



# Factors determining player drop-out in Massive Multiplayer Online Games

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## ABSTRACT

A large number of people worldwide play free-to-play Massive Multiplayer Online Games (MMOGs) on a regular basis. Considering the significant amount of investment required in the early phases of game development, product managers aiming to quickly attract players deploy several in-game premium features which can be purchased by players willing to leverage their gaming experience. When the gap of advantage between premium and non-premium players is quite noticeable, it may lead to the lack of game fairness, resulting in players dropping out. This study aims at understanding the relevance of the drop-out factors that can be controlled by product managers, with an emphasis on game fairness when compared to other factors. A survey was sent to English-speaking communities of a MMOG. Results show that 53.9% of the variation in dropping-out is explained by the significant predictors analyzed: latency/performance issues, in-game features, community, service/support team and game fairness. Latency/performance issues and game fairness are the most relevant drop-out factors. By focusing on drop-out factors that can be controlled by product managers, this research contributes for decision making in the development of free-to-play MMOGs.

## 1. Introduction

Massive Multiplayer Online Games (MMOGs) are videogames played online over the Internet where a large quantity of individuals can interact simultaneously in persistent worlds (which exist regardless of whether players are logged in the game or not) through their self-created characters/avatars, with other players' avatars as well as with the gaming software [1,2].

In the free-to-play (F2P) MMOG industry, product managers are required to offer players premium paid features as a primary source to finance all the resources used to develop such category of games. However, pushing it too hard – that is, having lots of premium features in important game mechanisms or creating premium features that grant huge advantages for those who decide to invest on the game (premium players) – leads to a lack of game fairness in the perspective of non-premium players. Those players may eventually stop playing the game and thus this sense of game unfairness may increase the drop-out rates. Moreover, there seems to be no tendency to find an equilibrium and so interests of shareholders towards profitability may conflict with users' interests [3–5].

Notwithstanding, no studies were found concerning the relation

between the lack of game fairness and (other) drop-out factors on MMOGs. The present research is an attempt to fill such gap by furthering research on this issue in the perspective of the players' motivations to play MMOGs, thus helping to unveil unnoticed aspects on the development of MMOGs related to drop-out factors. By understanding what impels players to leave MMOGs, product managers will be able to manage their efforts on players' retention more effectively. From a managerial perspective, game developers and publisher companies with balanced shareholders and players' interests may forecast a decrease in the drop-out rates, which means that more players will be investing on them and the results of the companies will be improved [6,7]. In consequence, players will be much more engaged in the online communities when feeling that their feedback really counts towards the development of the game, translating it into an increase of user satisfaction. Those types of games can be, in that moment, creative and mindful hobbies and the communities will be certainly places for proactive discussions, inevitably leading to positive electronic word-of-mouth [8].

This research aims to establish a relation between product managers' decisions and the motives behind players quitting F2P MMOG and how the advantage gap between premium and non-premium

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players affects the drop-out rates. Thus, the research questions are as follows:

- What are the main drop-out factors related to MMOG which may be controlled by product managers?
- Are the drop-out factors common to premium and non-premium players?
- What is the level of importance of game fairness (gap between premium and non-premium players) when compared to (other) drop-out factors?

## 2. Background

### 2.1. MMOGs overview

Within MMOGs, there are several game categories. From these, MMORPG, MMORTS and MMOFPS are the most known initials [9]. MMORPG stands for Massive Multiplayer Online Role-Playing Games (e.g. World of Warcraft, Ultima Online), which represent the most common type of MMOGs, with focus on character development, player versus player (PvP) and player versus environment (PvE) combat, existence of communities within the game (e.g., tribes, guilds, clans) and item collection; MMORTS means Massive Multiplayer Online Real Time Strategy (e.g., Tribal Wars, Clash of Clans), with focus on strategy and tactics, so that the progress of a single player is very dependable on the game styles and relationship with others; MMOFPS are the initials for Massive Multiplayer Online First Person Shooter (e.g. Counterstrike, Project Blackout), where the main goal is to shoot other players within 3D maps [2]. One other genre that has been gaining more fans over the years is MOBA (Multiplayer Online Battle Arena), which may explain why League of Legends deposed World of Warcraft in terms of revenues in 2014.

