

MATCHING PEOPLE AND GROUPS: RECRUITMENT AND SELECTION IN ONLINE GAMES

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Abstract

Massively multiplayer online games (MMOGs) have great potential as sites for research within the social and behavioral sciences and human-computer interaction. This is because “guilds” — semi-persistent groups in online games — are much like groups in real organizations. In this paper, we examine how groups and individuals find appropriate matches and whether appropriate matches lead newcomers to stay longer in their groups in an online game environment. Results from archival data, observation, and survey in the game World of Warcraft (WoW) indicate that different selection methods lead to person-group fit for social and task-oriented characteristics and good fit leads recruits to stay longer in their group. In particular, recruitment of new members to task-oriented guilds was most successful when brief interactions were used whereas recruitment to social-oriented guilds was most successful when probationary periods and referrals were used.

Keywords: Fit, MMOGs, Guilds, Players, Selection, Retention

Introduction

Most IS researchers look at how technology is used within an organization to support business processes by providing or analyzing information. As of May 2008, nine of the top 20 most frequently visited websites in the US are social sites or online communities, in which people come together to communicate and exchange information (Alexa.com). With this growth in online communities, it is now increasingly important for companies to understand how to develop technology that can be used by people outside of the organization for social as well as informational use.

Online groups and communities share many challenges faced by their offline counterparts. For example, they must recruit and retain new members, socialize them to group norms, motivate them to make appropriate contributions, resolve conflicts, and in many cases, coordinate work. The cultures of online groups and their technological environment mean that some of the constraints under which they attempt to achieve these goals differ from the constraints faced by offline groups. For example, because they don't need to select members based on geographic proximity, they have access to a larger pool when recruiting and selecting members than do offline groups. On the other hand, the lack of employment contracts and the relatively weak interpersonal ties between members in many online groups probably reduces members' commitment to online groups. Despite these differences, they can and do rely upon some of the same techniques used in offline groups and organizations. As we describe in more detail below, they can use a variety of selection techniques analogous to those used by offline groups to identify new members who "fit" the group – i.e., who have skills and dispositions that the group values and have values that are compatible with those of existing group members.

In this paper we ask whether the effectiveness of the techniques that online groups use to select members differs depending upon the primary orientation a group adopts. Researchers have long distinguished between task-oriented and social-oriented motivations and behaviors as primary dimensions on which groups differ (Ellis and Fisher, 1994). Ellis and Fisher (1994) define the task dimension as the relation between group members and the work they have to do and how they go about doing it. Task-oriented individuals focus on tasks concerned with pursuing task goals by offering questions and answers aimed at progressing toward solutions (Edwards, 1994). The social dimension is the relationship among group members—how they feel toward one another and about their membership in the group. Social-oriented individuals emphasize being friendly and agreeing with other members. These reactions lead to the maintenance or destruction of harmony and management of group tensions. Although all groups display some task and some social behaviors and motivations, the balance can differ across groups. In some academic departments, for example, faculty members are all business, coming together only to teach their courses and conduct their research, but socializing little outside of these formal duties. Other departments are more socially oriented, with frequent informal lunches, socializing outside of work, and friendships among department members.

As in offline groups, online groups differ in extent to which they adopt a task-orientation, a social-orientation or some mixture of the two. For example, the groups that write articles for the

online encyclopedia, Wikipedia, are primarily task-oriented with explicit norms that discourage socializing.¹ In contrast, social networking sites like facebook.com, myspace.com and friendster.com and many online support groups are primarily social spaces, where members come together primarily for the pleasure of socializing. Of course, many online groups fall between these extremes.

Theories of person-environment fit (Schneider, 1987) and attraction-selection-attrition (Fernandez and Weinberg, 1997) suggest that groups should be successful in retaining members when they are able to match their orientation to their members' motivation. One way in which they achieve this matching is by a selection process, in which they choose for the membership people who have given off signs that they will fit well with the existing group. In the real world, organizations and individuals employ a variety of methods for recruiting and selecting new members. Among the most important are (1) the exchange of documents, such as applicant resumes; (2) brief interactions between the organization and new recruits such as interviews; (3) longer interactions, such as probationary periods or internships which give recruits and the group experience with each other; and (4) referrals from existing organizational members (Fernandez and Weinberg, 1997). There is reason to believe, however, that the usefulness of these techniques will depend upon the attributes the group is attempting to assess.

