The Social Structure of Massive Multiplayer Online Game Communities

- Investigating the social network of a World of Warcraft guild

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Abstract

The growing role of communication using computers in people's everyday lives is reflected by the debates about massive multiplayer online role playing games (MMOs) like World of Warcraft and the Internet as a whole. While people may be driven by the same psychological drives that have spurred interaction between people in the past, this interaction is increasingly facilitated with the use of computer mediated communication (CMC). Can strong relations form between people that are separated by great distances in space using CMC? The presence of strong relations in MMOs could open the possibility for MMO communities to thrive.

A social network analysis of a MMO guild with 50 members was conducted using an online survey, which produced a non-response rate of 50 percent. Participants were asked about their age, the time they had spent in the guild and their gender in order to explain the social structure of the networks. They were then asked to state the strength of their relations with each of the other members of the guild on a scale from "one, neutral" to "five, strong friendship". The social network analysis program Pajek was used to investigate the characteristics of the social network using so called sociograms.

The essay concludes that numerous strong relations exist within the guild and that a long time spent in the guild increases the number of strong relations a guild member has. The results show that guilds may form the cohesive backbone of MMO communities and proposes that future research be conducted on the brokerage between guilds in MMO communities in order to produce a comprehensive view of the social structure of MMO communities.

Keywords

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1. Introduction

This study began with my own personal experiences of the earliest multiplayer games as a teenager. I have always been fascinated by the social interaction between people through the internet. Considering the fact that almost all relations the average teenager has is forced upon him through the context of school and other activities, some of my first personal relationships created by my own initiative can be traced to online games[1] like Age of Empires. To someone that is used to fixed social contexts with clearly defined rules of interaction, chatting with someone over the Internet is a liberating, exciting and in many ways a terrifying experience. It was with this in mind that I observed the numerous debates about the presupposed dangers of the Internet and online games. The lack of understanding on the sociability of online games is likely to be one reason for the many misunderstandings of those debates. What needs to be understood is that the Internet is no isolated or socially unique place. It is simply another word for communication between people through computers. There are good relationships and bad relationships going on there, just like in the life people have been used to living so far. This thesis is about how that life plays out in the context of Massive Multiplayer Online Game, henceforth referred to as MMO, like World of Warcraft. The theories used to build a model on MMO relations are therefore taken from the models that were developed before the emergence of computer mediated social networks.

1.1 Background

The Internet is a broad term used to describe the interaction between people through the use of computers. Computers are machines that are controlled using different computer programs; collections of commands people can choose to give the computer to achieve certain tasks. These commands can order a computer to communicate with other computers through cables or broadcasted airwaves that cover almost the entire world. The Internet is the sum of all this communication; It is the sum of all the links between people conducting computer mediated communication, or CMC. The formal definition of CMC that is used here is taken from Thomas R. Lindhof and Bryan C. Taylor who define CMC as the process in which people create, maintain and transform meaning by interacting with the use of computer programs (Lindhof T. R, Taylor B. C 2002). Like all social interaction, The Internet exists only as long as someone is participating in it. When you turn your computer off, you are no longer part of

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[1] Computer games played versus other people on the Internet

the Internet. This illustrates the fact that the Internet is not a physical place, object or characteristic of human beings. The Internet is something that is done by people through social interaction. It is in other words a social network. The MMO community is a part of this network.

The MMO community uses a number of different programs to facilitate computer mediated social interaction between its members. The programs allow MMO users to interact by completing tasks in virtual worlds using virtual representations of themselves called avatars, talk using their voices in voice chat programs and communicate through text in chat rooms and forum boards. This interaction commonly takes place within groups called guilds. Guilds provide MMO users with programs necessary for CMC interaction and the coordination and leadership necessary to achieve some of the goals in MMO programs. Although they are administered completely by the MMO users themselves, the MMO programs often facilitate guild organization as a part of their game dynamics. These game dynamics can for example be that a guild can, if registered in the MMO program, store resources that its members have collected or design guild markers that show other MMO users what guild a person's avatar belongs too. There are also other more temporary types of MMO user groups that form in most cases to complete a certain task that requires more than one MMO user to be completed.

1.2 Purpose of the study

The purpose of this study is to examine the social network structure of MMO communities using MMO guilds as the network boundary. It is anticipated that the characteristics of the relations within guilds in the MMO program WoW will shed light on the existence of MMO communities. The research question for this study is therefore; What are the characteristics of the social structure of MMO guilds in terms of the strength of relations between MMO users?

1.3 Earlier research

The description above of the Internet as a social network explains why the study of MMO communities often focuses on the social interaction between people that use MMOs together (se for example Siitonen M. 2007, Yee & Moore 2004. Williams et al. 2006, Cole & Griffiths 2007, Koivisto 2003, Kayahara & Wellman 2007). Amongst other subjects of study, the practical forms of CMC interaction, objective and experience based measures of MMO user

behavior and MMO user typologies have been investigated with the purpose of understanding MMO communities.

Nicolas Yee and Robert J. Moore conducted an ethnographic study of the MMO program Star Wars Galaxies by observing the social interaction between MMO users at informal meeting places in the game (Yee, Moore 2004). They drew the conclusion that while many MMO designers attempt to create natural meeting places within the game, informal meeting places usually form, commonly in places where trade is conducted. Marko Siitonen uses a similar approach with the exception that he uses a participant approach by becoming a member of an MMO guild in the program WoW (Siitonen 2008). Siitonen concludes that MMO communities are aggregates of a social network that is stratified into tightly connected groups that center on the joint activities that are conducted in an MMO program. This implies the existence of social relations that are mediated through CMC. Further research has concluded that the limitations of this CMC are compensated by the fact that the MMO users interact over time and are able to adapt their communication behavior using for example using text to convey smiles and frowns represented by symbols like ☺ and ☹ (Walther 2006).

Research on the practical usage of CMC uses data partly on what the MMO are observed doing and partly what they state they do. Williams, Ducheneaut, Zhang, Yee, and Nickell study the extent to which MMO users are in the same group or are co-located within the different zones of the game. They use this relational data to determine the density of the social networks of different guilds (Williams et al. 2006). Helena Cole and Mark D Griffiths study the behaviors of MMO users using data that concerns the subjective experiences of players collected using an online survey. One of the issues they investigate is whether players perceive a difference between their online and offline friendships when it comes to issues of trust. Their results indicate that just under half of the MMO users found them comparable while 16 percent were unsure, concluding that strong friendships on the Internet are possible (Cole, Griffiths 2007).

Cole and Griffiths also make use of a third category of MMO research focus where player typologies are used with the purpose of correlating different types of MMO users with the time they spend online, concluding that certain types of players spend more time online than others. This usage of player typologies is common in MMO research and stems from a set of Multi User Dungeon[2] user typologies developed by Richard Bartle in 1996 (Bartle 1996). Bartle identifies four types of players based on discussions with experienced MUD users. These typologies where based on the motivations MMO users had

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[2] An early type of MMO program

for their participation in the MMO community. Researchers like Nick Yee have later revised and tested these typologies using statistical tools like factor analysis, arriving at the five MMO user typologies:

A. Relationship – Measures the desire to develop relations characterized by friendship with other people in the MMO. People that score high on this typology tend to find themselves spending a lot of time socializing with other MMO users about a number of different subjects.

B. Immersion – Measures the desire to become immersed in a make-believe construct. People that score high on this typology tend to use their characters to role-play together.

C. Grief - Measures the desire to use other players for ones own gains. People that score high on this typology tend to for example gank[3] other people or annoy them in different ways.

D. Achievement – Measures the desire to become powerful and achieve the goals of the game. People that score high on this typology will tend to maximize the damage their characters do and the equipment they have.

E. Leadership – Measures the gregariousness or assertiveness of a player. People that score high in this category tend to want to play with and lead other players.
(Se Yee 2007)

There are a number of further definitions and typologies developed by different researchers using different data sets (Cole & Griffiths 2001. Bekhtina 2002.). What they all have in common is the theoretical idea that the personal traits of people cluster into different typologies, which stems from the psychological research that commonly uses statistical methods like factor analysis to identify different personality types (John, Srivastava 1999).

   The research described above covers the qualitative research on how CMC works in practice and why people participate in MMOs. It also covers the quantitative research on the behavior of players that is based on relational data. It is noteworthy however that there is very little quantitative relational data available that is based on the subjective experiences of MMO users. The tendency in MMO research so far has been for quantitative studies to focus on what players do while the qualitative research focuses on why and how

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[3] Kill other MMO users avatars

they do it, leaving relational data based on the subjective experiences of the MMO users themselves a relatively unexplored field of research. This study will therefore attempt to collect relational data on how the MMO users experience their social interaction with others.

1.4 Disposition of the essay

This essay is divided into four parts. The first part concerns the theories used to develop measures of online relations and analyze the results of the study. It is followed by a methodological discussion about social network analysis, the measures that have been used and the usage of relational data. The third part of this essay is a presentation of the results from the study that has been conducted and the fourth part summarizes the study while discussing the meaning of the results in order to propose a direction for future research on MMO communities.

2. Theory

2.1 Focusing on social relations

Sociological studies often include a discussion about the psychological nature of human beings. This is necessary because while the study of social structure is a study of groups of people, social structure is essentially an aggregate of the actions and characteristics of individuals (Giddens 1992). This study will however focus on the on interaction between individuals because of the characteristics of the Internet described above. The assumptions made about the nature of individuals are therefore taken from a branch of psychology called social psychology, which focuses on the interaction between people.

2.2 Revised Dualism

The theoretical discourse of psychology ranges between theories that derive human actions from psychological drives observed from birth to theories stating that the actions of individuals are completely governed by the social environment they are in. In the former case there is also a distinction between theories that are based in a narrowly defined duality within a certain psychological drive and theories that derive their conclusions from a great multitude of drives. Between the extremes mentioned above are theories that build on the idea that different actions give people different emotions depending on their individual psychological drives, which affect people indirectly (Greenberg 1991).

2.3 The safety and effecence drive

Jay Greenberg builds his model on observations in psychotherapeutic research in a clinical environment. His idea is that while psychological drives do not directly affect what people want to do, they influence the emotions that a person feels while conducting a certain action. With this in mind, Greenberg proposes a dualism based on the psychological drives safety and efficacy (Greenberg 1991).

