing monsters or other PC's. Often combat MUDS have quests that characters go on to complete

some task, upon the completion of which, the character is awarded a prize of some sort. EverQuest's server code is similar to DikuMUD code, though not based on it.[5]

2.4 History of MMPOGs

MUDs have been popular for a long time--they could be found on Bulletin Board Systems (BBS) before the growth of the Internet in the 1990's. However, with the mainstreaming of the Internet brought by the GUI of the World Wide Web, the text based MUDS have generally remained in the domain of the students and technical professionals who made up the early population of the Internet. Additionally, MUDs are mostly run as a hobby, so there is little impetus for MUD owners to actively recruit more players.

In recent years, there has been a tremendous growth in the use of personal computers. Falling costs of components such as storage and memory have lowered the prices of personal computers. In addition to lower costs, developments in computer technology have brought about faster and more powerful processors, which enable computers to produce increasingly dynamic and realistic graphics, perform more tasks, and work faster than ever before. The computer game industry began to produce games that took advantage of the new capabilities of personal computers.

In 1992, id Software released a shareware game, *Wolfenstein 3-D*. This game featured a fast moving, first person user experience in a fully rendered bit-mapped 3-D environment. The game proved very successful, launching the First Person Shooter (FPS) game genre. id's 1994 follow-up to *Wolfenstein 3-D*, *Doom*, brought LAN connectivity to FPS's, allowing players to compete against each other across a network.[1]

Meanwhile, due to the development of the web browser, a graphical user interface for the World Wide Web, the Internet left the domain of education and industry and entered the mainstream. Many game companies saw commercial opportunities in providing Internet networking elements to their games, allowing users in different parts of the world to play against each other. A 1998 Jupiter Communications study projected that by 2002 the on-line gamer population will reach almost 27 million people, as shown in figure 4[2]. These games' networking elements use a client-server model with client software residing on the players' PCs and servers coordinating player interaction [3].

Figure 4: Online Gamer Population

[5] John Smedley, President and CEO of Verant Interactive, Inc., released a statement to the Everlore.com website stating that a rumor that EverQuest used Diku code was untrue.
http://www.everlore.com/default.asp?mode=120&arch=month&page=1&tp=03/16/2000#2

In addition to the graphics and speed advantages on the client side, the advances in processors have allowed servers to become far more powerful and less expensive. Rather than having to share a computer's resources, it is now affordable to run the game server on one or more dedicated PC or workstations (as of March 2000, *EverQuest* uses 24 separate servers). Further, modern game companies have developed proprietary software engines which take advantage of today's advanced processors so servers can easily be scaled up to handle several thousand players connected at once.

With network connected FPS games already incredibly popular, game companies sought a way to use a FPS as the client in a MUD-like client/server system. Added to their solutions is a billing system that allows for easily maintained monthly subscriber accounts through on-line credit payments. This convergence of technology and business has made MMPOGs extremely attractive to mass-audiences (*EverQuest* has reached 200,000 players after one year [4]), intriguing to the press (*Time Magazine* named *EverQuest* one of the 10 technological "Best of 1999"), and attractive to companies such as Sony (*EverQuest*), Sierra (*Ultima Online*), and Microsoft (*Asheron's Call*).

3 MMPOGs and Community

Author Howard Rheingold has developed a widely cited definition of on-line or virtual community. Based on his experiences with early on-line communities in the 1980s, Rheingold defined these communities as "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace."[5]

Historian Thomas Bender of New York University presents a classic definition of off-line community as "involving a limited number of people in a somewhat restricted social space or network held together by shared understandings and a sense of obligation. Relationships are close, often intimate, and usually face-to-face. Individuals are bound together by affective or emotional ties rather than by a perception of individual self-interest. There is a "we-ness" in a community; one is a member."[6]

As with Bender's definition, many sociological definitions of off-line community do not exclude the potential for on-line community. However, it is interesting to note that descriptions of previous on-line communities do not posses many of the elements of off-line communities. Research has identified a number of characteristics present in *community*, as shown in Table 1.