Social assessments rely on tacit information that is hard to identify and quantify values. Tacit information of individuals consists often of habits, personalities, and social skills that even individuals do not recognize in themselves. It is not easily represented and evaluated for short periods. If a group attempts to quantify or evaluate this information of individuals for short periods, the results will not be trustful due to the possibility of bias, prejudice, and counterfeiting. Therefore, effective assessment of social or tacit information generally requires extensive personal contact to see the actual behavior, and trust. On the other hand, task assessments are based on relatively explicit information. This information consists of grades, facts, and actions that can be expressed formally in a quantitative summary. Thus, task-related information can be articulated, codified, and easily transmitted. It does not require much personal contact and hard to be faked due to the publicity of information.

Different selection techniques form a continuum in terms of the amount and validity of the information they provide for different types of assessments. Documents listing credentials, such as resumes or statements of purposes documents usually include task-related information, such as education, prior experience or grade point average. Because the information is already codified, it takes little time to evaluate credentials. Moreover, some types of credentials, like educational history, can be independently verified. However, they are also generally explicitly written for self-presentation, and thus may not allow the reader to extrapolate beyond what the author presented about his or her accomplishments or prior experience. Moreover, credentials generally give the assessor only summary information, and not the raw data from which the summaries were built. This makes them less useful for tacit judgments, where the rules of inference are not well understood. Thus, while credentials are generally useful for making task-related assessments, they may be less useful for making socially-related ones. The second technique, interviews or short tests, such as psychometric and physical tests, provide more tacit

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http://en.wikipedia.org/wiki/Wikipedia:What_Wikipedia_is_not#Wikipedia_is_not_a_blog.2C_webpace_provider.2C_social_networking.2C_or_memorial_site

information. However, because of their short duration, the information can be easily manipulated. Brief interactions rarely provide the assessor with behavioral samples of people engaged in authentic contextually-valid tasks, although in principle they could. For example, when selecting programmers, a software development firm could give a candidate a programming test, but could not assess how the candidate would get along on a programming team. At the other extreme, probationary periods provide a large amount of difficult-to-manipulate data about what an individual or organization is like. Interactions between the individual and group take place in the work context and involve authentic tasks. Unlike job interviews, for example, the behavioral sample revealed in a probationary period or internship is difficult to manipulate for personal advantage. Rather, the interactions between the applicant and supervisor take place over an extended time period. In addition, they include both direct exchanges between the newcomer and the group as well as indirect observations—for example, observations of how established group members react to the newcomer, thus making them useful to assess both easy-to-assess task information and tactic task and social information. Because candidates know that they can be accurately assessed during a probationary period, the probationary periods discourage them from making false claims. This is one reason why academic tenure is generally awarded only after an extended period (6-8 years). The fourth selection technique, use of referrals from existing group members provides only indirect information but is nonetheless can be useful for accurate and valid selection because the referee has detailed and long-term information about both the newcomer and the group and is motivated to present it accurately. In addition, referees have their own reputations to protect and this generally deters them from bringing an inappropriate member into a group of which they are part (Woodcock, 2008). The usefulness of references from group members, however, depends upon the type of information to which the reference has access. By interacting with the candidate in non-group settings, the referee might know about a candidate's sociability and continuousness, for example, but not whether the candidate has skills the group needs.

In summary, to the extent that task-based selection is based on explicit criteria using evidence that will not heavily distorted by self-presentation, assessors should be able to do a good job of selecting potential group members by relying upon credentials, brief interactions. While probationary periods generally provide the best task information, they are expensive to collect. References from current group members are valuable to the extent that the reference is aware of relevant task performance, but not relevant otherwise. In contrast, because judgments for socially-based section are likely to rely upon more easily falsified information and the decision making is likely to use tacit criteria, credentials and brief interactions are both unlikely to be valuable, while probationary periods are.

Selection of members to guilds in World of Warcraft

In this paper, we test these ideas in the context of guilds in the multi-player game called World of Warcraft (WoW). World of Warcraft is the most popular US-based massively multiple player role play game, with over 10 million paying subscribers (Ducheneaut *et al.*, 2007). In the World of Warcraft players, typically working in groups, perform a sequence of game-defined tasks, such as exploring a region of the game world or killing a specific monster, for which they gain in-game money, skills, loot and status. In the process of performing these tasks, they have many opportunities for social interaction with strangers, opponents, and members of their own group.

Guilds are the semi-persistent groups in which players coordinate their social activities or accomplish difficult tasks in the games, such as killing powerful monsters (Williams *et al.*, 2006). They are also sites for friendships, pleasurable conversations, and other social rewards. Players in online role-playing games often form guilds from among their offline friends and acquaintances or form lasting relationships with other players in these guilds (Williams *et al.*, 2006). The guild itself not only serves as a broader social environment where resources and services can be exchanged as in a real organization but also has many of the same problems of recruiting, selecting, retaining and socializing members as small organizations or work groups within conventional organizations or voluntary associations.