The propositions of a psychological safety drive stems from earlier research, which has found that people feel a strong resistance to view themselves and disclose information about themselves in a manner that is unfamiliar and therefore conceived as dangerous. The safety drive therefore pushes people away from unfamiliar relations around them while drawing them closer to familiar relations (Greenberg 1991).

The effecence drive represents the feeling of efficacy that comes from achieving one's goals. It has been observed in developmental research on the learning processes children go through and the joyous feelings the express when mastering different skills on their own. They are feelings of autonomy and individuality, which are associated with the effecence drive (Greenberg 1991). While Greenberg states that these feelings will push a person away from strong relations other researchers like Edward J. Lawler point out that the feeling of efficacy can be mediated through relations, which will have the opposite effect of encouraging social interaction. This effect explains how relations can change over time, or in other words how weak relations become strong and vice versa (Lawler 2001).

2.4 Affective social exchange

Lawler's model builds on the idea that the feeling of efficacy can have cohesive effects when it is socially mediated. In other words; people interact because their ability to achieve their goals increases through the interaction with others. Successful interactions cause the participants to feel positive emotions towards the relation and to the social group with which the interaction takes place. Unsuccessful interactions have the opposite effect of causing negative emotions. The formation and persistence of a relation can therefore depend on how it helps them achieve their goals and what emotions the achievement causes them to feel. (Lawler 2001).

The intensity of these emotions depends on the separability, a measure of difference, of each participant's contribution to the achievement. Strong separability decreases the positive emotions felt towards the interaction and non-separability increases them. It is an issue of dependency; the more dependent the participants are of the interaction the better they will feel about it when it succeeds. If the relation is non-separable and repeatedly leads to efficacy and positive emotions, the relation will transform into a strong relation over time. The dependency transforms into trust as the participants learn more about each other during the interaction. Lawler proposes that many relations characterized by safety form in through this repeated interaction (Lawler 2001).

There is ambivalence in the psychological mind-set of people described in the models above. They fact that people are simultaneously affected by the effecence and safety drives changes the structure of their social networks over time (Kadushin 2002). A relation that generates positive emotions at a certain time can generate less positive or negative emotions when the psychological drives of individuals change. If what they want from the relation differs, non-separability will arise. The relation becomes asymmetrical and must either change for both participants or disintegrate accordingly (Lawler 2001). Greenberg's and Lawler's models can therefore be used to explain how relations change over time. This essay assumes that this process is the basis for the formation of MMO communities.

2.5 The strength of relations

Relations that are characterized by intense emotions described above can also be described as strong relations. The strength of relations is an important characteristic of the interaction between people because it can be used to understand what type of exchange is going on between the participants. The sense of strength in these relations is taken from Kadushin's description of how relations form in a process starting at effecence and developing into safety over time. Kadushin points out that it is likely that MMO networks will be dense and characterized by many strong relations because social interaction though CMC is relatively easy (Kadushin 2002). The formation of many strong relations is therefore been theorized to be likely in an MMO context.

2.6 The Community

The psychological drives described above characterize the process in which relations between people form and develop communities. The term community must however be further

discussed in order to develop a theoretical base that can be used to analyze the data collected in this study. Markoo Siitonen distinguishes two categories of communities; communities that are based on geographical proximity and communities that are based on choice. MMO communities will fall into the latter category because the nature of CMC allows MMO users to interact from very different geographical locations. This makes it easier for people to choose to enter a MMO community based mainly on their interest. He therefore refers to MMO communities as communities of interest; MMO users meet online because they share a common interest in MMO programs (Siitonen 2007).

This standpoint resembles some of the theories proposed by Anthony Giddens. Giddens states that because communities are based on the social interaction between people, it is dependent on the social and geographical context that people live in and the resources that they gain from interacting with different people. Affiliation with different communities is in other words a varying matter of choice for individuals because a person's ability to join or leave a community depends on how the interaction between the community's members is mediated; it is a matter of time and space (Giddens 1991). Because all human interaction must be mediated, and that communities are an aggregate of this interaction, the question on how CMC affects the interaction between people becomes relevant in this study.

The development of CMC has facilitated social interaction over long distances over very short periods of time in a larger extent than previous forms of communication between people. The increased ease at which people can communicate has made affiliation to different communities mediated using CMC a growing matter of choice. Giddens proposes that this development has been ongoing since the early developments of print to the telegraph and that the separation of time and space is an important characteristic of modern societies. It is an important characteristic because making it easier for people to choose what social interaction to enter allows them to change their identities more freely than before. Entering an interaction with another person becomes less dependent on a person's geographical proximity, class or biological characteristics and more dependent on what resources the interaction will provide. The community had therefore grown in importance compared to other important social structures like class, ethnicity and gender. (Giddens 1991)

These ideas fit the purpose of this study well because they allow us to draw because many of the developments Giddens and Siitonen mention are apparent in CMC communication. The geographical limitations of MMOs are for example less limited than the geography non virtual life, facilitating people's ability to choose what social interaction they

wish to conduct. Note however that while CMC is technologically almost completely separated from time, people who use CMC are still separated by space.
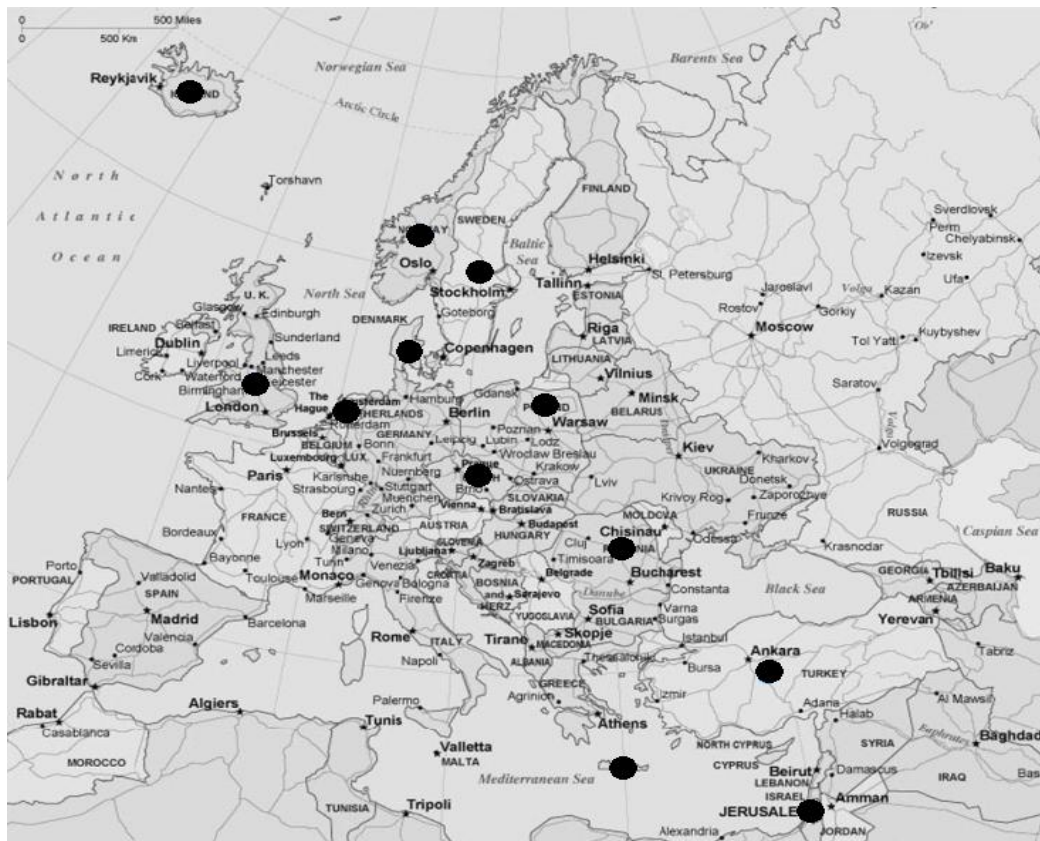
Diagram 1, Geographical Proximity of Participants in the Study

The diagram above shows that while the concept of separation of time is highly relevant for the data used in this study because of the characteristics of CMC, there is still the aspect of time zone differences between participants, or in other words space. The members of the studied guild live in a variety of countries in Europe with the farthest distance being between the member in Iceland and the member in Israel. They are geographically located in 12 different countries separated by eight time zones. The members of the guild studied here are therefore relatively separated from time and space compared to the non virtual social structure they live in. The time zone differences act as a limitation to the borderless nature of CMC with respect to time. This characteristic of MMO communities has been identified as one of the reasons the use of MMO is seen as problematic for some people. Interacting within an MMO and maintaining a social network there may require people to interact during nights and working hours, a behavior that may conflict with other aspects of life like work or school (Linderoth 2007).

Online communities are in conclusion communities of choice that are primarily mediated through CMC interaction. They differ from previous communities in history in that communication between its members is easier and that they are easier to enter and leave but are still governed by the same psychological drives that form other types of communities. They are an aggregate of social interaction and can be observed by investigating the social structure of social networks of people. While little research has been conducted on the social structure of MMO communities, a well known setting for the interaction between MMO users are guilds, a type of group of MMO users that use the MMO together.

2.7 The role of guilds in the MMO community

The socio-psychological theories, the player typologies and the community research described above can be used to investigate the social structure of MMO communities as a whole. This study will however focus on so called MMO guilds due to the practical problems associated with collecting the large amounts of data needed to analyze an MMO community as a whole. The MMO guild is a group of players that choose to repeatedly interact in the game in organized forms. They often have leaders, officers, websites, forums and some form of distribution of resources between its members. MMO users enter guilds for different reasons. Some focus on achieving the goals of the game and are able to do so more easily by cooperating with other players in the guild. They are then driven by the efficacy they receive through the cooperation with others. This cooperation will allow them to form stronger relations over time that are characterized by the mutual trust and social support that stems from the safety drive.

Guilds will therefore consist of a strongly connected group of members that have interacted with each other over a long period of time and a periphery of surrounding new members that are weakly connected. This essay proposes that guilds therefore form the backbone of strongly connected people that are needed to develop a sense of a common identity that is needed for a community to exist. The data analysis will therefore focus on identifying the core and periphery of the studied guild. The first step is to look for strong relations between the participants of the study.

