

Business Model of Long-term Browser-based Games – Income without Game Packages

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Abstract: Browser-based games played directly in the web browser are a new business environment, where traditional business models for digital games needs to be replaced with new one. There are no game packages to be sold in the first place, and availability of free options makes browser-based game with monthly costs very uninteresting for the players. Therefore neither: “make game – sell game” cycle or monthly costs based subscriber model are eligible for those. These games have a unique player group, which consist of very experienced players and huge mass of new players. In this paper, we describe business model used with long-term browser-based games. Sources of income in this business model are selling extra features to the players and advertisement space to the advertisers. Since browser-based games are an emerging genre, the importance of the presented business model is growing fast.

Keywords: business model, browser-based games, long-term browser-based games, web games, online advertising, online business.

I. Introduction

Browser-based games played directly in the web browser are an environment, where traditional business model for computer games, make game – sell game, does not work: there are no game packages to be sold in the first place. Today product sales continue to account for most of game software revenues, however online gaming service revenues are growing fast [7].

Browser-based games are an emerging genre and most likely also the future of all computer games. Since the entire software industry is experiencing a paradigm shift towards web-based software [19]. This transformation forces business model of gaming industry to change. Technology development has always affected business models and business model changes have happened already when information and communication technology affected business practices and companies were forced to change their business architectures [18].

In addition to sold game installation packages, monthly costs are also common source of income in multiplayer

games, especially massively multiplayer online role-playing games (MMORPGs), however at the moment monthly costs are not suitable for browser-based games. There are hundreds of free available browser-based games and since a multiplayer browser-based game needs lots of players, it would be nearly impossible for a monthly costly browser-based game to gather gaming community.

Since birth of the browser-based games, the game developers have invented new sources of income. Long-term browser-based games include a persistent world, which is advantageous for forming huge online communities, since the same players are playing the game long time [26]. The huge online communities formed alongside multiplayer browser-based games form huge pools of potential customers. Although the core game must remain free to attract new players and keep old ones, additional features can be sold to the players. Usually only a small percentage of players buy these extra features, but since the player numbers of browser-based games are massive, sold extra features form very notable income source. Advertisement is also common in browser-based games, usually adverts are displayed in the same page with the actual game and the game itself is almost never disturbed with pop-ups or other interruptions. Browser-based games can also be deployed inside an application platform, which removes need to create separate account for the game and to gain benefits from advertisement features of the application platform.

In this paper, we describe business model of long-term browser-based games. We go through in detail sources of income, and discuss also deployment of long-term browser-based games. The critical beginning phase can be sometimes eased by deploying the game inside an application platform. After the deployment the game enters upkeep phase, where it has to be maintain the player population. This paper is based on our earlier conference article [28], however it has been extended with several technical details and background discussion of business models and related work have been added.

The rest of the paper is structured in the following way. In Section 2 we present general business model for long-term browser-based games. In Section 3 we discuss selling additional features to the players. In Section 4 we discuss advertisement possibilities present in browser-based games. In Section 5 we go through deployment of browser-based games, and in Section 6 a phase in the life span after the deployment. In Section 7 we consider the reasons why players quit playing long-term browser-based games. Finally, we present related work in Section 8, and some concluding remarks in Section 9.

II. Business Model

A concept *business model* has existed over fifty years and it is widely used in academic research. However, there is no commonly agreed definition of its meaning and several academic papers present their own definitions. In this paper, we use definition by Rappa:

“In the most basic sense, a business model is the method of doing business by which a company can sustain itself -- that is, generate revenue. The business model spells-out how a company makes money by specifying where it is positioned in the value chain.” [16]

In this paper, we aim at defining a general business model that is used with long-term browser-based games. The defined business model presents how a company deploying a long-term browser-based game makes money.

Long-term browser-based games form a unique domain that combines very experienced players, who have play time several real-time years, with large group of new players. Browser-based games do not need software installations; therefore there is lot of potential players. Many of these players have never bought traditional computer games and have no intentions to do so. Although many of these new players quit the game very soon, the accessibility of the genre ensures continues mass of new players.