Guilds' task- and social-oriented orientations

Guilds differ in the extent to which they are task-oriented and/or socially oriented (Williams *et al.*, 2006). Task-oriented guilds are primarily oriented toward achieving success in the game by helping members accomplish difficult tasks, develop skills and amass loot. Social-oriented guilds, by contrast, are mainly oriented towards providing a convivial place for members to socialize. Some guilds combine the two types of orientations.

Guilds' different goals are clearly represented in their recruitment statements, which we collected from the World of Warcraft's official board and guilds' websites. The following is a recruitment statement of a task-oriented guild.

"50 committed Enlisted members to protect The Horde's honor out of 10 members are level 60. Members are encouraged to grow and rise in rank to become officers. Our common goal is to have only level 60's 'members only'. You must be at least level 40 and minimum 18 years of age. If you are looking for [a] relax play guild, this is not a guild for you. This is serious, raid-oriented guild. This guild invests only in active grown-up dedicated gamers." - Terranova

The primary goal for task-oriented guilds is to complete tasks that enhance the guild's power, such as intensive raiding and quests in games, which allow its members to gain more status in the game by "leveling up." As illustrated in the recruiting statement, task-oriented guilds consider ability, level, and intensive play style as critical factors in assessing potential players.

In contrast, following recruitment statement from a socially-oriented guild illustrates that the guild's primary focus is on social interaction, rather than complex collaborative activities.

"Our guild is looking for people who want to make friends and just have fun. We are an established guild with about 20 people so far. If you are looking for people to chat with, help with quests, and be relaxed, join us today. Any level and class welcome." - SWAT

This statement shows how social-oriented guilds emphasize players' personalities, are associated with a relaxed play style, and support the goal of getting to know people, and form satisfying, lasting relationships. Social-oriented players can be expected to evaluate guilds' social culture in the same way.

Player's task- and social-oriented motivations

Just as guilds differ in the extent to which they are task and/or socially-oriented, so too players differ in the motivations they have in playing the game. Bartle (1996) classified players of massively multi-player online role-playing games as Achievers, Socializers, Killers, and Explorer. In later work, Seay (2006) developed reliable questionnaires to measure players'

orientations in MMOGs and demonstrated that these motivations are not mutually exclusive. Seay (2006) identified five distinct dimensions of players' motivation - achievement, relationship, escapism, role playing, and manipulation. Of these, the achievement and the relationship motivations are especially important, both because they explain differences in the way people play online games and because they offer a strong parallel to the task and social-emotional orientations, which differentiate people within work organizations (Burke, 1967; Seay, 2006). Players with an achievement motivation concentrate on gaining skills in the game, accomplishing game-set goals, and acquiring the power and prestige that go with these. Players with a relationship motivation concentrate on getting to know other players and becoming friendly with them. According to the theory of person-environment fit and the attraction-selection-attrition models, task-oriented players should be happier and remain members longer if they join a hard-driving and raid-oriented guild that emphasizes achievement. Similarly, social-oriented players should be more satisfied and remain in the guild longer if they join a more relaxed and socially-oriented guild that emphasizes relationships. Thus, matching players' interests and the guild's needs is crucial to the guilds' success at maintaining itself over time and retaining members. As in conventional organizations, matching individuals and groups is a bi-directional process, in which guilds identify, recruit and socialize appropriate members and potential members identify appropriate guilds (Bauer *et al.*, 2007; Moreland and Levine, 2001).

In online games, task-oriented individuals can be seen as achievers and social-oriented individuals as socializers in Seay's typology (Burke, 1967; Seay, 2006). Achievers regard points-gathering and increasing their performance level as their main goals. For them, socializing is just a relaxing method of discovering what other players know about ways to accumulate points--knowledge that can be applied to the task of gaining riches. Unlike task-oriented players, socializers are primarily interested in people and what they have to say. For them, the game is a backdrop, an activity which brings players together and provides a set of common experiences for conversation. More important are inter-player relationships: listening, empathizing with people, and joking/entertaining. Even simply observing others' play is seen as rewarding.

Selection Methods and Fit

In the observations and interviews conducted before the implementing the survey described below, we found that guilds in WoW used techniques similar to those used in the real world when selecting new members (Table 1). For example, some guilds require players to submit their application, reporting their credentials such as levels, abilities, and experiences. As in an interview, guild members and individual players directly interact by chatting in-game or as they jointly participate in ad hoc game tasks within pick-up groups which are short lived collaborations between pairs or very small groups of players created to perform a specific game task. In addition, some guilds have a mandatory probationary period for new players before approving them as real members (Judge and Ferris, 1992; Saks and Ashforth, 1997). Finally, guilds recruit and select new members who are friends or family members of current guild members. For example, in many social guilds, particularly the smaller ones, the social interactions are extensions of real-world social bonds (Bowen *et al.*, 1991; Breugh, 1992; Saks and Ashforth, 1997).

