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# WHY I LOVE THIS ONLINE GAME: THE MMORPG STICKINESS FACTOR

## *Pourquoi j'aime ce jeu en ligne : le facteur de loyauté aux jeux massivement multi-joueurs*

*Research-in-Progress*

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## Abstract

*With the rapid growth of the gaming industry, keeping gamers loyal is the quintessential issue. Thus, our paper focuses on loyalty towards Massively Multiplayer Online Role-Playing Games (MMORPGs). Our study incorporates the social identity theory, the theory of reason of action and gamer emotions into the equation of loyalty. An empirical study of 160 subjects was conducted to test our model. Our results demonstrated that perceived enjoyment, reputation and cohesion significantly affect loyalty. However, when all 3 are taken together, both reputation and cohesion overshadow perceived enjoyment, making the latter irrelevant in affecting loyalty.*

**Keywords:** Loyalty, MMORPG, Social Identity Theory, Theory of Reasoned Action

## *Résumé*

*Notre étude est centrée sur la loyauté envers les jeux de rôle en ligne massivement multi-joueurs (MMORPG). Notre étude intègre la théorie de l'identité sociale, la théorie de l'action raisonnée et les émotions du joueur comme explicatives de la loyauté. Une étude empirique sur 160 sujets est réalisée. Nos résultats démontrent que la réputation et la cohésion occultent ensemble le plaisir perçu, rendant ce dernier sans effet sur la loyauté.*

## Introduction

The gaming industry has been gaining ground over the past few years and there are no signs of slowing growth (Loebbecke and Powell 2002). Strategy Analytics estimates the industry to be worth USD $4 billion, and expects it to hit USD $12 billion in 5 years (Brightman 2007). In fact, gaming websites (websites containing games and/or game information) make up a large portion of the top 100 global websites in terms of network traffic (Takahashi 2000).

Despite this growth, one of the key issues facing the Massively Multiplayer Online Role-Playing Game (MMORPG) industry today is churn. Due to the huge number of MMORPGs available in the market, it is easy for gamers to switch games. In fact, only 40% of new MMORPG subscribers remained in the game for more than 2 months (Mulligan and Patrovsky 2003) and churn rate increases over time (Feng et al. 2007). This poses a serious challenge to MMORPGs in retaining and attracting new gamers to sustain their business. Therefore, the purpose of our research is not only to investigate the factors that affect loyalty, but also which factors have more weight.

## Theoretical Framework and Hypothesis Development

Loyalty to MMORPGs can be influenced by various factors. These factors range from game design and gameplay (Choi and Kim 2004) to the amount of social interaction (Ducheneaut et al. 2006) and influences brought by society (Vankatesh and Morris 2000). A lot of factors influence loyalty but some factors may have more weight than others. Upon identification of these factors, this research also aims to provide MMORPG stakeholders – game developers, product-based companies and hardware manufacturers – various ways to monetize loyalty. Likewise, game developers would also be in a better position to reduce churn.

To examine loyalty, we employed the social identity theory (Akkinen 2005), modified the theory of reasoned action (TRA) (Fishbein and Ajzen 1977) and included gamer emotions as constructs in our research model. The TRA is a well-established general theory of predicting human behavior in social psychology (Fishbein and Ajzen 1977). According to TRA, an individual's behavior is mostly predicted by his/her intention in performing the behavior. This behavioral intention is determined by the individual's attitude toward the behavior and the subjective norms surrounding the individual. We have chosen TRA as our theoretical foundation because it has been successfully applied in studying online consumer behavior (Hansen et al. 2004).

