

Association for Information Systems AIS Electronic Library (AISeL)

MG 2009 Proceedings

Mardi Gras Conference

February 2009

Where's the Leader? Identifying Leadership Candidates Within Virtual Worlds

Samuel Goh

Florida State University College of business, shg06c@fsu.edu

Molly Wasko

Florida State University College of business, mwasko@cob.fsu.edu

Follow this and additional works at: <http://aisel.aisnet.org/mg2009>

Recommended Citation

Goh, Samuel and Wasko, Molly, "Where's the Leader? Identifying Leadership Candidates Within Virtual Worlds" (2009). *MG 2009 Proceedings*. 9.

<http://aisel.aisnet.org/mg2009/9>

This material is brought to you by the Mardi Gras Conference at AIS Electronic Library (AISeL). It has been accepted for inclusion in MG 2009 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Where's the Leader? Identifying Leadership Candidates Within Virtual Worlds

Samuel H. Goh

Florida State University
College of Business
Tallahassee, Florida
shg06c@fsu.edu

Molly M. Wasko

Florida State University
College of Business
Tallahassee, Florida
mwasko@cob.fsu.edu

ABSTRACT

Player-founded organizations, or guilds, within massively multiplayer online games (MMOGs) are complex social entities with organizational forms that mirror real-world. These guilds require leaders who possess or can quickly develop a diverse array of skills. Examples of the skills required read like the introductory course of a business management degree – mediating conflict, planning, controlling, motivating. These skills are important - just as with real-world companies, failures on the part of leaders may explain the high degree of guild failures within virtual worlds. Interest into the transferability of leadership skills built in virtual worlds to real world situations has attracted both academic and practitioner interest. IBM, for example, has begun identifying IBM employees who lead in virtual worlds and exploring leadership characteristics and their applicability to management practice.

While these initial efforts have been informative, the unit of analysis has invariably been a singular leader, or the guild leader. Within popular MMOGs (i.e., World of Warcraft or Everquest), the game mechanics allow the promotion of regular guild members to officer status. This begs the question, how may potential officers be identified? Drawing from the emergent leadership literature, we discuss a study-in-progress which attempts to identify potential leaders based upon a social network analysis (i.e., centrality measures) on a multi-year database which represents one guild's activities within a MMOG. We propose that members who participate and contribute more to guild activities make more likely officer candidates.

Keywords

Emergent leadership, Guilds, Guild Leaders, MMOG, Everquest, Social Network Analysis, DKP.

INTRODUCTION

While there has been significant interest in virtual worlds from an academic standpoint, questions remain on what practical organizational benefits or lessons may be attained from studying virtual worlds (Shultze, Hiltz, Nardi, Rennecker and Stucky, 2008). We propose that one potential research stream is to conduct inquiries into leadership phenomena within massively-online multiplayer games (MMOGs). While we concede that there are certainly reasons to question why MMOGs, seen as a computer game to many people, represent a suitable organizational study context, we suggest that there is growing recognition that these virtual worlds may be relevant to issues of strategic importance.

Recent scholars have suggested that the lines between work and play may not be simply black and white (Yee, 2006b). Yee (2006b) further argues that MMOGs may be construed as work platforms, with increasing similarity between the activities performed in MMOGs and real work within business corporations. Within MMOGs, much of the work is coordinated by player-founded organizations or guilds which are complex social entities (Williams, Ducheneaut, Xiong, Zhang, Yee and Nickell, 2006). These guilds require leaders who possess or can quickly develop a diverse array of skills. These skills are important - just as with real-world companies, failures on the part of leaders may explain the high fragility of guilds (Ducheneaut, Yee, Nickell and Moore, 2007).

Interest into the transferability of leadership skills built in virtual worlds to real world situations has attracted both academic and practitioner interest (e.g., Ives and Junglas, 2008; Yee, 2006c; Yee, 2006d). IBM, for example, has begun identifying IBM employees who lead guilds in virtual worlds and exploring demonstrated leadership characteristics and their applicability to management practice (IBM, 2006; Reeves, Malone, Yee, Cheng, Abecassis, Cadwell, Abbey, Scarborough and Read, 2007). While these initial efforts have been informative, the unit of analysis has invariably been a singular leader, or the guild leader. Within popular MMOGs (i.e., World of Warcraft or Everquest), the game mechanics allow the promotion of regular guild members to officer status. Yee (2006c) suggests that a key guild leader skill is the ability to delegate

responsibility and that these officers are essential to the proper functioning of guilds, especially as span of control issues escalate with larger guild sizes.