Credentials

Task-oriented guilds want to assess players' task-related factors such as level, skill, and abilities. These factors are relatively objective because they can be represented by readily available

information about a player. For example, a player's level is represented by a number from 0-70, and character's race, skills, and equipment are easily visible. Thus, it is difficult to misrepresent these factors. Guilds may evaluate applications in which players report their prior experiences and characters' levels, classes, jobs, and. It usually takes a comparatively short time, less than one hour, to evaluate these applications. In the end, using credentials can quickly help task-oriented guilds to find a better task fit to individuals based on trustworthy task-related factors.

Table 1. Characteristics of selection methods in World of Warcraft

Selection Methods	Examples	Characteristic of information	Trustworthiness for task-related factors	Trustworthiness for social-related factors	Length of Time to evaluate	Amount of Interaction
Credentials	Applications	Explicit	High	Low	Short	No interaction
Brief interactions	Chatting, Short play	Both Explicit and Tacit	High	Low	Short	Limited interactions
Probationary period	Guild experience	Both Explicit and Tacit	High	High	Long	Direct interactions over an extended time
Referrals	Acquaintances of current guild members	Both Explicit and Tacit	Low	High	Long	Extensive trustful historical interaction

In contrast to the selection process of task-oriented groups, the selection processes of social-oriented groups are based on criteria such as trustworthiness and interpersonal skills (Avery and Campion, 1982). These factors are difficult to measure and hard to verify. Social-oriented guilds may not care much about task related factors. As we saw in the above example of a social-oriented guild's recruiting statement, most social-oriented guilds seek members who want to make friends and have fun regardless of their level, skill, and abilities. Thus, requesting credentials may not help social-oriented guilds identify individuals suitable for membership. Thus, our first hypothesis is as follows:(Williams *et al.*, 2006)

H1: When task-oriented guilds use player's credentials as a selection method, they produce a better task fit to recruits.

Brief Interactions and Probationary Periods

Brief interactions such as interviews and short tests, some of the most popular brief interaction methods, have been found to be highly useful for assessing communication and interpersonal skills but less useful for assessing task skills (Baron and Kreps, 1999). Because of their short duration, brief interactions rarely provide behavioral samples of people engaged in authentic contextually-valid tasks. A further problem with interviews is that there are many factors which can bias interviewers, including gender, race, age, clothing, and non-verbal behavior in face-to-face interviews (Kiesler *et al.*, 1984). Probationary periods are more useful than brief interactions when an organization wishes to hire employees whose abilities and qualifications are hard to verify without direct observation. For example, if one values a quality that can only be verified through direct experience, such as willingness to cooperate, then probation would be appropriate

(Burgoon *et al.*, 1996; Floyd and Guerrero, 2006). The data available at the time of application may not be enough to make an informed judgment as to the applicant's long term suitability for the job, as was earlier noted in the reference to the academic tenure system.

Although brief interactions may not be suitable for certain types of real world selection, they may be useful for task-oriented guilds and players because of the unique characteristics of game environment as shown in Table 1. First, playing with a pickup group for a short period of time in a game reveals some authentic guild tasks. The size of the pickup group is generally small, but the players perform some tasks (e.g., killing monsters, or completing an in-game quest together) are very similar to guild tasks. Furthermore, completing in-game tasks takes only a few hours or days whereas it usually takes several months to complete a project in a real organization. Thus, collaborating in a pickup group is similar to completing a project with a group member in a real organization. Although a probationary period can be useful to verify a player's abilities, this takes at least one month. Given the relatively short life cycle of guilds, probationary periods may not be a useful selection method for task-oriented guilds.

In addition, although character's gender, race, age, level, and clothing that the players selects for his/her character are often factors that cause bias in short interaction in off-line organizations, they may be direct indicators of a player's ability to achieve a task in a game. Character's skills, which differ depending on race, level, and how long the player has played with the character may indicate whether the player uses their tools and skills effectively or not. If, for example, a character wears fancy clothing and has a weapon, it means that the player can kill monsters and defend himself/herself effectively from attacks of monsters. Thus, the relevance of brief interactions may be high for task-oriented guilds but low for social-oriented guilds. Our second hypothesis is as follows:

H2: When task-oriented guilds use brief interactions as a selection method, they produce a better task fit to recruits.