The fact that installable software is not used in the domain makes selling game packages impossible. Therefore game companies of this domain must rely on other sources of income. Similarly, monthly costs, usually an important source of income in online gaming, plays a minor role in long-term browser-based game domain. As mentioned earlier, availability of hundreds free ones makes it nearly impossible to a monthly costing long-term browser-based game gather player community. Although sometimes extra features sold in these games have monthly costs, but also in this case, the game itself can be played for free, which is needed to gather and maintain the player population.

The general business model of long-term browser-based games is presented in Figure 1. Items presented in model are discussed in more detail in the following sections.

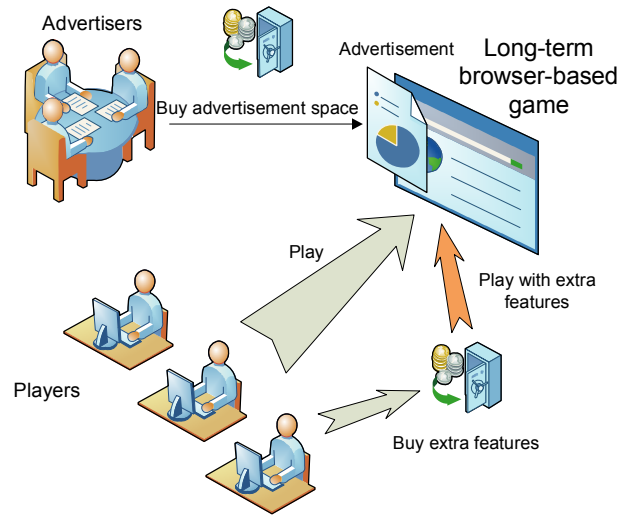


Figure 1. General business model of long-term browser-based games.

The first important source of income in long-term browser-based games is extra features sold to the players. Although only a small percent of the players purchases these, in the massive player population of the game, it is a sum worthy of attention. These extra features are bought with real money and give the player benefits into the game. The gained benefits can enrich the gaming experience, or give in-game advantage to the player.

The second lifeline to the genre is advertising, which is very important in several ways. Selling advertising space is important source of income for the company owning a long-term browser-based game. In addition, in the deployment phase of the game, lot of advertising is needed to gather players. First couple weeks after release are the most critical. Which of these sources is the primary one depends on the case; the company using the business model can prioritize sources as it wants.

III. Selling Extra Features

It is common for browser-based games with persistent world and including competition against other players that the player can buy extra features with real money. What is actually bought and how it affects the game depends of the game type.

A. Extra Features

Extra features divide into two categories, i) features that enrich the playing experience somehow, and ii) features that give in-game advantage to the player.

For example, in Hattrick [12] buying Hattrick Supporter gives access to features, which enrich Hattrick. Features do not give advantages in the game, but make the playing more comfortable. It includes team management tools, team personalizing tools, community tools, organizing tools and statistics. Especially personalizing tools of Hattrick Supporter are important for experienced players, since those let the player upload team logo, name the fan club of the team, write press announcements and make the team feel more alive in several other ways. Banner ads are also not shown for players

with Hatrnick Supporter. Although direct in game advantage is not gain buying Supporter, analyzing tools can be used to find out optimal formations against upcoming opponents. However this can be done also without supporter using more time and effort. Hatrnick supporter feature has monthly costs, which resembles subscriber business model [16].

In Hatrnick it is not possible to use real world money to buy in-game advantage. However, as mentioned before, this is not always the case. For example, in Travian [23] the gold bought is used to in-game boosts, for example gold can be used to gather resources faster, to complete buildings faster or to enchant fighting capability of own troops. When a player registers to Travian he or she gets small amount of gold for free. This kind of introducing payable extra features is a commonly used method for luring the players buy these later.

