

# Project Massive: A Study of Online Gaming Communities

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## ABSTRACT

Massively Multiplayer Online Games (MMOGs) continue to be a popular and lucrative sector of the gaming market. Project Massive was created to assess MMOG players' social experiences both inside and outside of their gaming environments and the impact of these activities on their everyday lives. The focus of Project Massive has been on the persistent player groups or "guilds" that form in MMOGs. The survey has been completed online by 1836 players, who reported on their play patterns, commitment to their player organizations, and personality traits like sociability, extraversion and depression. Here we report our cross-sectional findings and describe our future longitudinal work as we track players and their guilds across the evolving landscape of the MMOG product space.

## Keywords

MMOG, MMO, MMORPG, guilds, massively multiplayer, persistent worlds, group formation, CSCW.

## ACM Classification Keywords

H.5.3 Group and Organization Interfaces. Computer-supported cooperative work.

## INTRODUCTION

With few exceptions, playing games by oneself is an artifact of the computer age. Before this, most "games" be they on the tabletop or in the field required the involvement of other people. After a few decades in solitary confinement, technology is allowing today's gamer to return to the good old days of social games. In the 1990s, user enthusiasm for Internet based multiplayer PC games like Meridian 59 and Ultima Online hinted at the potential commercial and social impact of the Massively Multiplayer (MMP) genre. Even before that, text based Multi-User Dungeons (MUDs) captivated some gamers by offering a collaborative social experience in a persistent online world. With the widespread availability of broadband internet connectivity and 3D acceleration hardware, graphically intensive multiplayer online games like CounterStrike and Everquest have developed into a sizable part of the interactive entertainment industry. The distinction between

multiplayer games like CounterStrike and massively multiplayer games like Everquest is the number of players able to play together at once. MMOGs commonly support thousands of players on a given server, while conventional multiplayer games can typically handle no more than 32-64. Today in the United States and Europe, products like Star Wars Galaxies and EverQuest command audiences of 200,000 to 440,000 subscribers who purchase the client software for 30-60USD and pay a monthly fee of around 15USD to play [3]. In Korea, NCSOFT's Lineage has approximately 4 million subscribers, though certain eccentricities of the Korean market (e.g. public availability of games in internet cafes or 'PC baangs' and unique subscription models) make the numbers difficult to compare to the US. What is clear is that MMOGs, or perhaps interactive entertainment product offerings based on massively multiplayer design conventions show continuing potential as major sources of entertainment for consumers and income for developers. In addition to the fun of playing, players often form lasting relationships with the people they play with online. At the same time, participation in these immersive gameworlds requires a considerable time commitment from players, which may affect their real life activities and relationships.

Project Massive was initiated to investigate the way MMOG subscribers play, communicate, and organize. This paper summarizes some of our early results from the larger project. More information is available at [www.projectmassive.com](http://www.projectmassive.com).

## METHOD

Building on the information collected during a series of hour-long interviews with 15 experienced online game players, we developed a 69-item survey and posted it on the World Wide Web at [www.projectmassive.com](http://www.projectmassive.com). The survey was multiple-choice in format, but provided free response sections for use when the fixed choices were not satisfactory.

Recruitment of users for this phase of the study took place online via posts to web forums and direct recruiting within Ultima Online, Everquest, Dark Age of Camelot, Anarchy Online, and The Sims Online. Respondents were contacted via posts on forums and web pages, both game specific and devoted to the MMP community at large.

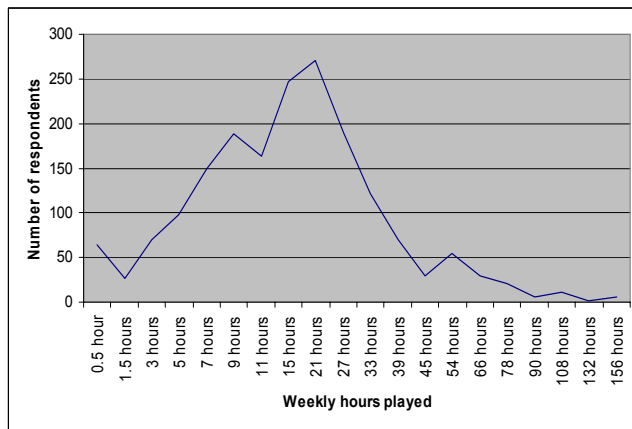


Figure 1: Average hours played per week.