We addressed the issue of beliefs by considering the factors affecting successful MMORPGs. In that light, we believe that most gamers play for delight and entertainment. Social interaction, on the other hand, is a result of playing and leads to the creation of norms and cohesiveness. Although interaction creates cohesion, the strength of cohesion is affected more by the individual's identity (Chidambaram 1996). The presence of social interaction creates a sense of competition resulting in reputation building (Festinger 1954), which may be influenced by the gamer's emotions, both pre-existing and anticipated. Therefore, we propose five factors, namely, reputation, belongingness/cohesion, perceived enjoyment, social identity and anticipated emotions to predict user loyalty.
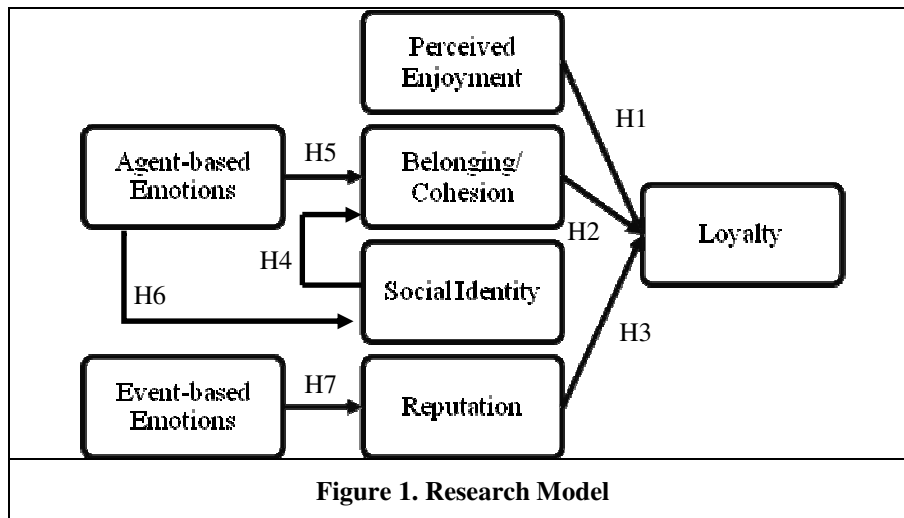


**Figure 1. Research Model**

Figure 1 shows the research model in this study. It asserts that loyalty is determined by the aforementioned five factors. The definition and rationale for the relationship of these factors are explained below.

### Loyalty

In marketing literature, loyalty is the intention to re-use a product or a service (Kotler and Armstrong 2004). Adopting the same concept to computers or the Internet, loyalty is defined as a person's intention to keep on using a service (Lu and Lin 2002). Adapting both definitions in our study, we define loyalty to be "the degree to which a user believes that s/he will continue to re-play or re-participate in MMORPGs."

### Perceived Enjoyment

Both intrinsic and extrinsic motivation, from a motivational perspective (Hoyer and MacInnis 2007), affect the amount of effort people put in during the use of computers (Davis et al. 1992). Moreover, MMORPGs are only possible through the use of computers. Intrinsic behavior is defined as the performance of a behavior as a result of pleasure and liking to perform it, regardless of the availability of any form of reward upon performance (Wood 1982). Extrinsic motivation, on the other hand, refers to the performance of a behavior in order to obtain certain rewards or achieve certain goals attached to the performance of the behavior (Hoyer and MacInnis 2007).

Extrinsic motivation is influenced by perceived usefulness. However, perceived usefulness does not directly affect behavioral intention (Hsu and Lu 2004). Computer usage, on the other hand, is affected by intrinsic motivation (Teo et al. 1999) and perceived enjoyment affects user intention to return, or exhibit loyalty (Kourfaris 2000). Therefore, perceived enjoyment is used to represent the intrinsic motivation involved in playing MMORPGs.

We define perceived enjoyment as "the degree to which people perceive playing MMORPGs to be pleasurable and satisfying." Perceived enjoyment is an important antecedent to loyalty because it highly influences the utilization (Davis et al. 1992) and attitude (Al-Gahtani and King 1999) towards multimedia applications (Vankatesh 2000). This also holds true in the context of the Internet (Teo et al. 1999). Therefore, we hypothesize:

*H1: Perceived enjoyment is positively related to loyalty.*

### Cohesion

In MMORPGs, clans or guilds are social structures or units that allow gamers to group together to achieve a common goal. Clans are classified as "amateur" (small membership) and "semi-professional" (larger membership that actively take part in competitions) (Jansz and Tranis 2007). Gamers involved in clans are more active in the game and they socialize more (Jansz and Tranis 2007). This means clan members view clan goals with higher regard. In fact, gamers join clans not because they want to be a member, but because they need to achieve a certain goal and it is better achieved in groups with other members (Lee 2007). Further, loyalty to clans also affects loyalty to games because opinions of clan members influence the norm within the clan. The pressure to conform mounts as more clan members follow the norm. This means a gamer's behavior is subject to the clan's behavior. When a clan switches to another game, the gamer will be pulled to the other game in order to stay relevant in the clan, partially because gamers tend to play games that their clan plays (Yee 2008).