In the extreme case, the extra features might be almost mandatory for playing the game. For example in The ContinuumTM [21] the player can play the game eternally using units gained in the beginning. However, if he or she wishes to gain other units, those must be purchased.

The ContinuumTM is not for casual gamers. It is a complex game combining elements from a strategic turn-based war gaming and RPG-like character development and the collectible card games. It can be presumed that a player, who is willing to learn to play very complex game, is also ready to finance to succeed in it.

Extra features that are in reality not extra features, but their purchasing is mandatory for succeeding must be used with great care. They can be very good profit source, since each player must purchase those. However, they can easily ruin playing if the game is all about “who has the most money”, and expel casual gamers, which most likely mean end for a browser-based game aimed for casual gamers.

Sometimes extra accounts can also be sold as an extra feature. For example ForumWarz browser-based role-playing game [11], which is a parody of Internet culture, allows the player to register only once and if the player wants to play with other available character classes he or she needs to buy a new account.

Reliable and robust micro-transaction system is essential for browser-based games, and it is usually purchased from outside vendor. However, there are some free options available for certain platforms. For example Unity tokens [25] is a free micro-transaction system for developers using Unity 3 game development tool [24].

B. Merchandise

In addition to game features, physical items can be sold to the players. For example, Hatrnick sells also items rarely sold inside a browser-based game, for example caps and T-shirts. The Hatrnick shop is shown in the Figure 2. The shown electronic commerce, Hatrnick shop is located inside Hatrnick.

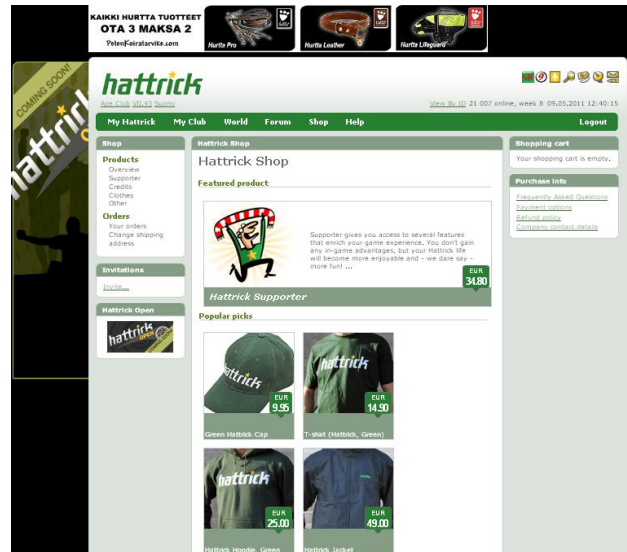


Figure 2. Hatrnick shop (Copyright Hatrnick Ltd, used with permission)

At the moment, merchandising is rare at browser-based games. However, there is a potential for this kind of activity. Good examples from other type of games can be found. For example, characters from very successful mobile game Angry Birds [3] by Finnish video game developer Rovio Entertainment [17] has been commercialized extremely well. There are soft toys, clothes, shoes, calendars, birthday cards, etc. There is also upcoming animation series from Angry Birds. Figures 3 and 4 show different kinds of Angry Birds merchandise products.



Figure 3. Angry Birds soft toys.



Figure 4. Angry Birds merchandise products.

Merchandising can also be long-term strategy. Usually the games itself must be popular to make the merchandising strategy successful. However, Rovio aim is to make Angry Birds trademark so popular that it can live its own life and success independently from the games [20]. Rovio plans also to release new character sets based on their new games.

IV. Advertisement

Advertisements are another important source of income in browser-based games, even if the core game is almost never interrupted with pop-ups or other advertisement. Many games require concentration or accurate timing on mouse clicking, for example in Travian, attacks needs sometimes to be launched on correct second for the best outcome. The first waves of troops destroy the city defenses and one second later city conquering chief or buildings destroying catapults hit. Launching several waves of attack troops in few seconds needs the very skilled use of browser tabs. Experienced players have destroyed villages in seconds. Understandably pop-up advertisement would easily ruin the game entirely. Instead of distracting the gaming experience, commonly the advertisements are laid on sides of the screen, an example of advertisement in Hattrick is shown in Figure 5.