As MMOGs allow for multiple leaders, this line of research begs the question, how might potential leaders be identified? Drawing from the emergent leadership literature, we discuss a study-in-progress which attempts to identify potential leaders based on a multi-year database which represents one guild's activities within a MMOG. Using a variety of statistical methods, we identify several traits which we argue distinguish leaders from followers.

LITERATURE REVIEW

MMOGs, Guilds, and Guild Leaders

The number of MMOG participants has grown rapidly in the last few years. For example, Blizzard Entertainment's World of Warcraft (WoW) has been particularly popular with subscriber numbers nearly doubling from 6 million in 2006 to 11.5 million today (Blizzard, 2008; Ducheneaut, Yee, Nickell and Moore, 2006). The recent release of a new expansion pack for WoW also set the one day sales record for a computer game (Blizzard, 2008). Naturally, researchers have taken notice and there is small but growing body of literature that serves as a great primer for understanding the history, demographics, and mechanics of virtual worlds (e.g., Castronova, 2005; Yee, 2006a, e). Research into what actually goes on in these MMOGs has motivated studies using a rich variety of approaches including surveys, qualitative analyses of interviews of MMOG participants, and in-depth ethnographies (Nardi and Harris, 2006; Williams, Yee and Caplan, 2008; Yee, 2006a).

One consistent theme that has emerged from research into MMOGs thus far has been the need for collaboration in order to achieve success (e.g., Dannecker, Richter, Lechner, Dressner, Fabisch and Ilsemann, 2008; Nardi and Harris, 2006). Past research has suggested that success in MMOGs is contingent upon very similar factors to success for real-life organizations. Many of the factors identified are within the scope of control of the leadership of a guild, such as conflict resolution, discipline, motivation, coordination, nurturing and emotional support, delegation, training, retention, recruitment, scheduling, and politicking (Castronova, 2005; Ducheneaut et al., 2006, 2007; IBM, 2006; Reeves et al., 2007; Steinkuelher, 2004; Williams et al., 2006; Yee, 2006c).

Emergent Leadership and Virtual Teams

Yoo and Alavi (2004) present a compelling argument for the importance of understanding leadership and virtual teams. While they suggest that leadership has been a frequently studied topic in management and social psychology literature, they point out that past studies are frequently conducted in traditional organizational forms with mostly face-to-face communications. These studies neglect the new realities facing organizations, such as the move to non-located organizational forms and the subsequent the need to virtually communicate with far-flung members via computer-mediated communications (CMC) methods. As communications efficacy is essential to effective leadership, Yoo and Alavi (2004) further argue that these new realities require focused studies of leadership within virtual environments.

Guilds within MMOGs while larger than the typical virtual team studied, share several common attributes. For example, virtual teams are geographically dispersed and members interact primarily through electronic media (Desanctis and Monge, 1999; Jarvenpaa and Leidner, 1999; Powell, Piccoli and Ives, 2004; Yoo and Alavi, 2004). In addition, Yoo and Alavi (2004) suggest that virtual teams in real organizations often are comprised of domain-specific subject matter experts from a range of sources including different departments (e.g., Maznevski and Chudoba, 2000). MMOGs are by definition an electronic media and there is evidence to support similarity to virtual teams; utilizing geographically dispersed participants with heterogeneous motivations (Yee, 2006a) and skill sets (Ducheneaut et al., 2007).

Moreover, the virtual team literature offers an interesting way to frame how leaders may be identified by guilds in MMOGs. Yoo and Alavi (2004) suggest that due to the aforementioned attributes, leadership may be viewed as an emergent phenomenon. As opposed to designated leadership whereby leadership status may be determined by one's organizational position or designated authority, "leaders emerge and earn their status through incremental influences and contributions to the team (Hollander, 1960, 1961)" (Yoo and Alavi, 2004). This emergent perspective suggests begs the following questions. **What are the differences between designated leaders and regular members? In particular, do leaders participate more than other regular guild members? What attributes make good predictors of leaders? Finally, as all formal or designated leaders in MMOGs are emergent leaders based upon participation in guild activities, what are the differences between designated and potential emerging leaders?**

RESEARCH METHODOLOGY

Virtual World Context

The organization of study is a guild in the popular MMOG Everquest (www.everquest.com). Everquest, released in March 1999, is a subscription-based MMOG offered by Sony Online Entertainment (SOE). SOE maintains a server farm which hosts the MMOG with individual servers representing unique virtual worlds (26 worlds are currently available; Sony, 2008). Subscribers participate by installing the gaming client software on their computers and connect to game servers via the Internet. Certainly, a popular alternative research context includes WoW which has already been the subject of study for topics related to this study such as inquiries regarding groups, guilds, and in-game collaboration (e.g., Dannecker et al., 2008; Ducheneaut et al., 2007; Nardi and Harris, 2006).