Unlike task-oriented guilds, social-oriented guilds may benefit more from using probationary periods than brief interactions. This is because group cultures and personalities are difficult to measure and can easily be misrepresented for a brief period. That is, it is hard for guilds to discern in a short time, whether the player is trustworthy, easy-going, sociable or has a good sense of humor. Given computer-mediated communication (CMC), it is especially hard for supervisors to evaluate social attributes of applicants because of the lack of non-verbal behaviors such as body language, posture, facial expression, and eye contact (Baron and Kreps, 1999). Non-verbal cues can express emotions, interpersonal attitudes, personality, and provide interaction cues for speakers and listeners (Breugh, 1992). Lacking these cues, information is exchanged at a slower rate in computer-mediated settings than in face-to-face ones and, as a result, slows the development of social relationships. However, as noted by prior researchers, when observed over time, CMC groups may eventually equal face to face groups in the quality of the social relationships they support (Schneider, 1987). As the frequency of interaction between people using CMC increases, the effectiveness of communication increases as well. In probationary periods, the number of interactions may be especially high, allowing the guild to evaluate the social attributes of players. Consequently, learning a player's social attributes during a probationary period helps social-oriented guilds attain a better social fit of players to guilds. Our third hypothesis is as follows:

H3: When social-oriented guilds use probationary periods as a selection method, they produce a better social fit to recruits.

Referrals

Referrals by current workers are valuable in organizations that hire primarily based on attitudes, values, or organizational fit, and many organizations depend on current employees for referrals (1991). Current employees have a strong understanding of the culture of the organization and can easily provide this information to the person that they recommend. In addition, an employee who enters an organization with pre-existing ties to a current employee will have an easier time becoming assimilated socially within the workgroup. There is a strong psychological tendency toward reciprocity in social relationships, whereby the friends of our friends become our friends as well (Seay, 2006). Therefore, the new hire is likely to form positive relations with the other people.

Similarly, many social guilds select friends or family members of current members as new members. This is because current members can give recruits detailed information about the guild, particularly information that is hard to learn without social relationships. Because most things social-oriented players want to know are tacit and hard to verify, asking insiders is good way to learn about a guild. From the guild perspective, the new member may develop positive relations with the other members with whom the sponsor already has positive relations. In addition, the current member responsible for the referral will presumably have a reputation stake in the accomplishments of the player whom he or she referred, thus providing an additional reason for him/her to support to the new member. Therefore, social-oriented guilds may often use referral selection methods which lead to better social fit to individuals.

On the other hands, referrals are unlikely to be as effective in task-oriented guilds. A new member who is a friend of a current member but is not at a high enough level to play may not be welcomed by task-oriented guild members because an inexperienced member can make all guild members die during raids. In addition, task-oriented guilds often curse and insult members who make mistakes during raids. Referees might feel uncomfortable using this type of harsh language with pre-existing social ties, especially with romantic partners or young players. This discomfort can decrease the effectiveness and fun of raids for guild members. Thus, referral appears to be a good method only for social-oriented guilds. Our fourth hypothesis is as follows:

H4: When social-oriented guilds use referrals as a selection method, they produce a better social fit to recruits.

Fit and Retention

Compatibility between groups and individuals has a strong impact not only on job satisfaction, commitment, and stress but also on loyalty and retention (Hair Jr. *et al.*, 1998) The attraction-selection-attrition framework suggests that consideration of fit during organizational entry is one of the primary influences in creating similarity within an organization (Aiken and West, 1991). According to this model, as a function of their own interests and personality, people are differentially attracted to careers/tasks/majors, and organizations select new people who are similar to current members (the *attraction/selection* processes). When people do not fit a group, they tend to leave it (the *attrition* process) and a more homogenous group stays than those were initially attracted to the organization. Bowen *et al.* (2001) also suggested that individual-

organizational fit becomes the critical factor when selecting employees for long-term employment.

Given this theoretical argument, we expect task-oriented guilds to seek task-oriented individuals and social-oriented guilds seek social-oriented individuals. To find a player whose motivation matches their own, guilds may evaluate the fit between the individual and themselves. That is, task-oriented guilds care about their task fit rather than their social fit to the individual since their main goal is not to get along with other players but to increase members' level of play through ongoing and intensive raids. With a good task fit, task-oriented players will be satisfied with the guild and thus they may remain in it longer. On the other hands, social-oriented guilds will focus on social fit to the individual player rather than task fit. Similarly, if guild members enjoy chatting in a relaxed manner and care about each other, social-oriented players will probably consider that the guild a good fit for them and will want to remain it longer. Therefore, our fifth and sixth hypotheses are as follow:

H5: When task-oriented guilds find a good task fit to recruits, they remain in the guild longer.

H6: When social-oriented guilds find a good social fit to recruits, they remain in the guild longer.