Figure 5. Example of advertisement placing in Hattrick (Copyright Hattrick Ltd, used with permission)

In Hattrick, the game mentioned above, shown advertisements are selected based on cookies, for example their language will be same as the user. However, no personal customer data is ever shared with the advertising companies and the player information is used only by the game itself.

If the game is located inside an application platform, for example Facebook social utility [9], advertisement features of the application platform can be used efficiently and amount of developer work needed from game launching company is decreased. There can be advertising related features in application platform account also. For example, some of those let the user can define what kind of products he or she is interested and only advertisements of the specified product groups are shown to the user.

Players also attract other players to play certain games. This behavior emphasizes inside application platform, since players can send requests to their friends. This kind of spreading is natural inside the application platform, because many application platforms are social networking platforms, and therefore reflect the social relationships of their users [15].

V. Deployment

The most critical moment in the lifetime of long-term browser-based game is the first weeks. Long-term game needs lot of players and success of the game is heavily depending whether the game can keep the first players and gather more. Therefore lot of visibility is needed to the launched game. This can be achieved by advertising in suitable forums, for example in web pages of similar games or in gaming portals that contain several games.

After a player community has started to form around the game, the second server can be started running another instance of the game. For example originally German game Travian has been translated to new languages, currently over 40, and there are several servers running simultaneously with each language. It is usually an advantage to start the game in the group of the first ones, and the player number of a single game cannot be increases endlessly. Launching of a new server needs advertisement too, but luring the players to a new instance of well-known game is much easier task than launch of an entirely new game.

Nowadays many players start playing browser-based games by playing games on a social network. Study reports that [22] 20 percent of U.S. population ages 6 and older report having played a game on social network in the past three months, which equates to 56.8 million U.S. consumers. 35 percent of social network gamers have never having participated in any other type of gaming before. Although many social network games are short-term and simple, those are common first step towards playing long-term browser-based game. Major finding is also the fact that 10 percent of social network gamers have spent real money playing these games and 11 percent indicate that they are likely to make so also in the future. Considering the number of players, these are sums worthy of attention.

The shift from playing simple social network games to playing long-term browser-based games, is not difficult. Many players start by playing social games and later move to more complex long-term browser-based games. Nowadays some long-term browser-based games are deployed inside an application platform, for example Facebook social utility [9], and this can be advantageous for the game. The users of application platform are potential players for the deployed game. Application platform also automates the registration process needed to play long-term browser-based game, and the user can start playing immediately. Possibly the application platform also automates micro-transaction system, as there might be some payment system already in the application platform. As mentioned earlier, there can also be features for advertising present in the application platform, which assist the deploying game company arranging advertisement selling.

Currently there is a very wide range of technologies that are used in development of browser-based games [27]. This wide range of different technologies is typical for all web application development at the moment. This arises from the fact that originally the Web was not designed to be a programming environment. When web applications have evolved in quality closer to their desktop versions, the underlying technologies used to implement those have not developed at the same rate. This has made web application development complex and cumbersome task.

The technical decisions made, for example the programming language used to implement the game, can affect on what application platforms the game can be launched and also how difficult the game is to upkeep. For example, performance can be affected if underlying technologies cannot be effectively scaled for the player numbers.

In the future, as the technologies used to implement browser-based games evolve more application platforms, game engines and other frameworks will appear. These will have at least minor effects to the business models used in the domain. They also open business opportunities for companies developing these software tools.