In this study, we define cohesion as "the degree to which an individual is attracted to people playing the MMORPG or to his/her group/clan/guild." Cohesion refers to an individual's attraction to his/her group (Vinokur-Kaplan 1995). When people within a group perceive the presence of common goals and objectives and that these common goals and objectives are attainable through group action, then cohesion increases (Mcshane and Von Glinow 2005). Studies have shown that cohesion significantly affects participation and social presence (Yoo and Alavi 2001). Hence, we consider cohesion as an important variable in understanding the nature of groups and its influence on user participation. Therefore, we hypothesize:

*H2: Cohesion is positively related to loyalty.*

### Reputation

The main characteristic that differentiates MMORPGs from Massively Multiplayer Online Games (MMOGs) is the shared experience. This collaborative nature makes socializing and acquiring a reputation within the game very important (Jakobson and Taylor 2003). MMORPGs are, in essence, reputation games because gamers

strive to obtain a reputation not only because they want to but because this is what most, if not all, other gamers are doing. (Ducheneaut et al. 2006). An avatar with powerful items, for instance, is essential to the construction of a gamer's identity. It broadcasts the gamer's status and rewards him/her with a sense of achievement. It is this achievement, with advancement and competition as its subcomponents (Yee 2008), that motivates people to continue playing.

Gamers who are motivated by advancement derive satisfaction from making constant progress and gaining power in the forms offered by the game such as combat prowess, social recognition and/or financial superiority (Yee 2008). The fact that they enjoy being recognized for their power and superiority means they care for their reputation. Gamers also enjoy the rush and experience of competing on the battlefield or in the economy, and the power of beating or dominating other gamers (Yee 2008). The enjoyment of dominating others shows the gamer's desire to be respected and to have his/her superiority recognized. This illustrates than the gamer's desire for a good reputation. All these demonstrate the importance the gamer places on others' opinions, which eventually influences the gamer's behavioral intention to attain a better reputation (continue playing) or not (quit playing).

Reputation can then be described as recognition of a gamer or a clan in several fields, such as power, status, wealth and appearance. In the same vein, we define reputation, in this study, to be "the degree to which a person believes s/he is held in esteem by members of a MMORPG community." Reputation is an important factor in affecting loyalty because addiction to the game is not due to people but due to the image the individual obtains from other people (Putnam 2000). Therefore, we hypothesize:

*H3: Better reputation is positively related to loyalty.*

## Social Identity

The social identity theory is defined as "the individual's knowledge that s/he belongs to certain social groups, together with some emotional and value significance to him/her of this group membership" (Akkinen 2005). It consists of three components:

- *Social Categorization* – categorization of a community's members, including one's self, into groups wherein the basis can range from gender to age to profession (e.g. when a person just started playing, s/he puts himself/herself in the beginners group while the more experienced gamers in the experts group)
- *Social Identification* – association of oneself to a certain group after categorizing the community results in the creation of a self-image that matches the group's image (e.g. a person, after observing gamers of the MMORPG s/he is playing, will find a group that s/he feels comfortable with and eventually join that group. This results in him/her adapting to the group by behaving similarly with its members )
- *Social Comparison* – comparison of one's self and one's group to another individual or another group. (e.g. person A, after joining a group, will see gamers outside of his/her group as "others." This results in person A comparing himself/herself and his/her group with others in terms of performance, appearance, etc.)

Through social identification, people focus less on themselves and develop a greater sense of being part of a group. Increasing awareness is developed through the groups and individuals outside of one's group due to social comparison (Akkinen 2005). The comparison increases the individual's sense of being part of his/her group, which results in a greater sense of belonging and, eventually, cohesiveness. This cohesiveness is maintained or further reinforced by the individual by conforming to the existing behaviors and/or norms established within the group.

Social identity is a key variable in group formation in traditional and developing societies (Chatterjee and Sarangi 2004). In fact, cohesiveness reflects an individual's appraisal of his/her relationship to the group, especially towards group formation, maintenance and productivity. All these contribute to preservation of the group's existence and relationship resulting in a more concrete bond among the members and a stronger sense of belonging (Chidambaram 1996). Moreover, a shared social identity has more weight compared to interpersonal exchanges in increasing an individual's sense of belonging to a group (Rogers and Lea 2005). In this research, we define identity to be "the degree to which people believe that others perceive him/her to have a distinct characteristic/personality, regardless of whether that characteristic is derived through his/her association with a clan or not."