## RESULTS

1836 respondents between the ages of 12 and 68 ( $M=27$ ) completed the online survey. Males comprised 90% of the sample, with 187 female respondents participating. We received 1202 responses from Everquest players, 442 responses from Dark Age of Camelot players, 91 from Anarchy Online, and 10 each from Asheron's Call (AC) and Ultima Online (UO). Due to their low response rate, AC and UO will not be discussed any further. The large proportion of Everquest players in the sample is reflective of both the game's popularity and the fact that many of the web forums to which we posted catered to a collection of MMPs which almost always included Everquest.

Figure 1 depicts respondents' reports of the amount of time per week they spend playing their preferred game. Everquest, Dark Age of Camelot, and Anarchy Online players all reported playing for an average of 15-21 hours per week, the equivalent of a half-time job. The distribution is skewed to the right, with 12% of players indicating that they play more than 40 hours per week.

A series of questions asked respondents about their various motivations for playing MMPs and the primary reason for maintaining their ongoing subscription to their most played game. Thirty-nine percent of the players reported that the social experience was their primary reason for playing; this motivation did not differ by gender. Figure 2 shows the responses to the item about the player's main reason for maintaining an ongoing subscription to the game. This pattern was consistent across all games studied, underscoring the importance of the social experience. That social contact comes in third behind fun and character growth is unsurprising, as these are arguably the two central elements of role-playing gameplay.

It is, at first, troubling that 10% of the players report addiction as their main reason for continuing to play. However, addiction is a widely used and loosely defined

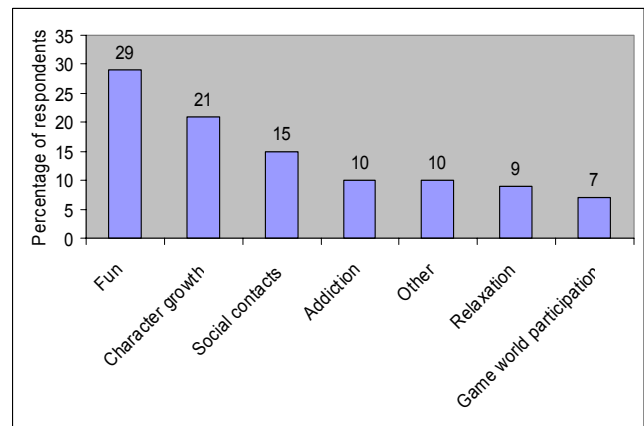


Figure 2: Main reasons for on-going play in an MMOG.

term when applied to video games. For example, "addictive gameplay" is used in the gaming press to describe a desirable quality which entices the player to play for one more turn or level, not unlike a book being called a "page-turner". This is completely unlike the debilitating physical and behavioral addictions brought on by drugs, alcohol, pornography, etc. To be sure, there are individual who may be behaviorally addicted to video games. However, the summary self-report data here should not necessarily be considered a measure of this type of addiction.

In the future we will more specifically address behavioral addiction to play as it effects the real-world activities of these players, For a more detailed discussion of MMORPGs and addiction, please see Yee's *Ariadne* [4].

## COMMUNICATION

Since relationships at both the personal and organizational level are formed and maintained through communication, we asked several questions about how and how often players communicate, and what they discuss. The respondents indicated that they frequently used all of the major varieties of chat (Broadcast, Guild, Group, and Private). In contrast, voice communication (e.g., voice-over-IP), conference calling and person-to-person calling were almost never used. It should be noted that at the time of this writing, no major MMP release contained native voice communication in its client. However, several existing third-party applications including Roger Wilco and Microsoft Voice Commander enable voice over IP sessions to run in the background during gameplay. Again, these products were rarely used.

When asked about the content of their in-game communication, respondents reported communicating for the exchange of support and advice (77%), social exchanges / small talk (77%), and coordination and scheduling of activities (76%). In contrast, fewer respondents reported talking about sharing personal experiences (53%) and dealing with guild management issues (58%).

Sixty-nine percent of respondents indicated that they communicate outside of the game with fellow gamers. Message boards were both the most widely and frequently used method of out-of-game communication. Their popularity reflects the prevalent use of guild web pages and game forums as the medium for player communication outside of the game world. The popular Vault Network (VN) boards at vnboards.ign.com are a testament to this widespread use of out-of-game threaded conversation resources in the MMOG community. While used less frequently than message boards, players also reported frequent use of instant messenger programs and email in their efforts to communicate with fellow players outside of the game.