One major reason suggested for WoW's commercial success as compared with Everquest is an improved "flow" experience in which WoW's game mechanics alleviate some of the tedium and difficulties associated with earlier MMOGs (Ducheneaut et al., 2006). Yet, while Ducheneaut et al. (2006) suggest that "WoW's mechanics being almost entirely identical to predecessors like Everquest", there are two key differences between these two MMOGs' designs and emphasis which make Everquest a reasonable alternative research platform for studying leadership. First, the emphasis on making WoW more accessible to a wider player base meant making in-game content easier and game mechanics more forgiving. Everquest, on the other hand, is generally regarded by on-line gamers as being more difficult with highly challenging end-game content and tight interdependencies between participant roles, which necessitates extensive cooperation among participants.

Second, while the original release of WoW offered high end content tailored for raid sizes up to 40 participants, later expansions downgraded that number and current raid content is tailored for 10 to 25 concurrent participants. While Everquest has also reduced the number of simultaneous participants allowed several times, high end content in Everquest is currently targeted and tuned for raid sizes of 54 participants. Naturally, larger numbers of individual participants present a non-linear increase in leadership duties and requirements (Steinkuelher, 2004). Therefore, we propose the higher level of difficulty, tight interdependency between participants and larger raid sizes make Everquest a fascinating context for studying leadership-in-action within guilds.

Organizational Context

The guild in this study, Dark Horizon, was formed in 2000 on the Zebuxoruk server by approximately 150 original members. The guild's primary mission is to tackle end-game raid-oriented activities. The reasons underlying the formation of Dark Horizon were to address the excessive coordination requirements to undertake raiding activities over a long period of time and provide a stable social backdrop which a guild provides (Ducheneaut et al., 2007). From inception to present day, over 500 participants have been involved in guild activities. Dark Horizon enjoys a positive reputation and is recognized as the leading guild on its server, with cross-server recognition from numerous raiding accomplishments and guild longevity.

At any point in time, participants in raid activities may be broken down into three groups: leaders, full members, and invites. Leaders are comprised of a guild leader along with guild officers. The current guild leadership is notable for its egalitarian approach, only deferring to seniority in the leadership during extreme situations. Officers are promoted from full members following a vote by active leaders. Some reasons for promotions include vacancies due to attrition, guild growth, and when a perceived need arises. Full members are regular members with specific rights and responsibilities and form the majority of the guild. Invites are potential candidates for membership with limited rights and responsibilities. These candidates are subject to an "invite period", in which their performance is carefully monitored and their personalities judged for fit with current guild members and guild goals. Invites are subjected to a guild vote for promotion and failing this vote means being "booted" (having raid privileges revoked), an act that carries a certain degree of social stigma. This period can be extremely stressful and protracted, for example invites in Dark Horizon may only go up for a vote after a minimum of 6 weeks; in one extreme case an invite waited 7 months for a vote. Overall, Dark Horizon's membership demographics and membership processes are relatively similar to other MMOG guilds (e.g., Ducheneaut et al., 2007).

Dark Horizon's leadership consists of one guild leader along with a number of guild officers who help split the leadership duties. Leadership duties, just as in real-life, vary significantly. Yee (2006c) interviewed guild leaders in MMOGs and identified leadership roles such as mediating conflict, maintaining order, listening and being a good confidant, and learning how to delegate. In Dark Horizon, other leadership duties also include communications on raids, strategy formulation, recruitment of new members, and support activities (moderating chat, posting banners, managing message board). Decomposing leadership duties into smaller delegated manageable portions may serve as valuable stress relief, as Yee (2006c) suggested that burnout and an obligation to "play" were issues for guild leaders who tried to do it all.