2.8 Structural Cohesion

The strucutral measure used to investigate strong relations in social networks is called structural cohesion, henceforth simply referred to as cohesion. There are several ways of meausring cohesion. The idea is that it is possible to hypotheically travel from one part of the

network to another through the relations between participants in a number of different ways. The shorter the paths tend to be the denser the network is (Nooy et al. 2005).

Consider also the fact that the data used in this study is directed, which means that the paths only go in one direction. A participant may experience a relation with another participant that experiences no relation back. That means that it is possible to travel from the first participant to the second but not back. The degree to which people agree on the nature of their relations is the reciprocity of the relation.

Using directed relations will increase the importance of reciprocity on path length. This study will make use of the conept of paths within a network to identify cohesive groups within the social networks. Imagine traveling from each participant through direct paths til you arrive at a dead end. If you limit the distance of the path you can identify groups of participants that reach each other at certain path lengths. The shorter the paths the smaller the network group, or component. Weak components include participants that are directly and indirectly to each other, i.e through a mutual participant in the same component while strong components only include participants that are directly connected in the same component (Nooy et al. 2005). This essay will focus on strong components as it is anticipated that the networks will be relatievly dense.

2.9 Structural prestige and degree

Structural prestige is a measure that can be used to compare the structural position of the participants in the study. It counts the number of relations each person has and compares that number to the average number of relations people tend to have in the network (Carrington et al. 2005). Note that a relation between two people can have unequal strength depending on which person in the relation you choose to ask. A certain person within an MMO guild can for example state that she has numerous weak relations and still receive a number of strong relations back. This difference between inbound and outbound relations is therefore distinguished by reporting two structural prestige measures for each person; her in degree and out degree of structural prestige (Nooy et al. 2005).

This study will focus on the number of in degree relations the participants receive. This choice is based on the idea that the efficacy and social support an individual can receive from a relation is available only if the other participant in the relation agrees that a relation exists. This idea is described with the term reciprocity. Reciprocity is the degree to which two people amend their relation with a similar value (Lawler 2001). It is assumed in

this study that a relation where both participants value their relation strongly is stronger than a relation where this is only true for one of the participants. This measure of strength is used to determine the strength of the relations between participants in order to identify cohesive groups within the network. The diagram below illustrates the scale that is used in the analysis below.

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Weakest            Strongest
  1,1  2,2  3,3  4,4  5,5
  1,2  2,3  3,4  4,5
  1,3  2,4  3,5
  1,4  2,5
  1,5
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Diagram 2, Relation Strength Scale Using Reciprocity

The diagram above shows the scale used in this study to determine the effect of reciprocity on relation strength. A relation where both participants define the relation strength at one will be listed as "1,1" while a relation where one of the participants defines the relation at for example strength one but receives a relation of strength two back will be listed as "1,2". Note that a relation of "2,2" is considered to be stronger than a relation at strength "1,5" even though five is a stronger relation strength category than two.

3. Method

3.1 Social network analysis

Social network analysis is a set of measures developed by ethnographic researchers in the 50's which are used to analyze relational data. One of the first of these measures was the use of sociograms. Sociograms present images of what social networks look like using dots to represent people and lines to represent relations between people. Social scientists soon started trying to make comparisons between the position of people within these sociograms and between different social networks. The problem at that stage was that the computers of the time where unable to handle the necessary calculations. The development of computers with the ability to handle the heavy mathematical load of the necessary calculations therefore produced a number of papers on social networks and the methodology of social network

analysis was established (Watts 2003). This study will make use of some of that methodology to investigate the nature of relations within MMO guilds. It consists partly of measures that describe individual relations and partly measures that describe the structure of the relations as a whole.

3.2 Procedure

Participants were initially contacted[4] through a post in their guild forums explaining the purpose of the study and what would be asked of them if they choose to participate. When further interest was shown further posts where sent starting a discussion about the survey and the study as a whole. Attempts were then made to contact someone within the guild to act as informant in the forthcoming data collection. A survey for the guild in question was then designed and uploaded online.

       The survey needed a complete list of the members in the guild, which was found at the World of Warcraft armory. Most guilds however have an extensive number of members, some of whom are alts[5]. The list was therefore limited to the first fifty character names sorted by level[6]. A post was also sent mentioning that anyone who where off the list could ask to participate, which lead to a slight revision of the guild list. The online survey[7] was coded using Jot Form[8] and added to the project site through a link posted in the guild forum and on the guilds message of the day[9]. A short text about the study along with references and links to the ethical guidelines provided by the Swedish research council was available on the survey site and the redirect site[10] participants arrived at after submitting their responses. The submissions where automatically sent to the project E-mail address and then printed before coded.

       Some additional contact with participants occurred during the data collection. I made myself available online and via the text chat program MSN through the project E-mail address in order to answer questions about the survey and the project. It was also anticipated that the project site would be another source of information for the participants. The site was

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[4] The post is available in appendix 3
[5] Alternative characters a certain person can have other than his/her main character.
[6] The experience level of the character, which can be translated to the amount of time a person has used a certain character.
[7] http://www.virtuellsociologi.se/Eng/nightshiftsurvey.htm
[8] http://www.jotform.com
[9] A message all guild members receive in their chat log when they log on to WoW.
[10] http://www.virtuellsociologi.se/Eng/thankyousite.htm

therefore extended to include a text about ethical guidelines, the survey and social network analysis prior to the initial contacts with participants.

3.3 Operationalizing the Online Survey

There are two types of relational data that can be collected for use in a social network analysis; data about how people subjectively experience relations and data about how they interact in practice (Marsden 2005). Marsden describes the major difficulties with the former as being heavy for respondents to provide and the second as hard to collect for practical reasons. The choice to focus on the subjective experiences of people in this study made the question of making the survey as simple as possible a priority. There are several ways of designing a network survey to achieve this goal.

A network survey must partly capture which people are included in the network and partly the characteristics of the relations between those people. The former type of questions are referred to as name generators, as they generate the names of the people who are a part of the network and the later are referred to as name interpreters, as they interpret the characteristics of the relation between the participants. Name generators can be replaced if the network boundaries are known beforehand and a complete network survey design is used. Participants are presented with a list of all the people that are considered part of the network and are asked name interpreter questions to each of the other members of the network. This method is useful because it decreases the number of questions that have to be asked in the survey while problematic if the network is large (Carrington et al. 2005, Morris 2004).

It was anticipated that a list survey design would be the most suitable as the number of members in the studied guild was surmountable enough to include in one survey. Participants would then be given more time to answer the name interpreter question concerning the strength of their relations to the other members of the guild, which was the primary focus of the study. The name interpreter questions where operationalized as shown in the diagram below:

Background questions

First I would like to ask a few background questions:

Main character name	
Other characters	
How long have you been a member of Nightshift?	
Rank in the guild	
Age	
The country you live in	
Are you (not your in-game character)	○ Male ○ Female

Strength of relations

The questions below are a measure of the strength of the relations between you and the other members of the guild. 1 indicates a neutral or no relation at all, 5 indicates strong friendship. Leave the field open if the character is one of your alts.

neutral ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 strong friendship

neutral ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 strong friendship

neutral ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 strong friendship

neutral ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 strong friendship

neutral ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 strong friendship

Diagram 3, The Online Survey

The diagram above shows that background questions about the participants were asked using open text fields. The name interpreter questions where listed using a five point scale from "neutral 1" to "5 strong friendship". The relatively broad term "friendship" was used in order to capture the varying definitions of friendship the participants might have.

3.4 The data analysis

The data was analyzed using the social network analysis application Pajek[11]. Pajek is a freeware program developed by Vladimir Batagelj and Andrej Mrvar. The data was registered in text files where each participant was assigned a number. Lists where then composed where the participants that had relations to each other where listed pair wise. Additional information about the nature of the relations and the characteristics of participants was also be registered in these files. Pajek was then used to calculate statistical measures on the data like cluster

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[11] http://vlado.fmf.uni-lj.si/pub/networks/pajek/ (9 June 2009)

distribution and the visualization of the networks in sociograms, which was accomplished using different commands that can be accessed in the program.

3.5 Validity, response rates and Reliability

While the use of a very broad definition of friendship decreases the risk that relations are overlooked, it creates another problem with the validity of the survey. People may define the term friendship in a number of different ways. This difference may be part of the explanation behind the variation in the number of strong relations people state that they have. The degree of this variation has not been investigated in this study and must therefore be taken into account when surveying the results below. A similar problem concerns the choice to focus solely on positive relations. Hostile relations can theoretically be included in the definition of strong relations, indeed it may have yielded some interesting results. The choice to ask only for positive relations was based on ethical considerations because they are assumed to be of a less sensitive nature.

A third problem concerning the validity of the measurement of friendship concerns the time period respondents answered the survey. Social networks develop as people interact over time. It is therefore preferable that participants answer the survey at the same time.
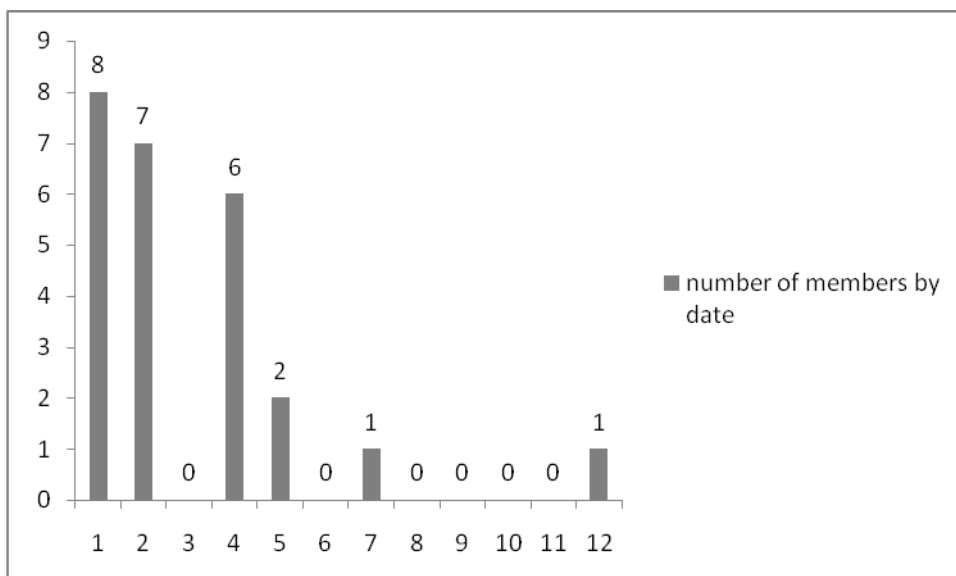

Diagram 4. Number of Participants, Response Rate by Days (N=25)

The diagram above illustrates the response rates over the time period of two weeks in February 2009 that the survey was online. Over half of participants answered the survey

within the first four days. Four participants responded the remaining week. Considering the fact that the shortest time participants had spent in the guild was one month, it is anticipated that the time lapse between the survey answers is short enough for the surveys' validity to be considered acceptable.