VI. Upkeep Phase

After gathered enough players and a living gaming community around the game, the company cannot just forget the game and start making a new one. Certain amount of development must be done to maintain the players, or at least bug fixes are essential. Too fast proceeding modifications to the game rules can wake the opposition, therefore those should be avoided. The players usually fear that the fundamentals of the game, reasons why they started playing, are destroyed by modifying the game mechanics. The player community is a good source of information to the game developers, when planning further development of the game. Although there are always players who do not share the sentiment of the majority, the community is a valuable information source for the game developers.

The successful browser-based games or even the whole

developer company can sometimes be sold. For example, the success of Club Penguin [5], led to that the developer company, New Horizon Interactive was sold to the Walt Disney Company in August 2007 for the sum of \$350 million [29].

Alternative to selling the whole game is a sponsorship deal. It is more commonly used in short-term browser-based games; a gaming portal pays to the developer for having their logo in the game. The sponsorship deal also generates lot of visibility for the game, as the sponsoring site promotes the game. However, a company developing short-term browser-based games uses a different kind of business model, because it needs several games, instead of deploying and maintaining only one. Several games are needed, because, most likely the player plays the game only short amount of time, and moves to the next game. Therefore developing several games and deploying those with a sponsorship deal can be very profitable strategy with short-term browser-based games.

VII. Why Players Quit Playing?

The ability to maintain the player population is very important for long-term browser-based games. Since, if there are not enough players to make the game interesting, it is obvious that the rest of them will quit too.

The study [13] among over 8200 players of Travian suggests that flexibility, easy-in easy-out gameplay was one of the two primary reasons to play browser games. The other primary reason found in the study was social relationship involved in the game play. Therefore it is important that gameplay of the game supports these issues.

There are several reasons, why players quit playing a browser-based game. Most likely the players quit very soon, he or she only tries the game and is perhaps attacked by an experienced player. This leads to an assumption that the game is bad and the player just quits the game.

However, sometimes even the most successful players quit the game, although they are leading the game and dominating hundreds of other players. One reason for this is the additive nature of long-term browser-based games.

Long-term browser-based games are addictive and the game can demand huge amount of real world time for successful playing. This time demand is one reason why people quit playing massively multiplayer online games [1]. Active playing of time consuming browser-based game can easily interfere with the life of the player in the real world. Game designers should consider the game mechanics carefully; there should always be something to do in the game world if the player wants to play the game at particular moment. However, being constantly online should not give so much advantage, that players who do not want to be logged in constantly cannot play effectively, causing these players to quit playing. These game mechanics balancing issues are presented for example in [10]. Presented issues are based on creation of a long-term browser-based simulation game: Living City, and observing beta-testing period almost a year, during that time almost ten thousand players played the game.

Generally, a good game design helps the upkeep phase of the game, because player population is easier to keep.

Another important issue identified in the paper was “no end to the game or lack of clearly defined goals” [1]. When a new player starts the game, there are lot of new interesting things to learn and areas to explore. However, the initial fascination quickly fades unless new challenges appear. In strategic games this problem appears usually after the player has survived from the critical beginning phase. Although this should be the time when the actual game begins, the epic battle for the virtual world, the player can be overloaded by micromanagement of his or her constantly growing empire. Simple game features can save some players from quitting, for example the possibility of queuing buildings and units to be build. However, in some games this is left to the extra features that must be purchased with real money.

The game can offer “clearly defined goals” by creating quests for the players. Although those do not perfectly fit into the strategic games, those can be used. The player can be offered a reward that can be used in the game, for example a special item to his or her hero, from completing some task. The task could be, for example a management task: building fifteen cities or an action task: destroying monsters from nearby fields. In role-playing games there are lot more possible quests, because the player is controlling a smaller group (commonly also only one) of characters. Also the fantasy settings of role-playing games allow greater variation in quest. Anyway quests add clearly defined goals into the game and can help maintaining the player population.

New long-term browser-based are launched weekly and it is common for active players to try out these new games. Usually the players quit these soon and concentrate again on their favorite games. However, sometimes a new game is so good, that the player decides to continue playing. Over time, the player decides to give up the old game since more time is needed to play the new game.