Methods

This study combines an online survey with direct observations and archival data to examine the interplay between players and already existing groups with regard to recruiting and selection. Our research site is the most popular online games, WoW. We recruited two types of respondents: guild leaders, such as guild managers or recruiters, and new members, who had just joined the guild.

Respondents were recruited from multiple sources, through the World of Warcraft's official board and players' community sites and by directly contacting players in the game. First, we recruited guild leaders and asked them to fill out a questionnaire about their guilds' motivations and their selection methods, with a response rate of 28%. We also asked the guild leaders to identify their guilds' newest member. We then contacted the newest members and asked them to fill out a questionnaire regarding their motivations in order to measure fit between individuals and groups. Our response rate for the newest member was 63%. Two hundred and eight guild leaders and 188 new members participated in the online survey. To verify their responses, we checked whether the players had played the game using the public information source "WoW armory" (<http://www.wowarmory.com/>) and "census plus" (<http://www.warcraftrealms.com/censusplus.php>). The data in "census plus" is collected by a Warcraft CensusPlus user interface modification, which runs the game's *who* command—listing characters online when players take the census and periodically transfer the resulting data to a server website for processing. Data about each player is updated twice a day and is visible to the general public. We compared new players' self-reports with this and excluded from our dataset those who did not appear in the public records. After this deletion we retained data from 207 guild leaders and 186 new members, from 186 guilds. Because multiple guild leaders could respond from the same guild, we calculated the orientations and selection methods for the guild based on the average of their answers. Furthermore, to verify guilds' task and social motivations, two researchers evaluated guilds' recruitment statements and websites. The Cronbach's alpha for

inter-coder reliability among the two researchers and guild leaders was .95 for task motivation and .91 for social motivation.

Table 2-1. Measurement of motivations	
How important are the following to (you/your guild) ¹ in the game?	
Task-oriented Motivation	Leveling up (your character/guild members' characters) ¹ as fast as possible.
	Accumulating resources, items or money.
Social-oriented Motivation	Getting to know other (players/guild members) ¹ .
	Chatting with other (players/guild members) ¹ .

¹ The new member and guild leader version of the question

Table 2-2. Measurement of selection methods	
How much did you learn about the newest member through the following methods?	
Credentials	Through his/her application in the guild website
	Through his/her resume in the official website
	Through his or her application in the game community websites
Probationary Period	Through his/her probationary period
Short-interactions	Through chatting with him or her once or twice in a game
	Through exchanging personal messages with him/her once or twice
	Through in-game play with him/her
Referral	Through the current members who are friends/ family members of him/her
	Through the face-to-face conversation with him/her in the real world.

Table 2-3. Measurement of Fit	
Task Fit	5- Guild's Task Orientation – The Newest Member's Task Motivation
Social Fit	5- Guild's Social Orientation – The Newest Member's Social Motivation

Measures

This study used two questionnaires for measuring motivations, one for new members and the other for guild masters. Table 2-1 above shows two versions of motivation questions, with the first wording in parentheses representing the new member's version and the second one representing the leaders'. To measure players' and guilds' motivations, we adapted two scales that have demonstrated high and validity in prior research. Table 2-2 above reflects guilds' usage of the four basic selection methods rated on five-point Likert-type scales. For the four types of selection methods, we modified items in the context of online games. For task and social fit, we used the equations in Table 2-3. We first calculated the absolute difference between individuals' scores for task or social motivation and the guilds' motivation scores. In order to have large numbers represent a good fit, we added minus signs to those scores and added 5. To measure retention, we used archival data from WoW armory and Wow census eight weeks after the

newest players participated in the survey to see whether each new player remained a guild member (1) or quit (0).

Analysis and Results

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12
1. Guild Size	48.05	28.45	-											
2. Guild Age	7.81	3.88	.16*	-										
3. Average level of Guild members	53.87	14.89	.35**	.45**	-									
4. Task-oriented Motivation	2.83	.95	.06	-.06	.09	(.82)								
5. Social-oriented Motivation	4.25	.72	-.00	.12	.04	-.10	(.92)							
6. Credentials	2.51	1.05	-.01	.10	.07	.19**	-.01	(.75)						
7. Brief Interactions	3.46	1.24	.00	.06	-.00	-.06	.19	.15*	(.79)					
8. Probationary Periods	2.63	1.43	-.00	.21**	.13	.08	.03	.39* *	.25**	-				
9. Referrals	3.76	.83	.06	-.02	.07	.01	.28**	-.02	.28**	.12	(.94)			
10. Task Fit	3.76	.90	.02	-.14	-.06	.31**	-.22**	.01	-.12	-.06	-.15	-		
11. Social Fit	3.28	.68	.06	-.08	.10	-.14	.12	-.16*	.14	.00	.12	-.13	-	
12. Retention	.56	.50	-.07	.04	.08	.16*	.24**	.04	.08	.06	.04	-.11	.19**	-

Note: N=186, * $p < .05$, ** $p < .01$

Table 3 lists the means, standard deviations, correlations among the variables, and reliability estimates (Cronbach's alpha along the main diagonal) based on 186 guilds. All reliabilities exceeded the .70 criterion.