Like in-game communication, out-of-game communication was primarily used for coordinating and scheduling activities (57%), exchange of support and advice (55%), and social exchanges (53%). These percentages are lower than those obtained for in-game communication, because 28% of the respondents reported that they had no communication outside of the game with members of their guild. Out-of-game discussion of group management issues was practiced by only 28% of the sample, suggesting that these duties are often handled by a subset of individuals within each player organization. The slight reordering of these responses in the out-of-game context reflects the asynchronous nature of message boards and email, two of the most used out-of-game tools. The synchronous, or real-time, nature of the in-game communication modalities makes them slightly better suited for social exchange and provision of advice than the more latent out-of-game tools.

Message boards (60%) and the guild's "message of the day" (58%) were the most common communication modalities used to coordinate times for play. A "message of the day" (MoTD) is a 2-3 line message that members of a guild see each time they enter the game. It is often set by guild leadership and contains the dates and times of planned activities. Guilds seldom used email (34%), and IM (23%) for this particular purpose.

### THE GUILDS

Seventy-eight percent of respondent reported that they were members of guilds. Respondents who were members of a guild played more hours per week ( $M=15$  hours) than those who did not claim membership ( $M=11$  hours),  $t(1804) = 7.56$ ,  $p < .001$ . Because this is a cross-sectional survey, the direction of causation in this relationship is not clear. One can argue that guild membership encourages more play. However, people who play more hours have more opportunities to discover and join guilds.

The average reported guild size across Dark Age of Camelot, EverQuest, and Anarchy Online was 41-45 people. However, players from all three games expressed the belief that a larger guild of 61-75 members would be "ideal." The players reported that their guilds staged pre-planned activities, often called raids, 1-2 times per week.

### MEASURING COMMITMENT TO THE GUILD

In examining the effect of communication on the formation and maintenance of player organizations it is valuable to have some measure of how involved various players are in their guilds. We included an adaption of Mowday et al's Organizational Commitment Questionnaire (OCQ) in the online survey to measure the degree to which individuals felt committed to their guild [1]. The OCQ consists fifteen statements about their guild, which the respondent is asked to rate on a seven point Likert scale from Strongly Disagree to Strongly Agree. The OCQ total score is the average value of the 15 responses. Though the scale was developed to index commitment to work organizations, we needed to make only minor alterations to its wording to fit this domain. The scale is highly reliable, with a Cronbach Alpha of .91. The mean OCQ score of 5.3 out of a possible 7 indicates that players on average felt "somewhat committed" to their player organization.

There were no significant differences in OCQ score among guilds. That is, a one-way analysis of variance (ANOVA) predicting players' OCQ scores by guild shows no significant effect for guild. The failure to find guild effects, however, may be a result of low statistical power in this analysis. Although the sample is large in terms of individuals, it presents only 34 guilds that contributed three or more respondents. This small sample of guilds limits our ability to see whether strategies adopted by different guilds influenced member commitment.

### Modelling Player Commitment

Because there were no differences among guilds in average organizational commitment, we used linear regression at the individual respondent level to examine whether the tools a particular player used or features of that player's motivation predicted commitment to his/her guild. The five variables in Table 1 can account for approximately a third of the variance in OCQ score (adjusted R-squared of .322). We acknowledge that relationships we uncover using individual-level data may reflect either features of the guild (e.g., players are more committed to guilds that preplan raids or use email to communicate with guild members) or perceptions and behavior of individual players (e.g., players are more committed when they perceive their guild as preplanning more raids or when they use email to communicate with guild members).

Model Attributes	Beta	S.D.
The proportion of guild members in a player's play groups	-.232	.032
The frequency of preplanned guild activities	-.205	.019
Motivation to play MMPs as a way to interact socially with online friends	-.186	.018
Frequent use of Email to contact group members OUTSIDE the game	-.140	.014
Frequent use of Message Boards (web) to contact group members OUTSIDE the game	-.116	.013

Table 1: Five attributes associated with higher OCQ scores.