The main threat to the quality of the study's results is the low response rate of the survey. Unlike most online surveys, the survey used here was based on a fixed set of participants. This design renders the problems associated with self selected populations irrelevant while emphasizing the problem of non-response rate. One problem with non-response rate is that participants that fail to answer the survey may have characteristics that are different from those that answer the survey. A common remedy to identify this bias is to correlate variables that are considered problematic with the response dates of participants. This is however not done in this study as the number of participants is too small to yield any relevant results. It is not possible to determine if this problem is due to the design of the study without conducting further studies. The results must therefore be understood with the high non-response rate of 50 % in mind.

The quantitative design of the study decreases the risk of problems with the study's reliability. Problems might instead be found in the procedure used when informing participants about the study. Four CMC media where used to contact participants; Via forum posts, text chat through MSN messenger, posting a message in the guild message of the day[12] and the WoW in-game chat. Additional CMC media like voice chat and joining the guild text chat were not used. No direct personal contact with the participants individually was in other words conducted. There is therefore a risk that potential participants were uniformed about the study.

3.6 Ethical considerations

The study used a set of ethical guidelines developed by the Swedish research council (Vetenskapsrådet 1990). Participants were informed of this procedure via text in the online survey and on a website they were directed to after submitting their answers. The questions in the survey where formulated to ask for solely positive relations, which were considered to be of a less sensitive nature than negative relations. The results where then anonymized after being analyzed. No requests for parental approval where sent out as all participants where over 16 years of age.

---

[12] A message the guild members receive in their text chat every time they log on to the MMO program.

4. Results

The studied guild was mainly composed of MMO-users with high level characters as all participants had avatars at the highest level of 80. It had a formal leadership structure with a guild leader and a set of officers. The guild also had a website along with a forum and a ventrilo server. It is therefore assumed that the guild is relatively well established in the MMO community.

Although relations between the strengths one and five were collected, only relations of strength one, four and five are analyzed in this essay. The idea is that the concept of cohesion is best investigated at strong relation categories. Relations at strength one will be used to investigate the periphery of weakly connected participants around cohesive groups in the guild.

4.1 Descriptive statistics

The diagrams below show the age and time spent in guild distributions for the guild that was investigated. Of the fifty members that were listed in the survey list 25 respondents participated, which gave the survey a response rate of 50 %. The internal non response-rate among these 25 respondents was 2 %. Relations directed at non-responding participants were excluded from the results, internal non-responses where coded as "1 Neutral, just members of the same guild".
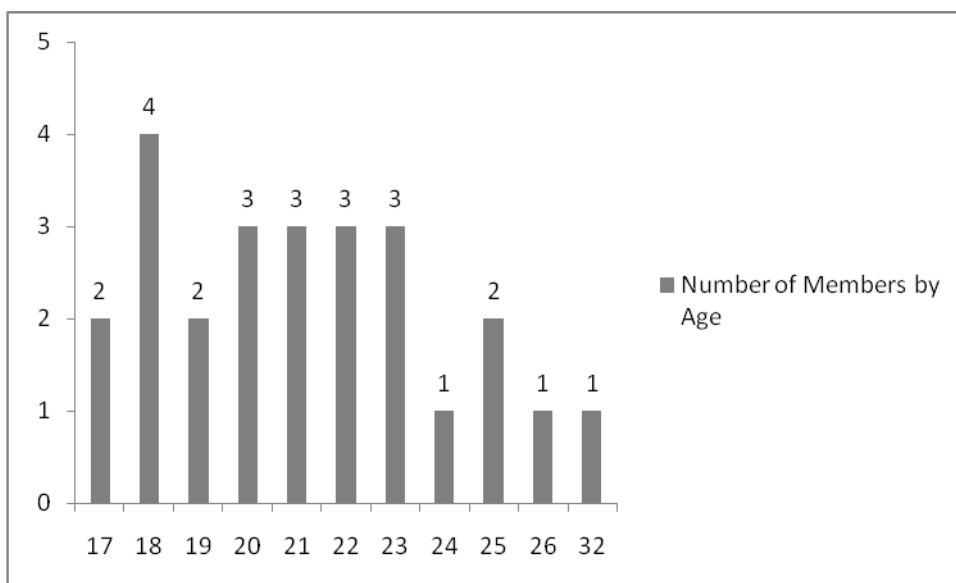
Diagram 5, Number of Members in the Guild by Age (N=25)

The age of participants vary between 17 and 32 years of age. The younger half of participants ages between 17 and 21 years while the older half ages between 22 and 32. It becomes clear that the age distribution is equally distributed with the exception that ages between 17 and 23 are more common than the ages 24 to 32.
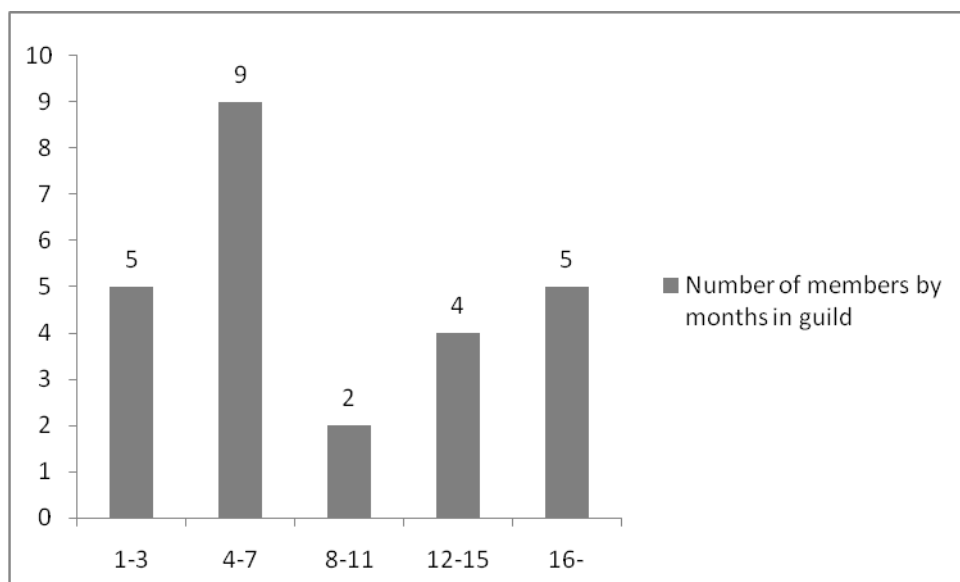
Diagram 6, Number of Members by Months Spent in the Guild (N=25)

The time the members of the guild have spent in the guild varies between the categories one and 16 months or more. That fact that the participants have spent some time in the guild is important because it means that the process where effecence relations develop into safety relations described by Greenberg, Lawler and Kadushin (Greenberg 1991, Lawler 2001, Kadushin 2002) is possible. The most frequent category of time spent in the guild is for example between four and seven months, long enough for participants to interact repeatedly. It should however be noted that the measure used above does not show the actual time the participants spend online, only the amount of time that has passed since they became members of the guild.

4.2 Relation strength

The theories described above assume that relations between people have different strengths. The questions in the survey are designed to capture the perceived strength of the relations according to the subjective experiences of the participants by asking participants for how they view the strength of their relations on a five point positive scale from "1 neutral, just members

of the same guild" to "5 strong friendship". Although the mention of friendship is meant to turn the focus of participants on relations characterized by safety, it should be noted that some participants may value friendship in terms of what efficacy rather than the social support they provide. It is therefore anticipated that the measure will capture the strength of the relations despite individual differences in the definition of friendship.
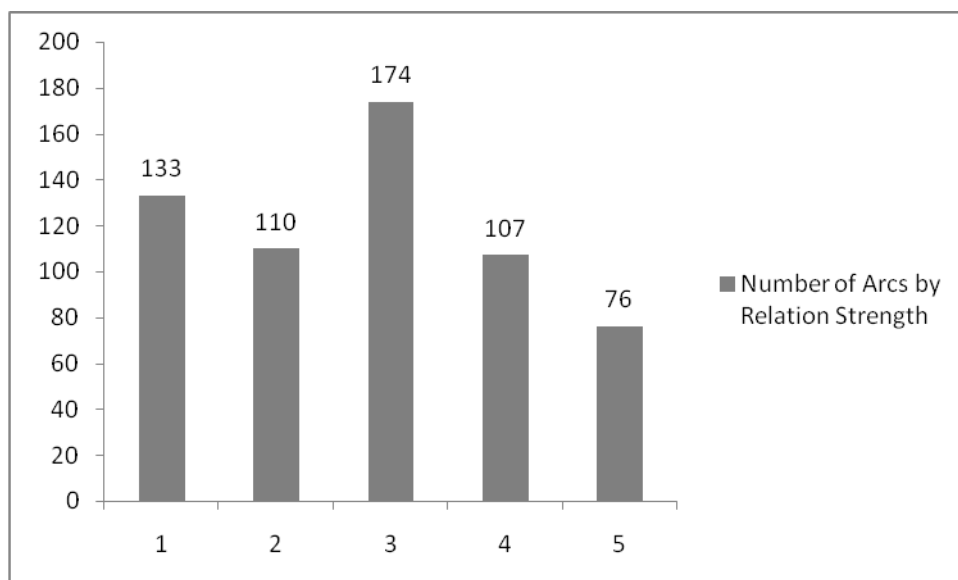
Diagram 7, Number of Arcs by Relation Strength (N= 600)

The diagram above shows the distribution of relations by relation strength. The most common category of relation strength is strength three. Otherwise the tendency is for the frequency of relations to decrease the stronger the relations become. It is notable that while the strongest strength category of "5 strong friendship" is the least common type of relation in the guild, it makes up a large part of the guild's social structure. This is consistent with what has been theorized earlier that CMC communication is a possible means of maintaining strong relations (Walther 2006) and that the formation of these facilitates MMO communities (Siitonen 2007, Kadushin 2002).