To test our hypotheses, we conducted OLS multiple regression analysis. We used mean-centering when testing interaction effects to prevent problems of multi-collinearity between the statistical interactions and the main effects that comprise them. Table 4 below shows the results of multiple regression analysis predicting a task fit based on guilds' task orientation, the selection methods guilds used to assess new recruits and the interaction between the two.

The guilds with stronger task-orientation selected new members with a better task fit ($p < .05$). When task-oriented guilds used brief interactions as a selection tool they were able select members with a better task fit ($p < .01$), supporting H2. However, task-oriented guilds of credentials did not have any significant effect on task fit ($p > .10$), providing no support for H1.

Table 4 also shows the results of the analysis predicting social fit for guilds based on their social orientation, their use of different selection methods, and the interaction between the two. Guilds with more of a social-orientation selected members with better social fit ($p < .10$). However, overall use of credentials resulted in poorer social fit, and the negative interaction between social orientation and use of credentials shows that use of credentials resulted in poor social fit especially for socially oriented guilds (for the interaction, $p < .10$).

We also found a significant positive interactions between the guilds' social orientation and their use of referrals ($p < .05$) and probationary periods ($p < .10$). These techniques improved social fit for socially-oriented guilds, providing support for H3 and H4.

Variables	Task Fit	Social Fit
Guild's Task-oriented Motivation	.17**	
Guild's Social-oriented Motivation		.14*
Credentials	-.06	-.14*
Brief Interactions	-.06	.10
Probationary Periods	-.02	-.00
Referrals	-.11	.10
Task-oriented Motivation* Credentials	-.01	
Task-oriented Motivation * Brief Interactions	.33***	
Task-oriented Motivation * Probationary Periods	.08	
Task-oriented Motivation * Referrals	-.05	
Social-oriented Motivation * Credentials		-.25***
Social-oriented Motivation * Brief Interactions		.11
Social-oriented Motivation * Probationary Periods		.16*
Social-oriented Motivation * Referrals		.22**
R^2	.16	.16
$Adj R^2$.12	.12

Note: Entries are standardized regression coefficients; * $p < .10$, ** $p < .05$, *** $p < .01$

We used logistic regression to test the effects of motivations and fit on retention. Table 5 shows that task-oriented players remained in their guilds longer when they found a good task fit (Task-oriented Motivation * Task Fit $p < .01$). In addition, social-oriented players stayed longer in their guilds and the interaction between social-oriented motivation and social fit shows that this effect was stronger when they found a good social fit ($p < .01$). These results support both H5 and H6.

Variables	Parameter Estimates	Odds ratio
New Member Task-oriented Motivation	-.16	0.85
New Member Social-oriented Motivation	1.01***	2.75
Task Fit	.59***	1.80
Social Fit	.64**	1.90
Task-oriented Motivation * Task Fit	.82***	2.27
Social-oriented Motivation * Social Fit	.59**	1.80
<i>Cox and Snell R²</i>	.22	

Nagelkerke R^2	.29
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Note: * $p < .10$, ** $p < .05$, *** $p < .01$

Discussion

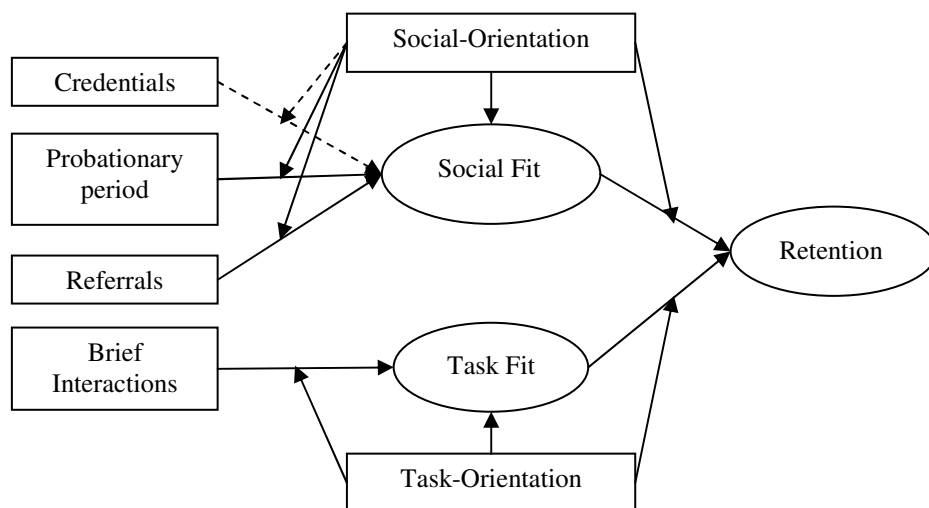


Figure 1. Summary of Results (.....→: positive impact, - - -> :negative impact)