Table 1: Conditions of Community

Condition	Author	Description
Webs of personal relationships	H. Rheingold (1993)	Social aggregations where . . . people carry on a public discussion for an extended period of time with sufficient human feeling
Bound by place	S. Doheny-Farina (1996)	Common area where people are drawn for a reason while aware of the proximity of others.
Complex social and environmental necessities	Farina (1996)	There exist certain resources which are critical to the survival of the individual
Lived	Farina (1996)	"Sharing of social life including rituals, sickness, health, spiritual, emotional concerns" [7]
Common interest	N. Baym (1998)	Members share similar interests, such as pastimes and hobbies.
Stable patterns of social meanings	N. Baym (1998)	People understand what is acceptable and unacceptable behavior
Consequences for unacceptable behavior	N. Baym (1998)	Ability to negotiate unruly newcomers and those who undermine authority
Adequate interaction	N. Baym	An environment which not only allows but encourages ongoing

	(1998)	communication with more than one person
Similar challenges	N. Baym (1998)	As the world changes, everyone in a given community is going to face a common problem
Collective cognition	N. Baym (1998)	The interactions through which people learn from one another's experiences, set common strategies, develop a shared vocabulary, and evolve a distinctive way of thinking
Shared forms of activity	N. Baym (1998)	"Commonalties of people lives, goals, and surroundings, together with collective thinking about their situations and futures, tend to lead to similar patterns of activity"
Economic interdependency	C. Kramarae (1998)	Method of exchanging items of personal value, some of which are critical to the survival of the individual. Economic system.
A minimum level of sustained membership	C. Kramarae (1998)	Long term interaction among large groups that survive the leaving or absence of members.
Self-regulation	M. Sellers (1999)	The group has control of the 'rules' rather than any one individual. Understood 'norms'
Sustainable existence	M. Sellers (1999)	If you are removed the community you may still have impact on it. I.e. Outsiders to the community exist.

With advances in telecommunications and the popularity of the Internet, many have attempted to identify and establish virtual communities. For example, Yahoo's Geocities, which provides chat rooms, web page hosting, and activities for its members, is advertised as a community. Similarly, USENET newsgroups have been described as communities where common interests, like hobbies, are discussed. However, simply providing a forum for interaction is not creating a community. As Howard Rheingold states, "People use computers to communicate, form friendships that sometimes form the basis of communities, but you have to be careful to not mistake the tool for the task and think that just writing words on a screen is the same thing as real community."[8]

Prior to the creation of MMPOGs, researchers have justified the existence of on-line communities, like Geocities and newsgroups, by working around or simply ignoring some of the characteristics of off-line community. For example, chat rooms or MUDS did not allow a user to experience a true feeling of geography or proximity, so that was not included as a characteristic. Because of the limitations of previous technology, traditional virtual communities often bore little resemblance to off-line communities.

4 Research Methodology

A set of patterns of interaction was developed based on the researched characteristics of community. Appearance of these patterns would demonstrate a systemic level of community resultant specifically of the unique characteristics of MMPOGs. These patterns would need to develop out of player interaction and not be a function of the game itself. Research was conducted through three methods: 1) observation of player interaction in the *EverQuest* world, 2) informational interviews with *EverQuest* players and 3) reading the leading web site forums devoted to out-of-game interaction between *EverQuest* players. The data collected through the selected research methods was analyzed by three researchers, with the goal of identifying interaction in the game that fit any of the identified patterns, shown in Table 2. If two or more researchers identified the existence of a pattern in the raw data, it was marked as present in the *EverQuest* world.