The total number of relations is 600, which means that every member of the guild has a relation to each other member in the guild. The reason behind this is that the 11 internal non-responses in the survey where coded as "1 neutral, just members of the same guild"

.

4.3 In degree

Degree is the number of relations a participant is associated with. Note however that when relations are measured using the subjective experiences of the people involved in the relation, they may sometimes have different ideas about for example the strength of the relation. The relations that a person states she has with other people, or out degree, is therefore distinguished from the relations other people say they have with her, also known as the persons in degree. This study will to focus on the in degree that participants have with the purpose of investigating the structural prestige of the participants.
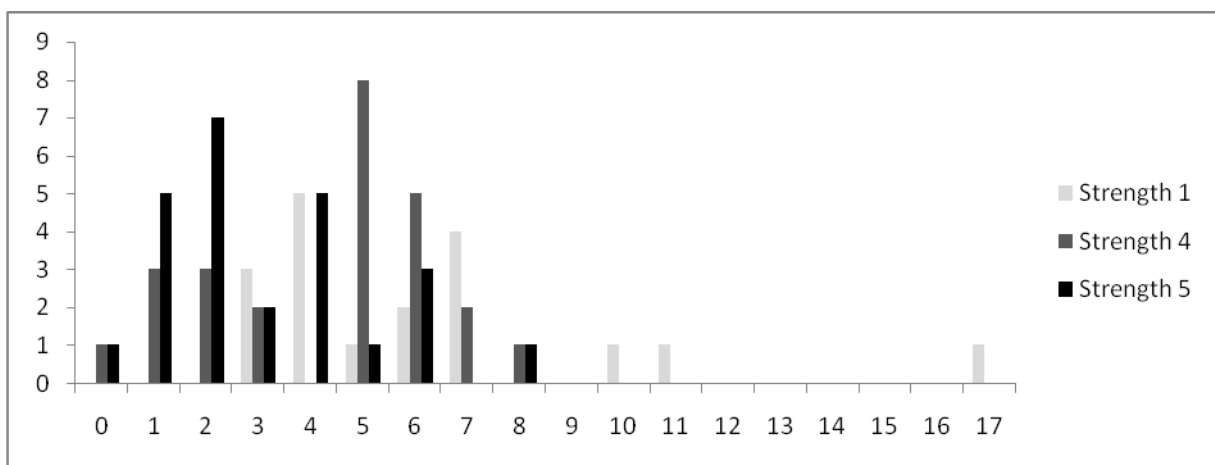
Diagram 8, Number of Members by in Degree Clusters by Strengths 5, 4, and 1

The diagram above shows the distribution of participants in different in degree clusters by the relation strengths one, four and five. If for example a participant has four in degree relations of strength one, she will be located in cluster four for the relations strength category one. She will also show up under the other two categories depending on the in degree she has for their relations strengths.

The stronger relation categories with strengths four and five tend to be located in the lower clusters while the weaker relations strength categories are located in the higher clusters. This not only indicates that weaker relations are more common in the network but also that while the stronger relation categories are relatively equally distributed among the participants, the weaker relation strength categories are unequally distributed. Three of the participants are for example located in clusters ten, eleven and seventeen for relation strength one, which means that 38, or 28 percent of the relations of strength one are associated with three of the participants. This result indicates that the network consists one well connected group based on strong relations with a few outlying guild members in the periphery around

this group. Guilds may be the densely connected groups of interest that in an aggregate form MMO communities (Siitonen 2007). It is also noteworthy that this density is based on strong relations because it indicates that the interaction conducted within the guild is largely based on strong relations characterized by safety, which is necessary for communities to form (Siitonen 2007, Kadushin 2002, Greenberg 1991).

This observation can be further investigated visually using the sociograms below. The data analysis will focus on identifying the core or cores of strongly connected guild members.

4.4 Sociograms

A sociogram is an illustration of relational data. Each individual is represented by a dot, also known as a vertex. A line between two vertices represents a relation between two participants. The vertices can vary in size and color to illustrate characteristics that the participants have. Large numbers are in this study described by large vertices in dark colors. Note that while the sociograms below appear different they contain the same participants. The appearance of the sociograms change because the structure of the social network varies depending on what relation strength is investigated.

4.5 Sociograms by relation strength, time spent in the guild and in degree

The sociograms below illustrate the structure of the networks by different categories of relation strength. The size of the vertices illustrates the number of in degree relations the vertices receive and their color illustrates amount of time the participant has spent in the guild. Large vertices have a large number of in degree relations and dark vertices have a large amount of time in the guild.
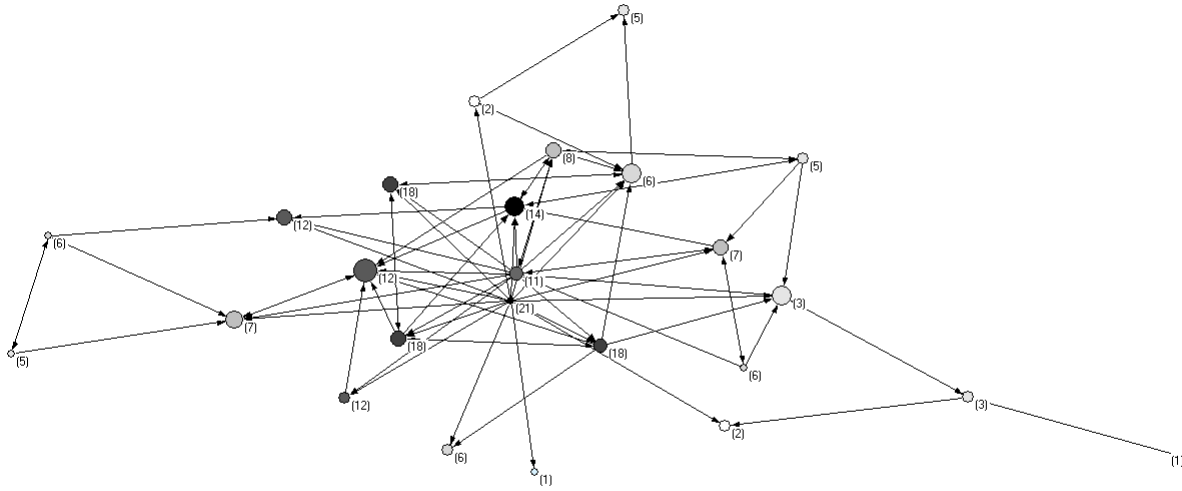
Sociogram 1, Strength 5, Partition Months in Guild (marked in parentheses), Vector In Degree (Arcs N= 76, Vertices N=25)

The sociogram above shows that the strongest relations in the guild are distributed between a central core of participants with a high in degree that have spent a long time in the guild and a periphery of participants that have a low number of in degree relations and a shorter time spent in the guild. This is consistent with the idea proposed above that the guild consists of a core of strongly connected members. It is also noteworthy that these members seem to have spent more time in the guild than the members in the periphery, which is consistent with the idea that relations develop from weak relations characterized by effectence to strong relations characterized by safety over time (Lawler 2001, Kadushin 2002). This idea can be further investigated by analyzing relations at strength four, which is the second strongest relation strength category.
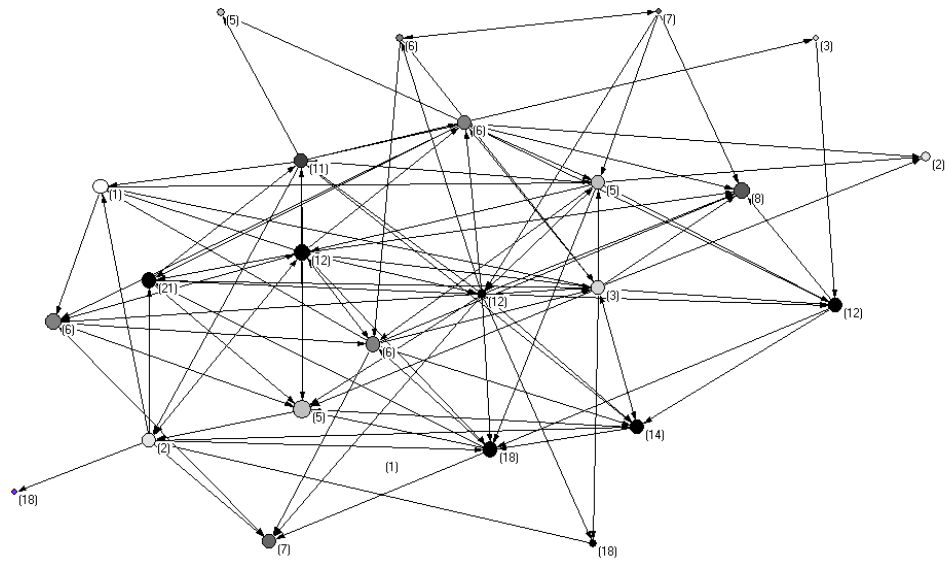
Sociogram 2 Strength 4, Partition Months in Guild (marked in parentheses), Vector In Degree (Arcs N= 107, Vertices N=25)