Many social identities produce emotions related to social hierarchies and prejudices. For instance, racial discrimination may inhibit people from joining clans they desire. Likewise, teens may refuse to team-up with older-aged people because of the impression that older people are not good gamers. This is why difficulties in group cohesion arise when groups meet physically (Hughes and Scott 2005). The virtual environment, however, allows anonymity. This characteristic can be applied to incongruities, which could arise from gender, ethnicity, job status,

etc., to reduce or even remove any inhibiting effect on communication (Hughes and Scott 2005). This means a sense of belonging is more easily developed in the virtual world than in real life because gamers are judged based on their game skills. Other characteristics such as age, gender, race, etc. have minimal effect because such information is kept private, unless gamers choose to reveal them. Although there is a possibility that clans may request for profiles of new members, the new recruit may not provide accurate data. Anonymity allows the use of false information in getting into clans people desire. And once they're accepted by the clan, they are immediately associated to the identity of that clan. This is an important factor in affecting loyalty to MMORPGs because of the satisfaction derived from a person's need for being part of a group. Therefore, we hypothesize:

>   *H4: Having an identity within the game is positively related to cohesion.*

### *Anticipated Emotions*

Anticipated emotions have 2 forms – agent-based and event-based. An agent-based emotion is the affective reaction to another's action based on a judgment of praiseworthiness or blameworthiness. These emotions are developed after an event has occurred (Ortony et al. 1988). Therefore, judgments are influenced by the results of the event.

The individual's positive face needs (need of being connected and approved) and negative face needs (need of being independent) can then be addressed according to his/her formed perceptions and judgment on both the game and its gamers. These perceptions then influence the individual's social identity and attitude towards the gamers and thus affect his/her sense of cohesion/belonging. Therefore we formulate the following hypothesis:

>   *H5: Positive agent-based emotions are positively related to cohesion.*
>   *H6: Positive agent-based emotions are positively related to social identity.*

Event-based emotions, on the other hand, are affective reactions to anticipated events that have consequences for the self, such as hope, satisfaction and disappointment (Ortony et al 1988). These emotions are developed according to the individual's expectations. They affect the individual's perception of his/her probable performance within the game resulting in the probable reputation s/he will have. Therefore, we hypothesize:

>   *H7: Positive event-based emotions are positively related to reputation.*

## Methodology

We conducted an extensive review of current literature to familiarize ourselves with online gaming, various consumer behaviors models, social theories and concepts. Adapting from the research instruments of existing studies, a survey (see Appendix I) was then conducted with 160 respondents to assess our research model. The survey was distributed to gamers in Internet cafes. No particular game was focused on. We chose games that had the same gameplay/genre. The games were those similar to World of Warcraft, Ragnarok and the like. This scope drives the behavior to play by making available and relevant the respondent's attitude towards playing (Fazio 1990). In addition, gamers of similar genres are more likely to form clans to accomplish their goals. People may identify, categorize and compare themselves and/or their clans to other individuals or clans. These games provide gamers with a reputation, which is broadcasted to other gamers through the game system or by in-game word-of-mouth.

Research has shown that although people might have the perception of games appealing to only people under 18, the mean age of MMORPG gamers are in the mid 20s (Cole and Griffiths 2007). Therefore, only results from respondents aged 18 to 30 and were currently playing MMORPGs were considered for our research.

The questionnaire was developed using validated instruments from literature. A Likert scale ranging from "Strongly disagree" (1) to "Strongly agree" (7) was used. Some of the questions were taken directly from literature while some were modified to fit our research. The questions are all in relation to the constructs of our research model. Finally a regression analysis was employed to validate our model.

## Data Analysis and Results

The constructs were first assessed for reliability and validity. After ascertaining that the constructs could meet parametric requirements of the regression test, the hypotheses were tested using structural equation modeling (SEM). All statistical tests were carried out at a 5% level of significance.