Previous studies have been conducted to understand the evolution of business/revenue models in the MMOG industry, concluding that we are experiencing a shift [3,10]. In the beginning, subscription-based (or pay-to-play – P2P) MMOGs were the most popular ones and game developers would collect their earnings by charging players on monthly fees. Although World of Warcraft observed an increase on the number of subscribers, the games that thrive through a subscription revenue model are declining and its tendency is to being pushed by F2P MMOGs – this free way of making money lies basically on the inclusion of premium in-game features, which players can use by purchasing virtual game currency, and advertising [11]. SUPERDATA RESEARCH INC. [12] estimates that F2P MMOG will generate \$17.1 billion, while the pay-to-play continues its fall to \$2.7 billion.

### 2.2. Game fairness

Notwithstanding being a billion dollar industry, a successful MMOG requires a huge initial investment and continuous expenditures to maintain the game running. These facts obviously influence the decisions of those responsible for the product, the product managers. Thus, to assure sustainability, one of the primary concerns of managers is the game longevity, given that business must generate revenues to finance the initial investment and support running costs, thus maximizing revenues while minimizing costs [3,13,14].

The aforementioned running costs include the distribution of content and game servers (usually to maintain a MMOG the game developers make updates regularly, which include feature rebalancing, creation of new features and bug fixes), service infrastructures and supporters to provide in-game support and keep game communities alive (customer service platforms and those who manage them are expensive), and marketing costs in order to attract new customers and retain players. That's why Alves and Roque [15] state that “every MMOG requires a steady and continuous flow of income to keep it running, since the cost structure also involves a continuous flow of,

usually proportional, maintenance costs. That income comes from players that are actually playing and paying, and therefore, a MMOG needs a constant and large population or number of players to grant its survival.”. Hamari [3] also support this argument.

Thus, pressured by shareholders, who aim at short-term results, product managers' primary solution to finance all the resources spent on free-to-play MMOG is the addition of so-called premium features. However, pushing the need to finance the game to the limit by adding increasingly more premium features in core game mechanisms or creating premium features that grant huge advantages for those who decide to invest on the game (paying players) may break the players' vision of a fair game [3–5].

Although the majority of players seem to agree upon a free-to-play MMOG need to earn money to survive, the game must still possess certain elements of fun and fairness, otherwise players will switch in mass to other games they consider having these characteristics. In fact, some players argue publicly in community forums that those who want to participate in the whole experience of a F2P MMOG will have to spend more money on in-game currency than they would on P2P games and thus gain plenty advantage against non-premium players. Lin and Sun [5] go on to consider that in P2P games players are all equal, whereas in F2P games players are divided on premium and non-premium players. The latter case evidences the unfair phenomenon of “one game, two experiences”. Some studies mention that free game play is heavily influenced by those who spend money, creating inequality. As an example, Lin and Sun [5] state that, although the “balance” idea is vague and dependent on the context, the players' sense of fairness is imposing a balance in the games – meaning that “all player types should have equal opportunity to survive in and enjoy all game worlds”. This implies that product managers must find equilibrium between the shareholders and players interests.

### 2.3. Players as customers

In competitive markets, such as the online gaming industry, successful companies are the ones that best meet the needs of customers and find balance between long and short-term goals, aligning the interests of several stakeholders [16]. As stated by Kinnunen et al. [6], “(...) successful product development usually requires the interaction with several stakeholders, both internal and external. (...) To achieve product success, it is essential to understand both the objectives of stakeholders and the means through which their interest can affect the design and development.”

However, each organization has always a wide range of stakeholders, which means that some stakeholders have more salience than others in product development. Since product managers have limited time and resources, they must determine stakeholders' salience and manage stakeholders based on it [17]. Furthermore, Hillman and Keim [18] found that stakeholder management is positively associated and leads to improved shareholder value creation – in this study shareholder value is represented as Market-Value Added (MVA = market value – capital).

Many authors agree that the most salient stakeholder should be the customer [6,19], since the market is composed by this entity. Actually, according to Jobber and Ellis-Chadwick [20], meeting the objectives of stakeholders is achieved by satisfying customers, hence emphasizing the concept of customer orientation. Customer-oriented organizations set as a top priority customer needs and satisfaction, thus believing that the organization must have a dynamic interaction with the customer [21].

In order to have that dynamic interaction with customers and collecting benefits from it, companies must apply a specific business strategy supported by technologies and systems. Customer Relationship Management (CRM) is a business strategy which tends to grant the maintenance of profitable long-term business relationships with customers [22]. This customer-oriented management philosophy brings

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