The sociogram above shows that the relations at strength four are more common than relations at strength five. The tendency for participants with a high in degree number and a long time spent in the guild to be located in the core of a dense network observed for relation strength five persists. The data therefore seem to confirm the theoretical ideas proposed above that guilds consist of a core of strongly connected members.
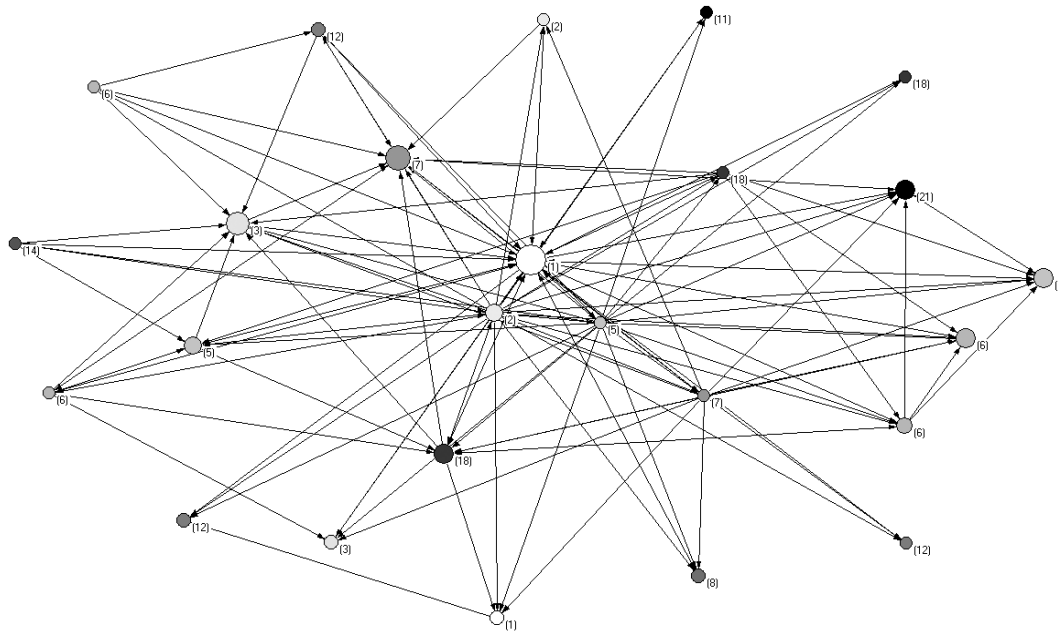
Sociogram 3 Strength 1, Partition Months in Guild (marked in patentees), Vector In Degree (Arcs N= 133, Vertices N=25)

The sociogram above shows that the relations at strength one are more common than relations at strength four and five. No clear core of participants that is connected by neutral relations can be identified. It is clear however that weak relations exist within the guild, which is consistent with the idea proposed here that relations within guilds develop over time from weak effectence relations to strong safety relations (Lawler 2002). With this in mind it is also noteworthy that the participants in the center of the sociogram that receive the most neutral relations also have spent the least amount of time in the guild and that they are few.

# 4.6 Identifying components

The tendency for the networks above to be dense can be investigated further using the concept of network components. Components are groups of connected participants within a network. They are identified using the concept of distance between particpants. Arcs between them are travelled like one way highways to reach different parts of a network. The more arcs a participant is connected to the closer she is to different parts of the network. People meet people ouside their social circle of strong relations, which they use for social support (Greenberg 1991) and include them into that circle over time (Lawler 2001, Kadushin 2002). The aggregate of this interaction forms communities (Giddens 1992, Siitonen 2007). The dense networks with clear cores and peripheries above indicate that a guild is such a social circle. It is anticipated that the discovery of clear components will confirm this notion.

Components are identified by counting the number of relations a participant recieves from participants in different components (Nooy et al. 2005). The sociograms below have used a strong measure of components that requires a participants to receive at least two relations from another member of the component in order for them to be included into the same component.

Sociogram 4 Strength 5, Strong Components (marked in parentheses), Partition Months in Guild, Vector In Degree (Arcs N= 76, Vertices N=25)

The network above is dominated by one major component[13], which is the only component that contains more than two members. The social structure of the guild is therefore not characterized by the formation of different cohesive groups. The guild is instead characterized by one well connected group of participants that have spent a long time in the guild surrounded by participants that have spent less time as members.

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[13] Encircled in the diagram
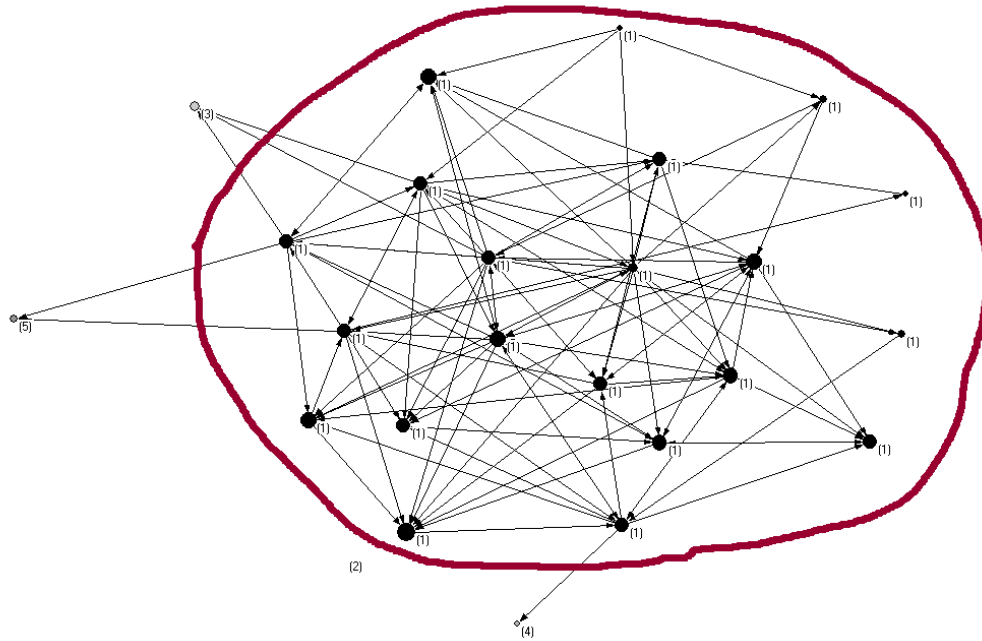
Sociogram 5 Strength 4, Strong Components (marked in parentheses), Partition Months in Guild, Vector In Degree (Arcs N= 107, Vertices N=25)

The sociogram shows that the social network at relation strength four is dominated by one single strong component, implying that the network at relation strength four is dense. Only four of the participants in the guild are excluded from the component, two because they do not receive relations and two because they do not send relations back to the component members. This results is consistent with the results described in the sociogram on relations of strength five described above.
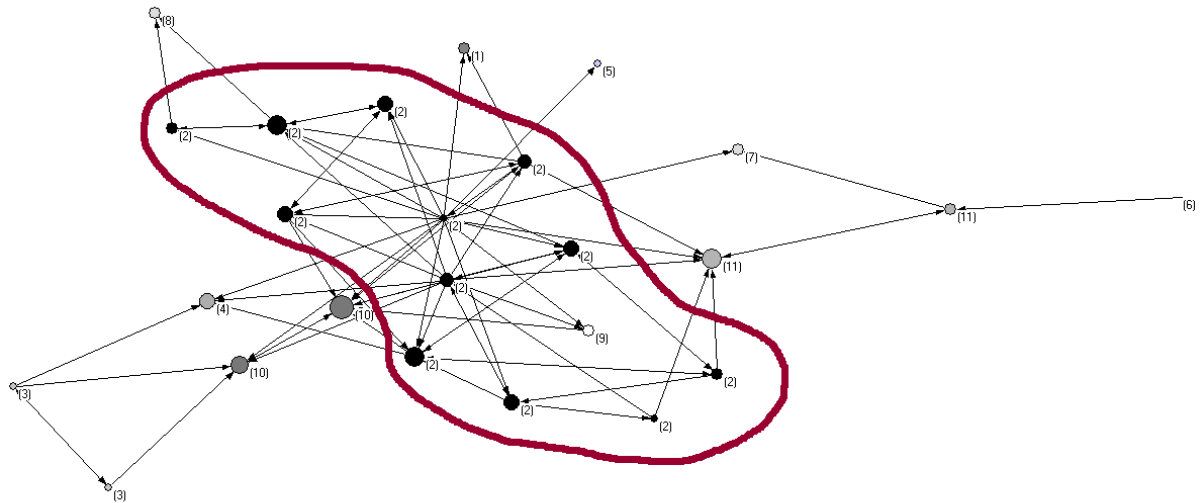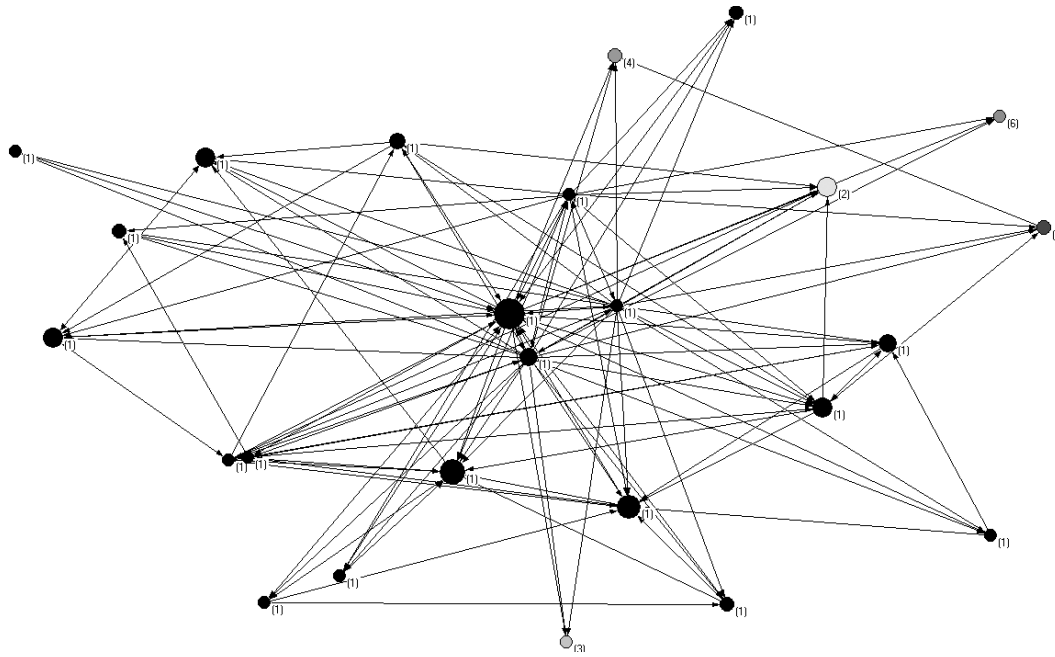
Sociogram 6 Strength 1, Strong Components (marked in parentheses), Vector In Degree (Arcs N= 133, Vertices N=25)

The sociogram above shows that neutral relations, like relations of strength four and five produce one single connected component. This result can also be interpreted as there are no components at relation strength "1 neutral". The relatively equal size of the vertices illustrates that the distribution of relations of strength one is equally distributed. This is consistent with the theories proposed above as they state that people form groups as their relations strengthen over time, not as the form initially (Lawler 2001, Kadushin 2002).