### *Reliability and Validity*

The constructs were assessed for reliability using Cronbach's alpha (Cronbach 1951). A value of at least 0.7 indicates adequate reliability (Nunnally 1978). Table 1, below, shows all constructs to have adequate reliability.

| Table 1. Reliability of Constructs | | |
| --- | --- | --- |
| **Construct** | **Number of Questions** | **Cronbach's Alpha** |
| Perceived Enjoyment | 3 | 0.77 |
| Cohesion | 3 | 0.73 |
| Social Identity | 5 | 0.88 |
| Reputation | 2 | 0.77 |
| Agent-based Emotions | 2 | 0.78 |
| Event-based Emotions | 3 | 0.84 |
| Loyalty | 2 | 0.74 |

The model's validity was tested using structural equation modeling (SEM). SEM, a confirmatory statisitcal analysis, rather than exploratory, is used to examine multiple and interrelated dependence relationships. It takes into account the measurement error of the variables (Chan 2005). The analysis results indicated that the factor covariance matrix is not non-positive definite, thus validating our model (Byrne 2001). To assess the model fit, in view of the fact that chi-square statistics are affected by sample size and very unlikely to meet accepted levels, the Comparative Fit Index (CFI) was used. The CFI is 0.891 indicating an adequately close fit (Brown 2006).

### *Structural Model*

We examined the model by testing the hypothesized relationships among the various constructs as shown in Figure 2, below. The model has an $R^2$ value of 0.56 indicating that the overall model was more than satisfactory in explaining the variance (Falk and Miller 1992). The results support the influence of Event-based Emotions ($\beta$ = 0.678, $p < 0.001$) on Reputation, supporting H7. Agent-based emotions, on the other hand, influences Social Identity ($\beta$ = 0.729, $p < 0.001$), supporting H6. Likewise, Agent-based Emotions ($\beta$ = 0.217, $p < 0.05$) and Social identity ($\beta$ = 0.533, $p < 0.001$) influence Cohesion, supporting H4 and H5.

The results also showed that Perceived Enjoyment ($\beta$ = 0.463, $p < 0.001$), Reputation ($\beta$ = 0.635, $p < 0.001$) and Cohesion ($\beta$ = 0.628, $p < 0.001$) influence loyalty, when taken independent of each other. However, when taken together, Perceived Enjoyment ($\beta$ = 0.07, $p < 0.5$) is not as influential as Reputation ($\beta$ = 0.388, $p < 0.001$) and Cohesion ($\beta$ = 0.361, $p < 0.001$), supporting both H2 and H3 but not H1.



*p < 0.05, **p < 0.01, ***p < 0.001

**Figure 2. Research Model with Results**
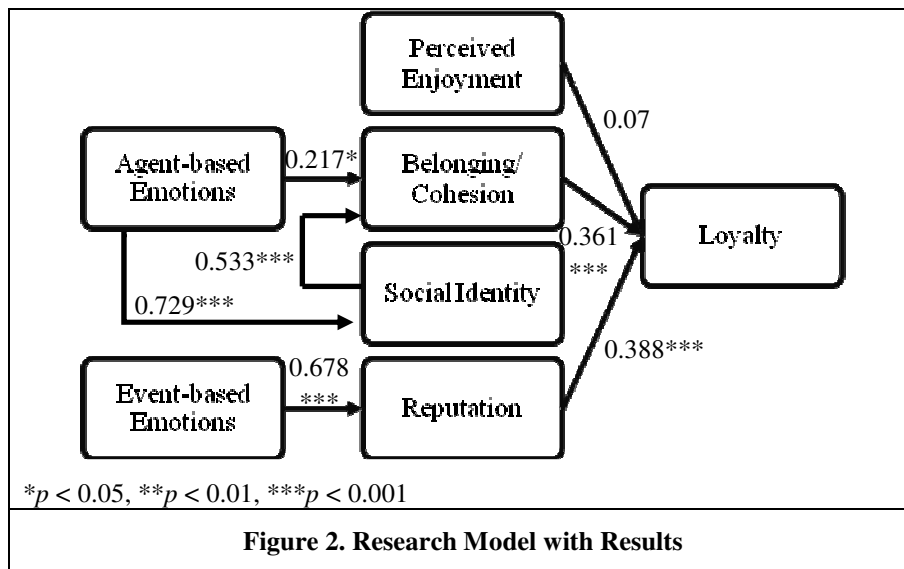
*Descriptive Statistics*

Table 2, below, shows the means and standard deviations of each construct. The findings show that users, on average, responded positively to playing MMORPGs. Majority of the respondents were males (82.5%) and single (98.1%). In terms of age, on the other hand, majority of the respondents were aged 18-20 (60.6%).