Table 2: Patterns of Interaction

Pattern of Interaction	Examples
Adequate Interaction	Environment encourages communication, large number of and sustained amount of people
Complex social relationships	Affection, friendship, sub-organizations (gangs)
Complex social and environmental necessities	Scarce resources, need for interaction
Bound by place	Common geographical location, feeling of proximity
Lived	Social gatherings, sharing of emotional concerns
Stable patterns of social meaning	Codes of conduct, social norms
Consequences for unacceptable behavior	Self explanatory
Collective cognition	Conventions to acclimate newcomers,
Sustainable existence	Existence of outsiders, impact of outsiders

4.1 Observation of Interaction

Informal observation was conducted through game play beginning in June of 1999 and continuing through March of 2000. Formal observation, including the logging of all text interactions during game play was conducted over a period of 2 weeks in March of 2000.

4.2 Informational Interviews

Four long time *EverQuest* players were engaged in discussion regarding different conventions and interactions in the game. Interviews were in the form of conversations with the players and were either logged or notes were taken. The interview subjects and topics are listed in Table 3.

Table 3: Interview Subjects and Topics

Subject (Character Name)	Interview Topics
Huxley	Sub-organization, self-governance and group norms, Intra-group conflict, relationships
Narkin	Relationships
Kang	Sub-organization, self-governance and group norms, relationships
Ahmenn	Sub-organization, self-governance and group norms, relationships

4.3 Web-based message forums

The majority of out-of-game interaction among players is done on web-based message sites. These discussion forums feature threaded message discussions and are heavily trafficked by *EverQuest* players. The three web sites that were used in this research were www.eqvault.com, www.everlore.com, and eq.stratics.com. Verant's CEO John Smedley described these forums as "vital" for both player interaction and dissemination of game information [9].

5 Findings

Adequate interaction: The scale of *EverQuest* allows for continued viability in spite of turnover. In it's first month of existence EverQuest had over 50,000 players and has never fallen below this level, in fact it continues to increase and is currently at over 150,000 players [10]. Further, the large number of players has allowed for the identification of many other patterns of interaction.

Complex social relationships: Players routinely enter into small working groups to complete tasks or engage in combat with NPC monsters. The shared challenges encourage relationships. Affection for former group-mates was frequently observed, and Narkin described a number of fellow players as friends. As a further example of the complex relationships that

develop in the game, the web-sites had frequent notices of weddings between characters. These relationships also include conflicts, as described by Huxley, who was involved in an in-game dispute over treasure. This dispute resulted in a number of people who were formerly in-game friends stopping all communication with each other.

The creation of sub-organizations within the community adds another dimension of complexity to social relationships. These organizations, called *guilds*, create a mechanism for players to share wealth and easily create adventure groups. Three of the interview subjects are guild members and stated that high-level play[6] is made easier with membership.

Complex social and environmental necessities: The world of *EverQuest* was designed to encourage interaction with other players. To accomplish this, players are competing for scarce resources that are unattainable without the help of other players. According to the players interviewed, as well as the discussions observed on the web forums, players must actively seek out groups to play with, while at the same time competing on an individual level for rare items. This creates a rich level of interaction between players. The guilds in *EverQuest* mirror the compete/cooperate dynamic of individual players, resulting in guild alliances and feuds.

Bound by place: *EverQuest* effectively simulates the geographical bounds of off-line community. While it is possible to communicate with anyone in the game, regardless of in-game geographical location, the fullest level of communication, including gestures and sounds, requires proximity between characters. Many players were observed to express emotion upon "seeing" each other, such as waving and hugging. This effect of the simulation of proximity is particularly interesting when viewed as a merger between the boundary-less nature of traditional on-line community and the proximity requirement of off-line community. Players from around the world can experience simulated proximity.

Lived: Players routinely plan and hold events, including weddings, drunken pub-crawls, cross-continental races, and dueling tournaments. It is important to note that these are player-initiated events, not planned by the game company. Additionally, common rituals were found among players ranging from special cheers to elaborate patterns of greeting.

Stable patterns of social meaning: *EverQuest* features an elaborate code of social conduct that has been developed entirely by players. According to Kang, some of these conventions were imported by players who had experience with MUDS while some were created for *EverQuest*. Examples of accepted conduct are the use of separate channels for different types of communication, with distinct types of text for transactions, out-of-character comments, and in-character announcements to other players in the greater vicinity.