DKP Database

As with other MMOGs, the purpose of end-game raiding is to beat events designed by the game developers. One of the biggest motivators to continually engage in such activities is the “carrot” - the rare and powerful items and resources (commonly called “loot” by players) which comes from beating a raid. However, given that the ratio of the number of players to the number of items or resources derived from each raid is extremely high, the fair allocation of loot is a subject of great debate. Ducheneaut et al. (2007) suggested that internal politicking over access to loot has contributed to the failure and breakup of many guilds.

Many loot allocation systems exist for guilds in MMOGs. Initially, loot allocation systems were “sized-up” solutions that were derived from the social norms that existed at the smaller group level. At the group level in Everquest (2-6 participants and groups may be formed ad-hoc) several mechanisms have developed over time. Some examples including “randoming”, in which an in-game dice is rolled to decide a winner, and “need before greed”, in which group members compare their current items to determine who could use an item most. Other more outlandish examples include “alpha rotation”, in which loot order is decided by the alphabetical order of avatar names, and outright anarchy, in which the first to loot an item gets to keep it.

For obvious reasons, guilds found that most of these loot allocation methods did not translate well to encouraging long term collaboration on a much larger scale. Some guilds moved to more democratic means of loot allocation by forming “loot councils”, in which the members of a loot council vote on who receives an item. Unfortunately, as agency theory (Eisenhardt, 1989) would suggest, members of the same organization may have divergent goals, sometimes to the detriment of the organization as a whole. Thus, perceived injustices, personal biases, and favoritism are common player complaints when a human element remains in the loot allocation process.

The dragon kill point (DKP) system was implemented by Dark Horizon in the hopes of providing an objective method for assessing the allocation of loot. The underlying reasoning for the use of a DKP system is that loot should be allocated to individuals who contribute most to the guild. Therefore, there is both an attendance and performance dimension to the DKP system. Participants only earn DKP by showing up for and actively contributing to guild activities. DKP values are decided by the leadership and are awarded for hourly attendance and the successful completion of raids. More difficult raids and raids which are deemed essential to guild progression are awarded higher DKP values. A leader is responsible for logging attendance within the game and the log files are parsed and uploaded to an out of game database accessible to all current members via a web browser.

In addition, leadership is responsible for putting price tags on loot, with rare and powerful items costing more DKP points. Members may then use the DKP points they have accumulated like a virtual currency in a competitive bidding or auction-like system whenever loot they desire is obtained by the guild. Another important philosophical foundation in Dark Horizon’s DKP system is that everyone earns the same amount of DKP for each event. This emphasis on equality was necessary in order to achieve buy-in for the original DKP system proposal by the general guild membership.

The DKP system has evolved over time to be used for other guild functions outside of loot. For example, guild sanctions for inappropriate behavior may include a costly DKP fine. Also, in order to minimize free riding, the DKP database generates a PDKP (percentage dragon kill point) statistic every day which represents the rolling percentage of points earned by each member over a 90 day period. Individuals who fall below active status, defined as less than 60% PDKP, are ineligible to bid on loot and are subject to guild removal. Individuals who are inactive over 90 days are subject to a “DKP wipe” in which their accumulated DKP are removed, a most serious consequence. The DKP system also serves as an important motivational device with guild members challenging each other to earn more points.

For the purposes of this study, the DKP database offers a great deal of potential for studying the activities of guilds in MMOGs. To our knowledge, accessing and analyzing a longitudinal dataset of this nature has not been attempted. As the DKP database serves as a guild historian of sorts, with participant data recorded for each official guild activity, we are hopeful that an analysis of the DKP database will reveal insights into the research questions at hand.

Data Analysis

Our initial analyses utilized a subset of the DKP database representing one Everquest expansion. An expansion is the packaged release of new game content (i.e. new raids and items) and usually offers new ways in which to strengthen and improve one’s avatar along with new game mechanics. Participants in MMOGs generally view expansions as a fresh start, with older members returning to participate, and new challenges for the guild to overcome. As such, an expansion represents a logical way to partition the data available from the DKP database into a meaningful period of time for analysis.

The data analyzed the expansion “Secrets of Faydevr” (SoF) representing roughly an 11 month time frame (11/18/2007 to 10/13/2008). Using the SoF time frame, we were able to identify relevant raids in the DKP system. The DKP system dynamically generates an html page per raid which lists the date of the raid, the raid name, a list of the individuals present for the raid, the DKP value for the raid, as well as the loot (items dropped) and individuals who purchased the items.