| Table 2. Descriptive Statistics | | | |
|---|---|---|---|
| **Construct** | **N** | **Mean** | **Std. Deviation** |
| Perceived Enjoyment | 160 | 5.52 | 1.01 |
| Reputation | 160 | 4.51 | 1.55 |
| Cohesion / Belonging | 160 | 4.80 | 1.28 |
| Agent-based Emotions | 160 | 3.17 | 1.05 |
| Event-based Emotions | 160 | 5.28 | 1.37 |
| Social Identity | 160 | 4.88 | 1.53 |
| Loyalty | 160 | 5.05 | 1.48 |

## Discussion

This study reveals that our model can predict, or even influence, loyalty towards MMORPGs. Agent-based emotions affect both social identity and cohesion because agent-based emotions influence an individual's perception of and attitude to certain objects. These objects can be gamers or social groups within the game. Perceptions on social groups, positive or negative, affect the individual's social identity. The individual's perceptions will influence him/her in choosing which group to associate himself/herself with. In addition, agent-based emotions also determine the individual's attitude towards other members of the MMORPG community. Positive emotions lead to positive attitudes towards others, which create good relationships or higher levels of cohesion among gamers, and vice versa.

Social identity, on the other hand, increases cohesion. When an individual is part of a social group and s/he values the relationship, s/he will be more willing to put more effort in maintaining a good atmosphere and a good relationship among its members. This willingness minimizes the occurrence of events that can negatively affect the relationship. It creates a constructive environment that enables the development of a certain bond over time.

Conversely, event-based emotions significantly influence reputation. Event-based emotions are related to human concerns – respect, safety, and self-esteem. In fact, an individual will be more motivated to perform acts that s/he identifies to be able to address these concerns (Desmet and Hekkert 2002). In MMROPGs, the event is the widely adopted perception that being wealthy, powerful or good-looking increases reputation. This desire then motivates the gamer to put greater effort in reaching his/her goal to achieve the level of reputation s/he desires.

Reputation also positively affects loyalty. Respect from others is a result of having a good reputation. This in turn boosts self-esteem. When an individual has established a good reputation or is in the process of doing so, s/he has already probably obtained the respect of others. With respect, that individual is unlikely to part the community because s/he may lose his/her reputation. And building another good reputation elsewhere requires significant effort. In fact, the individual will try to maintain or further better his/her reputation by immersing more in the game.

Cohesion being important in influencing loyalty shows the role it plays in community growth. According to Maslow's hierarchy of needs, once people have attained individual needs, they will seek belonging needs. People would then find the need to perceive a sense of attraction to the community and/or to its members. Past studies have shown that cohesion significantly affects participation and social presence (Yoo and Alavi 2001). This collectiveness would then enhance cohesion and consequently increase a user's loyalty to MMORPGs.

Perceived enjoyment, as a form of intrinsic motivation, significantly influences loyalty. People will play MMORPGs if they perceive it to be enjoyable. This finding is consistent with previous research that showed intrinsic motivation to influence the use of information technology for entertainment purposes (Moon and Kim 2001). However, when perceived enjoyment, reputation and cohesion are examined to determine their influence on loyalty, both reputation and cohesion overshadow perceived enjoyment. This means that individuals give more importance to reputation and cohesion that greatly influence loyalty towards MMORPGs. In fact, perceived enjoyment, according to our results, has become irrelevant.

## Implications

### *Implications for Game Developers*

This research provides MMORPG companies with a better viewpoint about gamer expectations. People do not play games just for entertainment. Instead, a lot of social and emotional factors are involved. Knowing these factors, game developers would be able to develop better game designs. Moreover, game developers would be able to better answer questions on game functions and features.

Social factors affecting MMORPG loyalty, likewise, cannot be ignored. Factors like agent-based emotions, social identity and cohesion have shown that, nowadays, MMORPGs are not just platforms for gamers to play on, but also a place where they try to satisfy social life needs. Being able to translate these virtual world relationships into real world relationships through the organization of special events just for these gamers to meet up physically is beneficial for both the gamers and the game developer. Through this, gamers would have another medium to interact with each other. Therefore, inter-gamer and inter-team interactions are very important factors in the game's success.

Cohesion in MMORPGs can be cultivated by participating in clans (Jansz and Tranis 2007). Developers must allow clan formation and implement clan-based competitions to better facilitate team play. Developers should also promote clan formation and help new gamers source for clans according to their preferences in terms of interest, locations, etc. Developers should also design games that can build strong relationships among its gamers. A way to do this would be to provide individuals with strong opinions who are able to influence user participation. Avatars, on the other hand, are direct representations of the gamers. Developers must provide a platform for gamers to personalize and customize their own avatars for them to enhance their reputation in terms of appearance.