Consequences for unacceptable behavior: Because *EverQuest* is a professionally maintained game, the game company deals with behavior that is blatantly disruptive. For behavior that is not disruptive enough to warrant expulsion from the game, however, Verant has adopted a hands-off policy. This has resulted in the *EverQuest* players devising methods to deal with other players who do not cooperate with the accepted norms. Both Huxley and Kang described ostracizing players who display unacceptable behavior, such as refusing to follow the procedures for determining ownership of items. Because high-level play requires a group, players who are "blackballed" are effectively stopped from playing the game.

Collective cognition: Perhaps the best evidence of collective cognition in the *EverQuest* community is the discussions on the web-sites. These discussions range from strategy and tactics to folklore and stories. In many ways, these web-sites represent the newspapers, magazines, and journals of the game world. Also, new players are welcomed into the *EverQuest*

[6] High-level play is playing in the more difficult and advanced sections of the game.

community in a number of ways. Veteran players regularly organize "newbie events", in which new players are given instruction and quests to gain experience in playing the game.

Existence of outsiders: In traditional virtual communities such as newsgroups, members who do not follow the community's code of conduct are systematically ignored. In effect, the transgressor ceases to exist in the eyes of the community. In *EverQuest*, transgressors continue to co-exist with the community. After being "blackballed" from grouping, a misbehaving character is still a factor in the world, and can still influence the community.

6 Conclusions

Based on the findings of this research, the virtual community of *EverQuest* possesses many characteristics present in off-line communities. This suggests that MMPOGs have bridged a gap between traditional on-line communities and off-line communities. MMPOGs now give that part of society that has embraced the on-line world, the experience of off-line community with the benefits of the on-line world. This application of technology means communities do not have to be limited by distance or geography, nor does the desire to remain anonymous present a barrier to entering a community. Whereas previous virtual communities have failed to develop into true communities, the MMPOG model presents the next step in the evolution of community.

7 Implications

Perhaps one of the most important implications lies in the business world, because business drives the direction of technology. In recent years many have correlated the success of on-line businesses with a company's ability to create a sense of community on-line. This sense of community gives on-line businesses a sustainable competitive advantage through customer loyalty, word-of-mouth adoption and referrals, and the introduction of high costs associated with switching products. In fact, many e-commerce companies consider the virtual communities built around their products to be their most significant assets. Just as George Lucas created a fan culture and an economic engine with *Star Wars*, MMPOGs like *EverQuest* present similar business opportunities because of their large, loyal, and sustained communities. Because businesses value this sense of community so highly and because this research has shown that MMPOGs have created the communities that on-line businesses have been striving for, more money will be funneled into MMPOGs and applications utilizing MMPOG technology.

On a cautionary note, the immersive nature of MMPOGs is not to be dismissed. As the quality of on-line communication and interaction continues to improve with advancements in bandwidth utilization, sound and image quality and various modes of communication, the reasons to interact physically decrease. Currently, the average on-line gamer spends over 30 hours per week playing games [11]. Players have to begun to sell virtual items from MMPOGs for real money. A rare magical item from *EverQuest* was recently sold on eBay.com for US$5,100[12]. What social costs will society pay for this? Are individuals increasing or decreasing their interaction with the offline world? While beyond the scope of this paper, these findings certainly justify further research into these subjects.

Finally, because of the immersive nature of MMPOGs, where will society draw the line between virtual and real? If a person spends so much time on-line and their experience is so similar to off-line experience, should their virtual life be valued as much as their physical life? Should a virtual life be protected under the regulations of a physical life?

This research shows that not only have MMPOGs allowed an incorporation of off-line elements in on-line community, but suggest that MMPOGs represent a forerunner in the application of all telecommunications technology, including the opportunities and issues that lie

ahead. Therefore, the most important result of these findings is the demonstration of need for further research into the potential impacts of virtual community.

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