Advanced Strategic Browser-based Massive Multiplayer Online Game: A Game Suggestion

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Abstract. The continuing grow in worldwide internet access is allowing the emergence of a new category of multiplayer games. These games, played over the internet, are able to integrate many thousands of players in a mutually interactive environment, are usually called MMOGs (Massive Multiplayer Online Games), and are experiencing an extremely fast growth. Some of the MMOGs do not need the installation of specific game software in the players' computers. They are played simply from an internet browser, and are known as BBMMOGs (Browser-based MMOGs). In this paper, we present a quick overview of the current status of MMOGs and BBMMOGs, and briefly discuss a game model that represents a significant advance over the present state of the art in terms of strategic war/economy BBMMOGs. Implementing this game model seems challenging but realistic, considering the present technological environment, and seems relatively affordable in terms of development costs.

1 Introduction

The continuing grow in worldwide internet access is changing some of the "old" computer games paradigms. Traditional computer games were played solo. At present, most commercial computer games allow for either single playing or "internet playing" – meaning that those games can be played over the internet in small groups of (usually) up to 8 players. A very recent change is the emergence of a new category of multiplayer games, played only over the internet and able to integrate from a few hundreds to many thousands (or even millions) of players in a long-lasting mutually interactive environment. Those new games are usually called MMOGs (Massive Multiplayer Online Games) and are experiencing an extremely fast growth.

1.1 MMOGs

In traditional computer games, many game worlds would naturally tend to involve the interaction between a large number of players, but that was prevented by the available technology. In these situations, the games simulated computer opponents (with better or worse artificial intelligence) for single human players or, in internet playable games, stipulated a relatively low arbitrary limit for the number of human

allies/opponents (usually, up to 8). However, some game models – e.g., war simulation FPS (First Person Shooters), or RMSWG ("Realm Management" Strategic Wargames) – result much less interesting without the "natural" solution of accepting human control for each game-world individual or faction. MMOGs solve this problem by using the internet to interconnect, in long-term virtual worlds, a very large number of players (usually, an "open" number, in terms of game design).

For the players, the main advantage of the MMOGs are the game models in which allies and opponents are human players (not simple computer-generated virtual entities) with whom it is possible to interact (in a long-lasting, attractive, fantasy setting)[1]. Some disadvantages are the requirement of an internet connection to be able to play, and the need to devote regular attention to the game – since the fantasy world goes on developing even if some players cannot connect and play for some time. For the developers, the main advantages of this kind of games are the huge appeal they have to many gamers, and the possibility of charging a price for the access of each player to the virtual world of the game (ensuring a continuing income after selling the game). The main disadvantage is the need to create and maintain a support structure (servers, internet bandwidth, game support) for the duration of the game's life.

MMOGs are experiencing a very fast grow in popularity. The number of players and of available active games has grown exponentially in the last few years. Considering recent information available on Mmogchart[2] (May 2006), Blizzard's World of Warcraft (WoW) is the most successful MMOG and has reached 6.5 million active (paying) players, while several other highly successful MMOGs have about 1 million active players. Considering this level of success, it is no surprise that the number on MMOGs under development is also increasing at a very fast pace [2].

According to Mmogchart, at present, the most common type of commercial MMOGs is the Fantasy RPG (Fantasy Role Playing Game) – a class that includes WoW and most of the other MMOGs. FPS (First Person Shooter) games run a distant second in terms of commercial MMOGs success.

1.2 BBMMOGs

The internet-based server-client architecture of the MMOGs allowed the development of BBMMOGs (Browser-based MMOGs). These games use simple HTML pages for interface or, at most, include small browser-based software clients (for example using Java code). For the players, these games have some advantages over shop-bought MMOGs. One of them is the direct availability over the internet of a large number of very diverse games that can be freely evaluated (usually needing only a simple registering procedure). Another advantage is the possibility of joining a game from any internet-connected computer (an important point, since the virtual worlds of these games are always active and so the players tend to need to frequently visit the game). Game developers have the obvious advantage of reaching a global market without having to sell physical game boxes. In BBMMOGs the whole business is performed over the internet: advertising the game, player registering, playing, paying a fee for

[1] These sustained, long lasting, fantasy worlds lead to a level of player involvement that goes much beyond what was typical with the traditional short term computer games [1].