The analysis conducted above concludes that the guild network is densely connected into one single component for all investigated relations strengths. There are however additional methods that can be used to identify cohesive groups within dense social networks.

4.7 Identifying reciprocal relations

The section above investigating the components in the guild network indicates that the network is dense. Dense networks can however be further investigated if the data contains information about the direction of the relations. The idea is that relations that are reciprocal are stronger than relations that are asymmetrical (Nooy et al. 2005). They form the skeletal structure, or core, of social networks. The analysis below is based on the strongest relation categories "5,5", "4,5" and "4,4". The darkest lines represent the strongest category and the lightest line represents the weakest category.
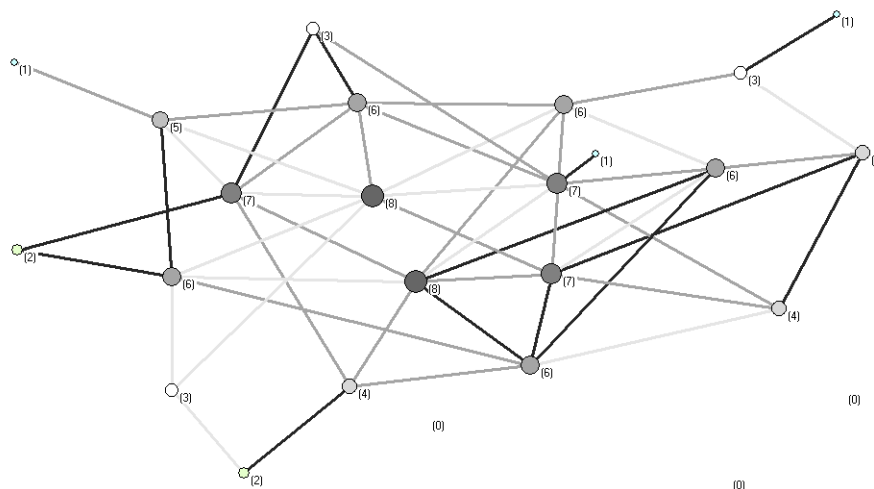
Sociogram 7. Strength 4-5, Strong Bi-directed Relations, Partition Months in Guild, Vector In Degree (marked in parentheses) (Edges N= 51, Vertices N=25)

The sociogram above shows three categories of reciprocal relations. The strongest relations are relations where both participants send relations of strength five to each other. They are represented by the darkest of the lines in the sociogram above. The second strongest strength category is relations where one of the participants sends a relation of strength four and the other of strength five. The weakest category is a relation where both participants send a relation of strength four.

Five groups of strongly connected participants appear in the sociogram above. Two of them are large groups with six members each and three smaller ones composed of two relations each. These groups are in turn brokered by weaker reciprocal relations of the lesser strength categories. This indicates that while the participants densely connected, there are still identifiable cohesive groups within the guild. It is noteworthy that the two larger groups tend to include participants with a longer time in the guild while the smaller groups all contain at least one participant that has been a member of the guild for a short period of time only. The results therefore seem to confirm the theories proposed in this essay that state that the structure of social networks develop over time as social circles include new members that originally formed as relations based on effecence that developed into relations based on safety over time. The guild could therefore be part of the aggregated social structure that forms MMO communities.

4.8 Gender

The question of gender was originally taken up as an aspect to be studied in this essay. The idea was to compare the structural position of women and men in the guilds social network. This aspect was however excluded from the study as only one participants turned out to be female, rendering a comparison difficult to achieve.

5. Discussion

The existence of cohesion in the networks above acknowledges the theories proposed by Anthony Giddens that modern communities are changing due to the separation of time and space and that the role of communities is growing in moderns societies. A person's identity in an MMO community is more a matter of choice rather than something that is given to her due to the circumstances she lives in (Giddens 1991). It must however be noted that while the cohesion within MMO guilds indicates that MMO communities are possible, further evidence of brokerage between guilds is necessary to establish that guilds are in fact part of a larger community. It must be established that guilds are more than isolated groups of people with a common interest in MMO programs (Siitonen 2007). How and where are these tightly knit groups brokered in the MMO community? This essay proposes that further research is necessary on this subject while emphasizing that CMC spans over a wide number of programs that use the Internet to connect MMO users. The role of guild and MMO forums are a natural place to start as they are sites where people from many different guilds interact. Another setting for further study is the migration of players between guilds. A more extensive study including some of the settings for CMC mentioned above could shed further light on the characteristics of MMO communities.

6. Conclusion

The research question postulated in this essay focused on the characteristics of the relations within MMO communities with respect to the strength of the relations between MMO users by asking the question; What are the characteristics of the social structure of MMO guilds in terms of the strength of relations between MMO users? The results above show that the social structure of guilds is characterized by a densely connected network with numerous strong

relations that form a guild core surrounded by new members that have spent less time in the guild compared to the strongly connected players. Further investigation of the studied guild found that the reciprocity of the relations revealed two major components that where brokered by strong, but less reciprocal relations. These findings seem to acknowledge that strong relations form over time through repeated interaction (Lawler 2001).

There are in other words both strong and weak relations in MMO guilds that could form the cohesive backbone of MMO communities. This cohesion differs from the cohesion found in traditional communities in that it is mediated mainly through computers, which raises a number of questions concerning the limits with respect to space and time of a community. It is also consistent with the theories concerning the growing separation of time and space proposed by Giddens (Giddens 1991). The guild that has been investigated here has for example members in a number of different countries in eight different time zones. CMC may be separated from space and time, but the people using it are not, which previous research has identified as a main source of the problems associated with MMO use (Linderoth 2007). It can be concluded that the discussion about the possibility of strong relations in CMC interaction may be an outdated issue. The findings in Siitonen's dissertation that point to the fact that social relations form through CMC interaction (Siitonen 2006) within MMOs has been confirmed using quantitative data. The question on what future role MMO communities should play must be based in the assumption that they are social phenomena that are integrated into the social networks of people.

References

Bartle R. (1996). Hearts, Diamonds, Clubs and Spades: Players Who Suit MODs MUSE Ltd, Colchester, Essex, http://www.mud.co.uk/richard/hcds.htm

Bekhtina V. J. (2002). Psychological research of MUD gamers. Unpublished diploma thesis, Psychology Department, Moscow State University

Carrington S. (2005). Wasserman Models and methods in social network analysis / edited by Carrington P. J., Wasserman J. S., Cambridge University Press

Cole H. & Griffiths M. D. (2007) Social Interactions in Massively Multiplayer Online Role-Playing Gamers, Journal of Cyberpsychology and Behavior 10 (4).

Giddens A. (1991). Self and Society in the Late Modern Age, Polity Press

Greenberg J. (1991). Oedipus and Beyond, A Clinical Theory, Harvard University Press, London, England

John O. P. & Srivastava S. (1999). The Big Five Taxonomy: History, Measurement, and Theoretical Perspectives in Handbook of Personality: Theory and Research Lawrence A. Pervin, Oliver P. John (Ed) The Guildford Press, New York

Kadushin C. (2002). The motivational foundation of social networks Journal of Social Networks Volume 24 p.77-91

Kayahara J., Wellman B. (2007). Searching for Culture—High and Low Journal of Computer-Mediated Communication 12 824–845

Koivisto E. M. I. (2003). Supporting Communities in Massively Multiplayer Online Role-Playing Games by Game Design, http://www.digra.org/dl/db/05150.48442

Lawler E. T. (2001). An Affect Theory of Social Exchange The American Journal of Sociology, Vol. 107 (2) p. 321-352

Linderoth J. & Bennerstedt U. (2007). Att leva I World of Warcraft, tio ungdomars tankar och erfarenheter. Medierådet

Lindhof T. R. & Taylor B. C. (2002). Qualitative Communication Research Methods. Thousands Oaks: Sage

Marsden P.V. (2005). Recent Developments in Network Measurement in Models and methods in social network analysis Peter J. Carrington, John Scott, Stanley Wasserman**. (ed) Cambridge University Press

Morris M. (2004). Overview of Network Survey Designs. In Network epidemiology: a handbook for survey design and data collection Ed. Martina Morris Oxford University Press

Nooy W. D. & Mrvar A. & Batagelj V. (2005). Exploratory Social Network Analysis with Pajek. Cambridge University Press

Siitonen M. (2007). Social Interaction in Online Multiplayer Communitie, University of Jyväskuklä, http://dissertations.jyu.fi/studhum/9789513929312.pdf

Vetenskapsrådet (1990). Forskningsetiska principer inom humanistisk-samhällsvetenskaplig forskning, http://www.vr.se/download/18.668745410b37070528800029/HS%5B1%5D.pdf

Watts D.(2003). Six Degrees: The Science of a Connected Age W. W. Norton & Company

Williams D., Ducheneau N., Zhang L. X. Y., Yee N., Nickell E. (2006). From Tree House to Barracks The Social Life of Guilds in World of Warcraft, Games and Culture Volume 1 (4) p. 338-361

Walther J. (2006). Nonverbal Dynamics in Computer-Mediated Communication, or ☹ and the Net ☹'s With You, ☺ and You ☺ Alone. In Manusov V. and Patterson M. (eds.) The SAGE Handbook of Nonverbal Communication. Thousand Oaks: Sage.