Utilizing a web scraping program, we downloaded and saved data for each individual in each raid in the time period. A custom text parsing program was written to extract the relevant data: raid, attendance, percentage of DKP earned (PDKP), Percentage of DKP spent on loot (SPDKP), tenure, class, social role, and gender. Raid attendance was calculated by a count of the number of raids an individual attended. PDKP was calculated as a ratio of an individual’s earned DKP to the total possible earned DKP of the time period. SPDKP was calculated as a ratio of an individual’s spent DKP to the DKP they earned in the time period. Tenure represents the total amount of time (not just within the sampling period) an individual had been a member of the guild. Class represents the class of the avatar (i.e. warrior, cleric, shaman). Social role represents the socially constructed role an individual is supposed to take (i.e. Healer, Tank, damage dealer (DPS)). Lastly, gender represents the gender of the avatar.

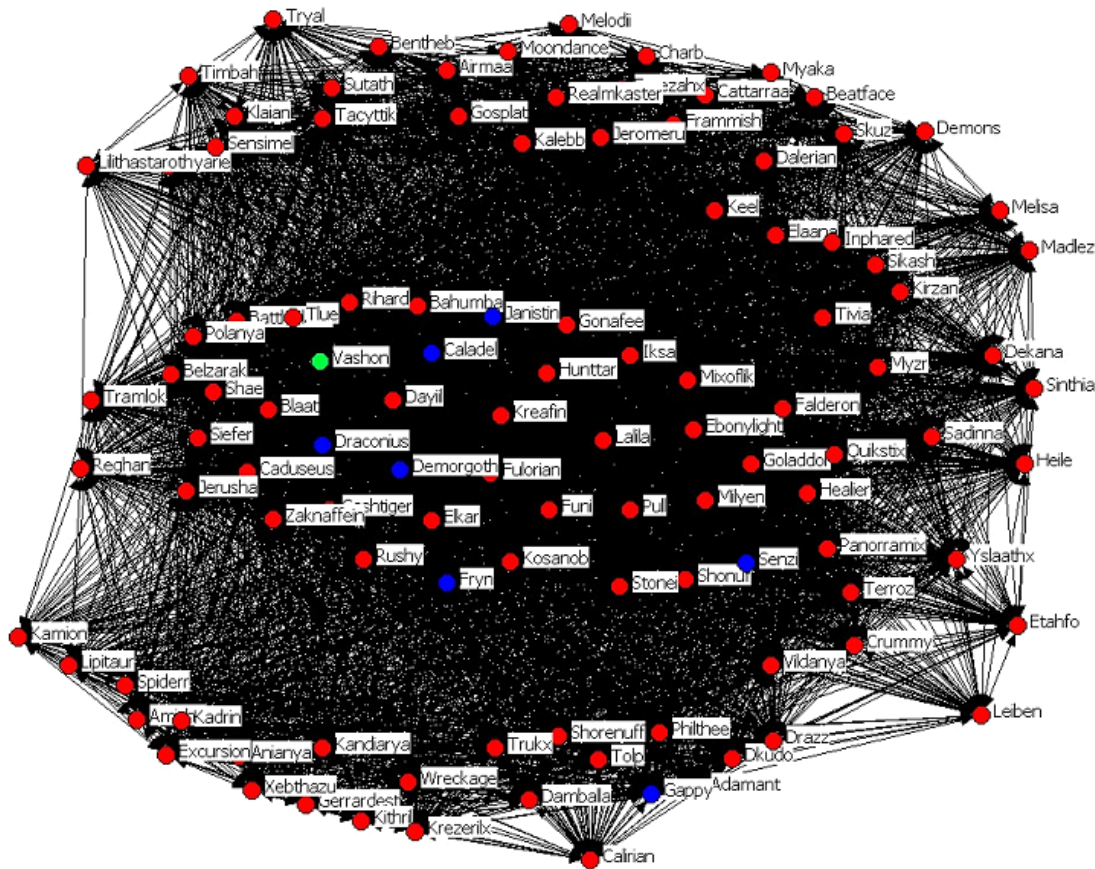


Figure 1. Social network analysis of the central people within DH

The raid participation data was used to generate a social network matrix representing each of the raids in the expansion and the individuals who attended them. If person A participated in raid X with person B, a 1 was placed in the corresponding cell to indicate tie between these two players. Overall, this allowed for the inclusion of 1631 DKP raid entries representing formal guild activities. Each raid was attended by an average of 51 participants. We were able to identify 112 unique individuals, of which 8 were designated leaders. The data were analyzed using UCINET to assess individual network centrality measures and to create a visual representation of the overall guild structure, and SPSS to assess the significant predictors of leadership.