This phenomenon is hard to prepare. To maintain players, the game should be “the best game there is”. However, even if the technical aspect of the game would be perfect, players like different things. There can always appear a new game that a certain player likes more than old ones.

One attempt to fight this problem is rewarding the players. If a player benefits from playing somehow, it is more likely that he or she will continue playing the game. For example browser-based game Dark Orbit [8] offers prizes of real money from winning special events. However, generally use of real money for rewarding the players is very rare in browser-based games.

Presence of cheating in browser-based game has also negative impact to the player interest. If some players gain unfair advantage by cheating, for example by using macros to automate repeatable task, it quickly causes non-cheating players to quit the game. Although often the player community helps to find cheaters, for example by reporting cheating players, naturally security cannot be left entirely to the player community. Developing good security features that prevent cheating are a benefit for the game deploying company.

VIII. Related Work

The need for special business models for digital business is an admitted fact. *Software is not like other business* [6]. There are many examples how software technology and software companies differ from traditional manufacturing and service industries. “In how many businesses does making *one* copy or *one million* copies of your product cost about the same?” [6] In addition, to different kind of business models used in the field, software business also differs from traditional industries, because the range of possible products and services is almost infinite. In the following we present researches describing business models for software business.

Al-Debei et al. [2] define business models for the world of digital business. They state that rules that governed the traditional world of business are questioned in this emerging world of digital business. They argue that dynamic environment, high level of competition and uncertainty have created a gap between business strategy and processes which requires new ways of thinking about business models. One of their findings is that business model concept is relatively young and has been used in various contexts. Its definition, place within the business organization, and boundaries have not been properly defined. Their work attempts to clarify the business model concept.

Chen [4] presents a theoretically grounded and practical approach to designing viable business models 2.0 to creating real business value with web 2.0 for web information services industry. The study proposes to integrate the resources of industries, governments and academics to create a platform of web 2.0 business models. Although the end users of long-term browser-based games, players, create content for those games simply by playing them, there is room for ideas of Web 2.0. For example, only a few games let players write blogs and other content inside the game. Enthusiastic players could actively create new content for the game as it progresses. Possibly this user created content could also affect to the rules of the game instead being only background. However, if this is possible most players want to gain benefits using it and this fact must be considered carefully.

Lyons et al. [14] consider emerging business models for online services and their implications for how services are delivered, used, and paid for. They say that technology advances and rapid growth of online services have induced a significant number of new and inventive web-based service models and delivery methods. We consider that the paradigm shift of software industry towards web-based software is one significant technology advance creating new web-based services. When computer games transform to from binary software to browser-based software, new business models are created to replace old ones. Also the sources of income present in business models evolve and their significance changes. It is possible that in the future, for example monthly costs are relevant for long-term browser-based games also. Although, those are not profitable at the moment. The presented business model for long-term browser-based games is one of these models born to exploit browser-based environment.

IX. Conclusions

Long-term browser-based games are a special business domain. Their players consist of a group of experienced players, and continuous flow of new players. In the business model of long-term browser-based games, sold game packages and monthly costs must be replaced with new sources of income. Common ones in this domain are selling advertisement space to advertisers and extra features to the players.

There are also new sources of income for long-term browser-based games, which are not yet widely exploited. For example, merchandizing is one these potential sources. If a game company can create a strong trademark and identifiable characters into the game, they have possibility for good cash flow by creating merchandise products around the game. Although there are examples from other forms of digital gaming, creation of merchandise products has not yet become common in browser-based game genre.

In this paper we described a business model used in long-term browser-based games, and discussed the lifespan of these games. We also discussed reasons why players quit playing long-term browser-based games and described possible solutions for these issues. The whole software industry is experiencing a paradigm shift towards web-based software, and computer games are no exception. Therefore the presented business model for long-term browser-based games will eventually include a larger part of computer games. It is also certain that people will invent new ways of exploit this unique business domain in the future.

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