Williams, Ducheneaut, Zhang, Yee, Nickell (2006). The Life and Death of Online Gaming Communities: A Look at Guilds in World of Warcraft, Palo Alto Research Center

Yee N. & Moore R. J. (2004). The social side of gaming: a study of interaction patterns in a massively multiplayer online games Palo Alto Research Center

Yee N. (2007). Motivations of Play in Online Games. Journal of CyberPsychology and Behavior Volume 9 p. 772-775, http://www.nickyee.com/pubs/Yee%20-20Motivations%20.pdf

Appendix 1 Storyboard, the Birth of an Age of Conan Guild

2007-05-29
x varnar för eventu-
ellt uppskjut i framtiden

2007-10-13
x startar
diskussion om
fördelningen av
prestigeklasser

2007-06-15
x startar poll
om vilken slags
server guilden ska
spela på

2007-01-14
x startar dis-
kussion om ledar-
skap

2007-05-10
x startar diskussion
om vitram runt avatar

2007-08-16
x startar diskus-
sion om vad Scylf-
ings är för något

2007-10-20
x beslutar om att
stänga ner forum för
icke-medlemmar i fram-
tiden

2007-01-11
40,000 hits på
domänen

2007-01-26
4 nya medl
x info om up-
pskjut i release.
Uppmanar med-
lemmar att skicka
in bilder

2007-05-20
x startar tråd
om mogenhet i fo-
rumen

2007-08-15
x startar dis-
kussion om anta-
ket medlemmar i
guilden

2007-04-12
Info ändring i
AoC, x an-
nonserar 16 års
gräns, efterlyser
förslag på namn
på guildstaden

2007-05-31
x startar om-
röstning om vad
guildstaden ska
heta

2007-06-24
x startar
diskussion om
officerstaktik

2007-09-01
Mål utlyses att
varje mdelem ska
få uppleva minst en
siege battle, medl
som ej rapporterar
efter 7 dagar
kickas, nya medl
uppmanas söka
lediga platser (ej
upptagna), utlys-
ning av 5 nya offi-
cersplatser,
uppmaning att ej
adda på msn

2006-12-21
x lägger upp
guildvideo på
youtube

2007-01-18
x efterlyser
åsikter om in-
fodelen

2007-06-19
utlysning av
officerstjänster efter
olika krav, 16 års
gräns, osanna upp-
gifter leder till kick
ansökan via msn

2007-07-15
Utlysning av
positioner

2006-09-12
x lägger upp
första nyheten på
hemsidan,
bildar guilden

2006-10-08
4 nya medl,
forumet uppe

2006-12-08
4 nya medl (tot 8)
Beslut tas om att inte
ha medlemsinloggning

2007-01-11
x har skrivit ett
kapitel om spelet i
infodelen

2007-03-28
över 50 medl
uppmaning att
registrera på
forumet

2007-05-09
Guildbakgrundsbild
upplagd, Rekord i
hemsidebesök

2007-08-11
Info om
ytterligare AoC
uppskjut

2006-09-13
x uppmanar kon-
takt via mejl eller msn

2006-12-28
3 nya medl (tot 11)
Beslut tas om mer
funktionell hemsida
och mer info om
spelet

2007-01-25
6 nya medl
info om AoC
videos

2007-03-08
x startar dis-
kussion om
ändrat guildnamn

2007-04-03
x uppmanar att
man registrerar sig
på betan

2007-05-17
The x
alliance bildas,
x efterlyser
ngn som kan sköta
ett skandinaviskt
forum

2007-06-29
Info om rådet i
x som ska
besluta om offi-
cersplatser,
uppmaning att
mejla ansökningar

2007-08-24
x skapar en IRC kanal

2007-01-12
Info om ändringar i
spelet annonseras

2007-08-20
x föreslår en RSS-
feed och en kollektiv
ansökan till betan

2007-09-11
x föreslår en
medlemsinloggad fo-
rumdel för taktikdiskus-
sioner

2007-05-15
x lägger
upp en ventrilo-
kanal, diskussion
om x ska an-
vända vent eller
TS

2007-06-09
x bråkar
om hemsidan

2007-07-18
x startar msn
utbyte tråd

2007-01-18
x tillverkar ava-
tarer till forumen

2006-12-26
x startar dis-
kussion om teck-
ensnittet på
loggan

2007-07-08
x startar
diskussion om
officersgrupper

2007-09-30
x startar poll
om datakapac-
itet att delta i
betan

2007-01-17
x startar
diskusison om
att göra reklam
på Fun Coms
forum

2007-09-06
x startar yt-
terligare tråd om
pvp vs pvp i
border kingdoms
och om guilden
ska vara god/ond

400

200

400

109
100

75

50

17

11

8

4

34

Appendix 2 Survey- Social Networks in WoW

- Einar Stensson, University of Stockholm

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MSN: einar_stensson@hotmail.com

This survey is about what type of relations people who play MMOs together have with each other. The results will be anonymized, which means that your anonymity as participant in this study is guaranteed. For more information on the ethical guidelines used in this survey, visit the links below. More information on social network analysis and this study is avaliable on the project website. The survey is estimated to take between 15-20 minutes to complete.

Don't hesitate to contact me with any questions you might have using the contact info above.

Links

- Guidlines for ethical research, The Swedish Research Council,

http://www.vr.se/download/18.6b2f98a910b3e260ae28000469/Good+Research+Practice+20+april.pdf

- Social Networks in Virtual Worlds, http://www.virtuellsociologi.se/Eng

Background questions

- First I would like to ask a few background questions:

1. Main character name

2. Other characters

3. How long have you been a member of Nightshift?

4. Rank in the guild

5. Age

6. The country you live in

7. Irl gender

Strength of relations

- The questions below are a measure of the strength of the relations between you and the other members of the guild. 1 indicates a neutral or no relation at all, 5 indicates strong friendship. Leave the field open if the character is one of your alts.

Member 1	neutral 1 2 3 4 5 strong friendship
Member 2	neutral 1 2 3 4 5 strong friendship
Member 3	neutral 1 2 3 4 5 strong friendship
… Member 50	neutral 1 2 3 4 5 strong friendship

Ranking the relations[14]

- The questions below are about what type of relations you have with other people in the guild. Answer the questions below by ranking the people in order with the highest rank to the left and the lowest to the right.

Rank the top three people...

...you talk to using guild and/or general chat in-game

... you talk to using whispers or group chat in-game

...you talk to using voice chat (e.g ventrilo)

...you talk to using non-computer based communication media (e.g telephone, meet in person)

...you frequently do/would help achieve different goals in the game with (e.g quests and boosting).

...you play with in battlegrounds and arenas with.

...you give advice on personal issues about other things than WoW.

...you discuss other topics than World of Warcraft with.

... you would lend gold if he/she asked for it.

...you gank other players with (e.g hunt other players and/or save from corpse camp etc.).

...you discuss WoW-related topics with.

List: members of Nightshift

Member 1

Member 2

Member 3

… Member 50

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[14] The name generating ranking questions where not used in this study due to time and resource limitations.

Additional comments
- Thank you for your participation! If there is anything additional you would like to comment or ask about, dont hesitate to write it in the box below.

Other/Comments
- If you want a copy of the thesis sent to you when it is finished, enter your E-mail below:

E-Mail

Gold (max 50g)

Nah, donate it to MMO research

Appendix 3 Introduction Letter

Hello!

I am a student at the University of Stockholm where I am studying Sociology.

I am contacting you because I am writing my bachelors thesis about how people form social networks online. The thesis is all about how MMO games like World of Warcraft are social, which means that people that play online get to know each other through the game. When people socialize, they form so called social networks. Social networks are "maps" over relationships between people that connects everyone with each other. The idea is that this connection is the key to how new ideas, trends, cultures etc. spread.

It would be really nice to interview you guys about how you know eachother using a so called network analysis!

If you are interested, each participant will be offered 50 gold as thanks for your time (depending on how many want to take part). The interview will be conducted online (either through vent or through an online survey) and will take about 15-20 minutes to complete.

Contact me by mail or by posting here if you think it seems interesting, don't hesitate to ask questions!

My project has a website with more info: http://www.virtuellsociologi.se, there are some examples of network maps in the results section of the page.

/Einar Stensson

einarstensson@hotmail.com

Appendix 4 Sociogram Strength 3, Partition Months in Guild, Vector In Degree
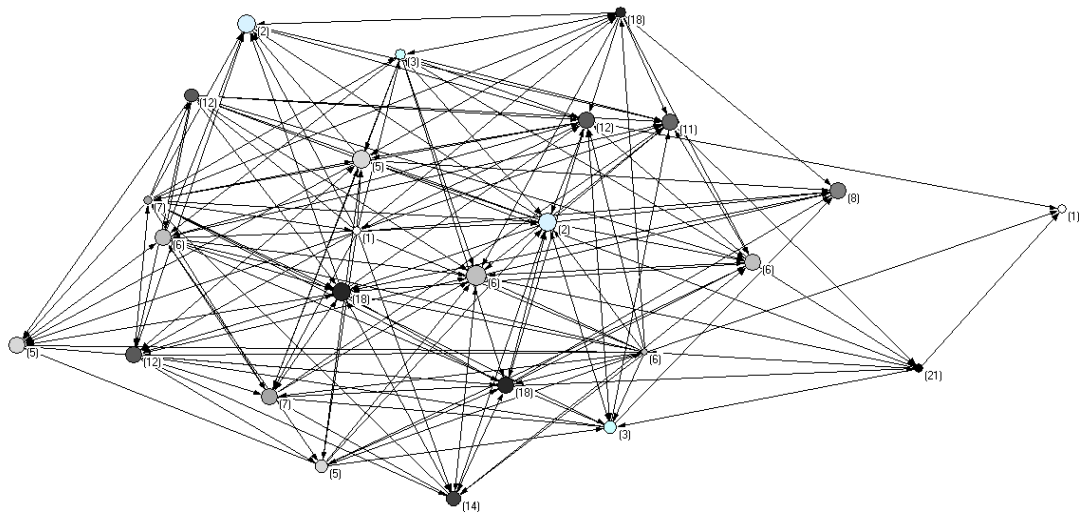
Appendix 5 Sociogram Strength 2, Partition Months in Guild, Vector In Degree