RESULTS

Figure 1 offers a visual representation that speaks to the central participants within DH. Red circles represent regular members and invites, blue circles represent officers, and the green circle represents the guild leader. As you can see, the leaders within the guild are very central in the guild's activities. We then ran a one-way ANOVA which compared current designated leaders to regular members. Our results indicate that leaders attended significantly more raids ($F=12.114$, $df=1$, 110 , p -value < 0.001), earned more DKP ($F=11.07$, $df=1$, 110 , p -value < 0.001), and had a higher PDKP ($F=11.07$, $df=1$, 110 , p -value < 0.001), tenure ($F=27.208$, $df=1$, 110 , p -value < 0.0001), and centrality ($F=12.085$, $df=1$, 110 , p -value < 0.001) than regular members. Interestingly, leaders did not have a significantly different SPDKP than regular members, indicating that leaders did not spend more DKP to obtain loot than regular members.

Table 1: Combined Top 20 members by participation and tenure

	Top 20	Officer/ Leader	DKP Earned	SPDKP	Class	Social Class	Gender	Tenure (months)
Vashon	Both	L	45,392	34	Bard	DPS	M	60
Caladel	Both	O	44,777	37	Paladin	Tank	M	70
Demorgoth	Both	O	41,364	31	Warrior	Tank	M	78
Draconius	Both	O	43,422	35	Monk	DPS	M	47
Fryn	Both	O	40,807	39	Bard	DPS	M	46
Janistin	Both	O	38,861	45	Wizard	DPS	M	78
Senzi	PDKP	O	37,947	41	Rogue	DPS	M	23
Bahumba	Both	M	41,617	41	Cleric	Healer	F	26
Funi	Both	M	45,292	33	Shaman	Healer	M	47
Healier	Both	M	37,077	46	Cleric	Healer	M	72
Mixoflik	Both	M	41,944	4	Wizard	DPS	M	47
Polanya	Both	M	40,601	33	Bard	DPS	F	45
Thue	Both	M	42,099	33	Cleric	Healer	F	56
Zaknafein	Both	M	39,932	52	Warrior	Tank	M	46
Blaaat	PDKP	M	43,427	34	Druid	Healer	M	34
Cashtiger	PDKP	M	40,214	45	Beastlord	DPS	M	25
Ebonylight	PDKP	M	44,142	36	Druid	Healer	M	27
Hunttar	PDKP	M	44,592	45	Ranger	DPS	M	43
Iksa	PDKP	M	43,522	41	Monk	DPS	F	38
Rihard	PDKP	M	44,397	40	Paladin	Tank	M	17
Battleblade	Tenure	M	36,654	55	Warrior	Tank	M	47
Belzarak	Tenure	M	35,551	50	Warrior	Tank	M	45
Elaana	Tenure	M	29,428	51	Cleric	Healer	F	55
Falderon	Tenure	M	27,901	51	Rogue	DPS	M	46
Jerusha	Tenure	M	34,754	33	Druid	Healer	F	47
Kosanob	Tenure	M	26,334	57	Paladin	Tank	M	68
Kreafin	Tenure	M	21,523	39	Bard	DPS	F	47
Pull	Tenure	M	37,891	43	Monk	DPS	M	78

Given these results and that we were interested in being able to differentiate between attributes of designated leaders and potential emergent leaders, we sorted the dataset by PDKP and tenure in descending order. While PDKP and degree are conceptually distinct, they were not statistically different, therefore we present only PDKP (overall participation) results. We then ran one-way ANOVA analyses for the attributes of the top 20 individuals. While we are aware that choosing the top 20 is somewhat arbitrary, we felt it was a reasonable cut-off in order to balance investigative comparisons of formal leaders with the other most active members and members with longest tenure. Overall, 7 of the 8 leaders were in the top 20 for both

analyses, with 12 other regular members (see table 1). We noted variation in the names of the regular members who were in the top 20 for tenure and participation, while the officers remained constant.