[2] Mmogchart (www.mmogchart.com) is the most popular site tracking the MMOGs' evolution.

continuing game access. This, and the fact that (due to technology limitations) BBMMOGs can't use high-performance moving graphics, and so tend to require a less demanding development effort, means that a group of individuals with the appropriate skills can develop a reasonably competitive game with limited investment. This approach has been tried by many independent game developers, resulting in a recent "explosion" in the number of BBMMOGs available to any player connected to the internet. Many of those games, however, are of limited quality and have considerable difficulty in attracting enough paying players[3] to produce an overall profit. In fact, many of those independent developers gain a significant proportion of their income advertising several products in their game sites.

Most BBMMOGs are either RMSWG or "management RPG"[4] – not the Fantasy RPGs dominant in store-sold MMOGs. Some reasons for this difference are the limited graphical capabilities of BBMMOGs and simple historic tradition (most of the first MMOGs were Fantasy RPGs, and their success inspired a host of similar games).

The basic technology involved in BBMMOGs has two significant differences from the one used in commercial MMOGs: The absence of powerful client software in the players' computers and the less demanding requirement in terms of game database refreshment (due to the intrinsically slower game mechanics usually involved). Thus, on the server side, the BBMMOGs tend to have a massive tabular database (containing the game status of all players), a game engine that regularly updates the database (processing the game-world developments, the players' orders, and the interactions between players) and a "screen generator" (usually based on PHP programming) that prepares each browser-based screen view for each player that is online. On the players' side, the game only needs an internet browser and, eventually, a small browser-based client (when present, this kind of small software client tends to reduce the game internet traffic and the performance requirements of the server).

2 An advanced BBMMOG

The most common type of BBMMOG is the RMSWG (Realm Management Strategic Wargame). However, the games of this type presently available in the internet tend to be very simple propositions, with an interface based on text and numeric tables (usually enlivened by low-bandwidth static images). Those games are highly codified representations of some fantasy world. As such, they are based on very specific sets of rules that cannot be induced on the basis of "common sense" and general knowledge about the involved fantasy world. This means that, for every new player, those games present a significant initial barrier in terms of learning effort.

The development of a sophisticated simulation with a more "natural" behaviour, mostly based on "common sense" rules, would be an interesting alternative approach. We propose the development of a game with those characteristics, and believe it can be implemented within the present BBMMOGs' technology constraints. Our suggestion is for a medieval RMSWG with a realistic realm-management interface: A

[3] Usually, these independent games are free to play, but the players that accept to pay a small fee get some game improvements and some in-game advantages over the non-paying players.

[4] Example of RMSWG: www.ogame.org. Example of "management RPG": www.lagoonb.net.

king governing from his palace. This ruler would have access to "war rooms" (with maps, tables, etc.) and to "councillors" (that would help learning the game and would reduce the detailed orders' workload). Orders (to units, fortresses, etc.) and feedback reports would travel by "messengers", and resources would travel by "caravans". The game-world speed would be relatively slow (to better reproduce a real world, to allow a less demanding online schedule for the players, and to reduce processing workload in the game servers). The "delayed order/report"-based interface, in conjunction with the relatively slow game speed, would also limit the necessary internet bandwidth.

This kind of sophisticated game-world simulation requires a vast set of operational rules and of database tables, but each rule requires little processing power. From the players' point of view, the set of rules never needs to be fully learnt: the essential game-world characteristics/rules can be induced (in general terms) through actual play (from interaction with the councillors and from observation of the realm evolution). If needed, specific rules can be consulted in a simple online help system.

The proposed game can easily grow from a start with a reduced number of players, since new players can be incorporated by adding new realms in concentric rings. This way, players with older, stronger, realms are concentrated in the center of the map, and the newer players, with less developed realms, are on the outside (near others with similar strength). With this approach there is no need for end-restart game cycles: the virtual world can have an open-end lifetime.

Commercial, store-sold MMOGs are very expensive to develop [3]. However, BBMMOGs tend to be much less demanding and, in fact, many of them are created by small groups of independent developers. Some estimates published on the net[5] point for a global development effort of some 10-15 person-years for an average present-day BBMMOGs, and for some 2-3 persons needed on a permanent basis to maintain and upgrade the game. These requirements point to a need of some 5000 to 20000 (the actual number is, naturally, dependent on several parameters) active, paying, players to produce a positive return on investment. In a commercial setting, however, after the development of a first game, the development costs of a "game family" can be significantly reduced, since the game engine of this kind of games can easily be adapted to other BBMMOGs, based on totally dissimilar fantasy worlds[6].

References

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[5] For example on http://www.gamestotal.com, the site of a very small independent company that developed some relatively successful BBMMOGs.

[6] As an example, the game engine of the proposed Medieval RMSWG could be easily adapted for a Science-Fiction RMSWG that could attract a different set of players.