We also found that the social-oriented guilds' use of referrals and probationary periods was associated with better social fit, while their use of credentials was associated with worse social fit. This might be because requiring prospective members to fill out credentials can send mixed signals to players. If social-oriented guilds, which typically welcome all races and levels, requested task-related credentials such as skills and levels, this request might have confused players,. The resulting confusion may create a worse social fit between guilds and players. Finally, we found that players remain in their guilds longer if they found good task fit or social fit. In other words, we found that a good fit resulted in higher retention of group members in the online environment just as it does in real world social organizations.

Overall the result on selection are consistent with the basic research intuition that difficult-to-assess characteristics of recruits require groups to employ more reliable diagnostic methods,

which collect data over longer time periods, are more resistant to self-presentational biases and are able to transmit tacit information about social style and personality. In World of Warcraft, the easy-to-assess characteristics were task-related, such as skill in killing monsters, because they were explicit and codified, while the difficult-to-assess characteristics were more social, like agreeableness and sense of humor. In other group settings, however, some task-related characteristics might be the difficult to assess ones. For example, while it might be easy to assess skill or knowledge through a test, conscientiousness (a task-oriented factor) may be as difficult to assess as agreeableness (a social one). Therefore, future studies that investigate specific selection methods in terms of their validity for assessing particular types of data are needed.

In principle, however, it should be possible to develop improved diagnostic instruments for the tacit dimensions that guilds or work groups care about. We concluded that probationary periods and referrals were be effective for social-oriented groups to measure social dimensions, while brief interactions were sufficient for task-oriented groups to assess task-related dimensions. However, practitioners might want instruments to measure the social and tacit factors of employees. For example, Arthur *et al.* (2001) tried to assess the methods that employment facilities use to find and choose their employees based on personality. They pointed out five major issues such as importance of looking at personality as a whole and the detection of bias associated with social desirability.

Limitation and Future Work

This study has several limitations. First, this study was conducted in a specific online game. Although we believe that WoW is a suitable place to investigate selection processes and behaviors of individuals and groups, further studies with need to replicate this research both in other online groups and offline to generalize the results. Second, we have told our story as if the use of particular kinds of selection methods in different types of group leads to better fit and that fit leads to better retention. However, our data are cross-section, and one cannot infer causation from these data alone. While the second assertion that fit leads to retention is consistent with much of the literature, our claims about selection methods still need to be examined further.

Conclusion

The results suggest that the right selection methods can help online groups to sustain memberships. That is, the use of specific methods helps different types groups to identify and select new members that fit the group better and, as a result, stay in it longer.

Selecting appropriate members is important for guilds (as it is for other organizations) if they want to increase their chances of growth and survival. While our data is somewhat limited, our analyses suggest the kinds of specific selection methods the guilds should use to attract and select task- or social-oriented players. Every day, hundreds of guilds are looking for players to play with. Surprisingly, most games do not offer specific guidelines on how to match guilds and players. Many players lose time unnecessarily when trying to find the right guild, and this leads to them leaving the game. We would recommend that social-oriented guilds find players who are friends of current members or observe players under probationary periods. For task-oriented guilds, we suggest playing with potential members. If game designers develop guidelines or tools to help individual players and guilds find appropriate matches based on this research, it could result in higher player retention within the guild as well as in games.

Online games and communities represent a new domain of social and task interaction which we need to understand. It also potentially provides a good field context in which to conduct studies where you have real functioning groups with subjectively real stakes. In fact, the guild itself serves as a broader social environment where resources and services can be exchanged like real organizations. Guilds have many of the same problems of recruiting, selecting, retaining and socializing members as do work groups in conventional work organizations or voluntary associations. Guilds are like work group in organizations, but they are more homogeneous and are easier to study.

While further research in the off-line organizations will be required before we can generalize the results of this study to other types of organizations with any certainty, we believe that distributed groups in a real world which use CMC to interact each other can also apply the results of this study. This research provides strong support for the idea that online games can be contexts to test the social dynamics of groups. After all, we found that organizational theories on person-job fit and attraction-selection-attrition, validated in traditional organizations, generalized to the World of Warcraft and we have reason to think that our findings about selection methods will generalize to traditional organizations.

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