Our results indicate that when comparing designated and potential emergent leaders for the top 20 in participation, designated leaders had higher tenure ($F=4.615$, $df=1$, 19 , $p\text{-value} < 0.05$). When comparing designated and potential emergent leaders for the top 20 in tenure, designated leaders had a higher PDKP ($F=5.665$, $df=1$, 19 , $p\text{-value} < 0.05$) and degree ($F=5.633$, $df=1$, 19 , $p\text{-value} < 0.05$). These results suggest that formal leaders are those who have participated in guild activities the most frequently and also for the longest period of time. Full members aspiring to attain a formal leader rank should focus on building tenure and participating as frequently as possible.

We did identify two major differences between formal leaders and emergent leaders. While many emergent leaders on the top 20 lists were from the healer class, none of the formal leaders are healers. Similarly, while many of the emergent leaders are female, all of the leaders are male. Therefore, in terms of leadership, discrimination may play a role in formal promotion systems in guilds, just as in regular organizations.

LIMITATIONS

In order to properly discuss our findings, we first discuss several limitations of our approach. First, the use of a singular guild naturally raises generalizability and replicability concerns. Our personal experiences suggest that this limitation may not be overly biasing. While MMOGs may be very different, guilds are surprisingly isomorphic and adopt practices from other guilds which are perceived to be successful. Accordingly, the use of a points system of sorts to track attendance and participation is the norm for many high-end guilds. Also, the guild selected for this analysis is a high-end guild, representing only one of other possible types of guilds suggested by Ducheneaut et al. (2007). However, we felt justified in our choice given that Dark Horizon, as a raiding guild, represents a good fit to study organizational and leadership phenomena given that its stated goals and activities more closely match real-world organizations than a socially-oriented guild.

Another potential limitation is the small sample size of officers in the subset of data we analyzed. Given that this is a study-in-progress, we hope to be able to increase the sample size of officers by using additional expansion data. Lastly, the DKP system only tracks officially sanctioned guild activities. The system does not track “off-time” activities or socialization, of which there exist many other types of interactions between members (Yee, 2006a). This is an important area of future research – combining guild activity data from multiple sources to identify additional leadership behaviors.

DISCUSSION AND CONCLUSION

In our first two research questions, we asked what differentiated designated leaders and regular members and if designated leaders participated more than regular guild members. Our results indicated that designated leaders were different than regular members in several ways. Designated leaders seem to display a very “gung-ho” attitude, in that they attended more raids, earned more DKP, were more central, and had longer tenure. While this is consistent with what the emergent leadership literature would predict, Yee (2006c) proposed that guild leaders often times feel obligated to play, leading to burnout and turnover. While we are unable to suggest this feeling of obligation is what motivated designated leaders in this study to participate more, we are comfortable suggesting that future studies should look at other possible explanations for participation, in particular for other emergent turned designated leaders such as guild officers. Certainly, the different leadership perspectives such as trait, behavioral, and contingency perspectives (Yoo and Alavi, 2004) provide foundations for future studies.

For the third research question, we asked what attributes made good predictors of designated leaders. Answering this question would aid in trying to ascertain predictors for potential emergent leaders. Yee (2006c) found that 68% of the 173 guilds he surveyed were lead by individuals who had not created the guild. The high degree of burnout for guild leaders necessitates having potential successors waiting in the wings. We were able to identify three predictors – participation, centrality, and tenure. These results suggest that potential emergent leaders could be identified by looking at regular members who display those attributes. For this reason, we hope that MMOGs may provide a suitable context for studying issues regarding real-world leadership succession.

For our last research question, we asked what differentiated designated leaders from possible emergent leaders given the predictors we previously found. When comparing the individuals who participated in guild activities the most, what differentiated designated leaders from possible emergent leaders was the higher length of tenure designated leaders had. When comparing the two groups again using the individuals with highest tenure, we found that what differentiated designated leaders from possible emergent leaders was that designated leaders participated more and were more central. These results are consistent with some of the ideas from the emergent leadership literature. While we did not test these explicitly, it makes logical sense that in order to be promoted, group processes which result in positive outcomes such as higher degrees of trust

or reputation over a long period of time are necessary. However, there does appear to be discrimination in the guild, where all of the formal leaders are men promoted from the fighting classes. This indicates that if full members are seeking leader roles, they should choose avatars that are male and from a warrior class. The exact outcomes and other important attribute predictors remain unexplored and present yet more fruitful research streams.