Table 1 shows that the social character of game play and out-of-game communication both contribute to players' commitment to their guilds. In terms of the social character of the game, players were more committed to their guilds if guild members comprised a higher proportion of the group they played with, and if they played MMOGs as a way to interact with online friends. With respect to communication, preplanned guild activities and the email and message board communication often used for planning these activities, predicted commitment. As we observed in the communication section above, preplanning of play activities is the primary type of out-of-game communication and the second most common content type for in-game communication. The organizational practice of preplanning can be seen as an enabling factor for playing in groups comprised of a high percentage of one's online friends. It should be noted that these social and communication factors are likely to operate cyclically as they enhance the play experience. Simply, if scheduling an event on a message board results in an event where a high number of guild members participate and enjoy themselves, then such a paradigm is likely to repeat itself with greater frequency in the future. At the same time those participating in the event are likely to experience increased motivation to play with the members of their organization based on their enjoyment of the previous experience.

#### Commitment and Play Time

Linear trend analysis was used to examine the relationship of OCQ score and hours played per week. A player type variable was created that divided the sample into three categories: highly committed players, average players, and uncommitted players. Committed players were those members of guilds whose OCQ scores were one standard deviation above the mean or higher (OCQ over 6.33). Average players were those players with OCQ scores within one standard deviation from the mean (OCQ between 4.33 and 6.33). Finally, uncommitted players were those players with OCQ scores more than one standard deviation below the mean (OCQ below 4.33). We predicted a linear trend in the play hours data in which committed players would play more than average players who would play more than uncommitted players. Both the ANOVA ( $F(2,1317) = 29.17, p = .000$ ) and the contrast test of the predicted trend ( $t(1315) = 7.28, p = .000$ ) were significant. Committed players reported playing 18-24 hours per week while average players reported playing 12-18 hours per week. Uncommitted players reported playing 10-12 hours per week. Players who are committed to their player organizations play more than those who are not. Again, the causal ordering of these factors is not determined, but their relationship is strong and predictable.

#### CONCLUSION AND FUTURE WORK

This initial phase of Project Massive has shed some light on the effect of various communication tools on the creation operation, and maintenance of guilds. Based on our findings, we encourage developers to provide turn-key

facilities to their player organizations that support web presence, forums, and even out-of game email facilities which would protect player privacy while facilitating communication. A noteworthy step in the right direction is Star Wars Galaxies' fairly robust in-game email client. Placing the proper tools such as this within easy reach of the player community will enhance their ability to create consistently reinforcing experiences in which they are able to plan to play together frequently and execute those plans with a high percentage of familiar players in attendance.

Based on a cross-sectional survey, we cannot determine the causal ordering among the variables we have examined. We do not know from these data if players are committed to guilds because they use the out-of-game tools, or whether they use the out-of-game tools because they are committed. Similarly, we do not know whether guilds' frequent hosting of pre-planned events gives rise to high usage of email and message boards, or whether the use of these communication tools facilitate group coordination in such a way that makes pre-planning possible. We suspect, however, that communication and guild commitment are reciprocally caused. Participation in the guild community via email and message board postings will enhance one's commitment, while, at the same time, commitment will lead to more communication with the group. In the same way, the weakness of a cross-sectional design also prevents us from making causal claims in regard to the relationship between commitment and hours played per week. Fortunately, these problems can be overcome through the implementation of a mixed model longitudinal design like those promoted by Singer and Willet [2].

Going forward, Project Massive will follow up with the respondents who participated in the first survey to see how their play experience has evolved while still collecting the commitment, extraversion, sociability, and depression measures as in the initial phase. The flexibility of the mixed model design will allow us to add new respondents to the sample as we proceed, reducing the effects of attrition. Longitudinal techniques will also allow us to observe these players and their organizations as they choose to move on to new products as large units or as smaller groups, and whether they remain in contact with one another once they become split across games.

#### REFERENCES

1. Mowday, R., Steers, R., and Porter, L. (1979). *The Measurement of Organizational Commitment*. Journal of Vocational Behavior 14, 224-247.
2. Singer, J.D. & Willet, J.B. (2003). *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. New York: Oxford University Press.
3. Woodcock, B.S. (2003). *An Analysis of MMOG Subscription Growth – Version 6.0*. at: <http://pwl.netcom.com/~sirbruce/Subscriptions.html>
4. Yee, Nicholas. (1999-2002). *The Hub: Exploring the Psychology of MMORPGs*. At [www.nickyyee.com/hub](http://www.nickyyee.com/hub)