Experienced gamers should also able to purchase special items that will set them apart from new gamers. And through the use of competition charts, top gamers will be broadcasted to everyone. This enhances a gamer's reputation and thus increases his/her sense of enjoyment in being one of the best in the game. Giving gamers a sense of pride whether through how their avatars look like or through charts would also fuel the interest of experienced gamers to carry on playing the game and for new gamers to strive to reach the level of experienced gamers.

### *Implications for Advertisers/Product-based Companies*

Through this study, product-based companies would be able to better understand gamer demands and tastes. Since reputation has a strong impact on loyalty, product-based companies may bring into the game certain products that allow gamers to differentiate themselves from their peers. This would often come in the form of appearance such as clothes and/or weapons designed and branded by these companies. In addition, they may also reward gamers with real life freebies or discounts when gamers accomplish special in-game missions sponsored by these companies.

Likewise, product-based companies may also take advantage of the impact of cohesion by sponsoring or organizing special events that target different clans. Examples may come in the form of international gaming competition, new game launches or even simple gatherings that bring together the gaming community.

## Conclusion

In this study, we presented a framework for understanding the factors affecting loyalty towards MMORPGs. We focused on re-participation or re-playing as explicit evidence of loyalty, it does not take into account the inherent characteristics of loyalty. To illustrate, an individual may patronize a certain game. To the public, s/he seems to be extremely loyal. However, s/he may be providing negative reviews or comments about the game. In reality, s/he could potentially just be playing that game out of familiarity, convenience or the simple lack of game choices. And the very day that a new game that is able to satisfy his/her needs is released would be the last day s/he ever played his/her old game. Therefore, loyalty goes beyond just simple re-participation. One would need to scratch below the surface to discover whether an individual is loyal or not. In this light, future research may test the underlying characteristics of loyalty, perhaps, through the amount of investment or personal sacrifice committed to the game.

Nevertheless, our analysis still showed that reputation and cohesion are far more important antecedents to loyalty as opposed to perceived enjoyment. In addition, the emotions gamers feel and expect to feel are also significant factors in affecting the cohesion they experience and the kind of reputation they have. Moreover, the importance of having a social identity shows that MMORPGs are "third places" for informal sociability that are particularly suited in addressing an individual's social needs. And the fact that social identity also indirectly influences loyalty demonstrates that people are more loyal to games that can bridge their social capital.

## Appendix 1: Survey Questions

Perceived enjoyment (Davis et al 1992) (modified to fit research)
1. Playing online games is exciting.
2. The actual process of playing online games is pleasant.
3. I have fun while playing online games.

Reputation (Yee 2008)
1. It is important for me to be popular within the game.
2. If I am already popular, it is important for me to retain my popularity.

Belonging/Cohesion (Hunton et al. 2001) (modified to fit research)
1. I like the people playing online games.
2. I believe I fit in well with the online game community.
3. I believe I can make friends with people playing online games.

Social Identity
1. My clan/guild members and I have a tight "us" feeling (Siitonen 2007).
2. I enjoy being part of a successful clan/guild (Yee 2008).
3. My relationship with my clan/guild members affect my willingness to continue to play the game.
4. I care about other gamers recognizing my clan's/guild's accomplishments (Yee, 2008).
5. Increasing my clan's/guild's reputation encourages me to continue to play the game.

Agent-based Emotions (Yee 2008)
1. I am happier with my achievements in the games I play than in real life.
2. I feel sad when I or my clan/guild does not achieve something we set out to achieve.
3. Think of the most frustrating experience you had in the past week. Did it happen in real life or in the game/s you play? (choices: real life, game, or about the same)
4. Think of the most painful experience you had in the past week. Did it happen in real life or in the game/s you play? (choices: real life, game, or about the same)

Event-based Emotions (Yee 2008)
1. Accumulating resources, items and money in the game are important to me.
2. Acquiring rare or more expensive items is important to me.
3. Becoming more powerful within the game is important

Loyalty
1. I will play online games whenever I have a chance to (Lu and Lin 2002). (modified to fit research)
2. Online games are overall satisfactory enough to be played again (Choi and Kim 2004).

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