MMOGs and guilds are involved in activities which mirror real-world organizations and work. While there remain questions about the transferability of skills and concepts from MMOGs to the real-world (Shultze et al., 2008), we remain hopeful that our study has demonstrated how studies into virtual worlds may contribute to relevant leadership practices.

REFERENCES

1. Blizzard (2008) World of warcraft subscriber base reaches 11.5 million worldwide.
2. Castronova, E. (2005) *Synthetic worlds: The business and culture of online games*, University of Chicago Press, Chicago.
3. Dannecker, A., Richter, S., Lechner, U., Dressner, N., Fabisch, S., and Ilsemann, A. (2008) Towards world of warcraft as an experiment platform for teams, *AMCIS 2008 Proceedings*, Toronto, Canada.
4. Desanctis, G., and Monge, P. (1999) Introduction to the special issue: communication processes for virtual organizations, *Organization Science*, 6, 5, 524-540.
5. Ducheneaut, N., Yee, N., Nickell, E., and Moore, R.J. (2006) Building an MMO with mass appeal, *Games and Culture* (1:4), pp 281-317.
6. Ducheneaut, N., Yee, N., Nickell, E., and Moore, R.J. (2007) The life and death of online gaming communities: A look at guilds in world of warcraft, *CHI 2007 Proceedings*, San Jose, CA.
7. Eisenhardt, K. (1989) Agency theory: An assessment and review, *Academy of Management Review*, 14, 1, 57-74.
8. Hollander, E.P. (1960) Competence and conformity in the acceptance of influence, *Journal of Abnormal and Social Psychology* 61, 3, 365-369.
9. Hollander, E.P. (1961) *Emergent leadership and social influence*, Holt, Rineheart & Winston, New York.
10. IBM (2006) *Gaming and leadership report: Virtual worlds real leaders*.
11. Ives, B., and Junglas, I. (2008) APC forum: Business implications of virtual worlds and serious gaming, *MIS Quarterly Executive* 7, 3, 151-156.
12. Jarvenpaa, C.S., and Leidner, D.E. (1999) Communication and trust in global virtual teams, *Organization Science* 10, 6, 791-865.
13. Maznevski, M.L., and Chudoba, K.M. (2000) Bridging space over time: global virtual team dynamics and effectiveness, *Organization Science* 11, 5, 473-492.
14. Nardi, B., and Harris, J. (2006) Strangers and friends: collaborative play in world of warcraft, *Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work*, Banff, Alberta, Canada.
15. Powell, A., Piccoli, G., and Ives, B. (2004) Virtual teams: a review of current literature and directions for future research, *SIGMIS Database* 35, 1, 6-36.
16. Reeves, B., Malone, T., Yee, N., Cheng, H., Abecassis, D., Cadwell, T., Abbey, M., Scarborough, J., and Read, L. (2007) *Leadership in games and at work: Implications for the enterprise of massively multiplayer online role-playing games*, Palo Alto, CA.
17. Shultze, U., Hiltz, S.R., Nardi, B., Rennecker, J., and Stucky, S. (2008) Using synthetic worlds for work and learning, *Communications of the Association for Information Systems* 22, 19, 351-370.
18. Sony (2008) Everquest network status page.
19. Steinkuelher, C.A. (2004) Providing resources for MMOG guild leaders, *MUD Developers Conference*, San Jose, CA.
20. Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N., and Nickell, E. (2006) From tree house to barracks: The social life of guilds in world of warcraft, *Games and Culture* 1, 4, 338-361.

21. Williams, D., Yee, N., and Caplan, S.E. (2008) Who plays, how much, and why? Debunking the stereotypical gamer profile, *Journal of Computer-Mediated Communication* 13, 993-1018.
22. Yee, N. (2006a) The demographics, motivations, and derived experiences of users of massively-multiuser online graphical environments," *Teleoperators and Virtual Environments* 15, 309-329.
23. Yee, N. (2006b) The labor of fun: How video games blur the boundaries of work and play, *Games and Culture* 1, 1, 68-71.
24. Yee, N. (2006c) Life as a guild leader from the daedlus project," in: *The Daedlus Project*.
26. Yee, N. (2006d) The psychology of massively multi-user online role-playing games: Motivations, emotional investment, relationships, and problematic usage, Springer.
27. Yoo, Y., and Alavi, M. (2004) Emergent leadership in virtual teams: what do emergent leaders do? *Information and Organization* 14, 27-58.