

Virtual economy in on-line game environment

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Abstract

This paper is about determining if an economic system can work in an online game environment, especially in MMORPG (Massively multiplayer online role-playing games) and if this virtual in-game economy affects the outer real economy. The paper is divided in introduction of the issue and theoretically-practical part. Introduction part is important to learn about this not new phenomenon, which are online games and what conditions must be met to consider the virtual world as an economic system. Results focus on two different MMORPG, its economic system and how can players affect it. It is interesting that online worlds are not so different from normal worlds, in economic way. But they have one difference and that is the inflation. This negative economic aspect differs from online and real economy and affects not all members of the economic system.

Key words: *economy, online games, MMORPG, World of Warcraft, currency,*

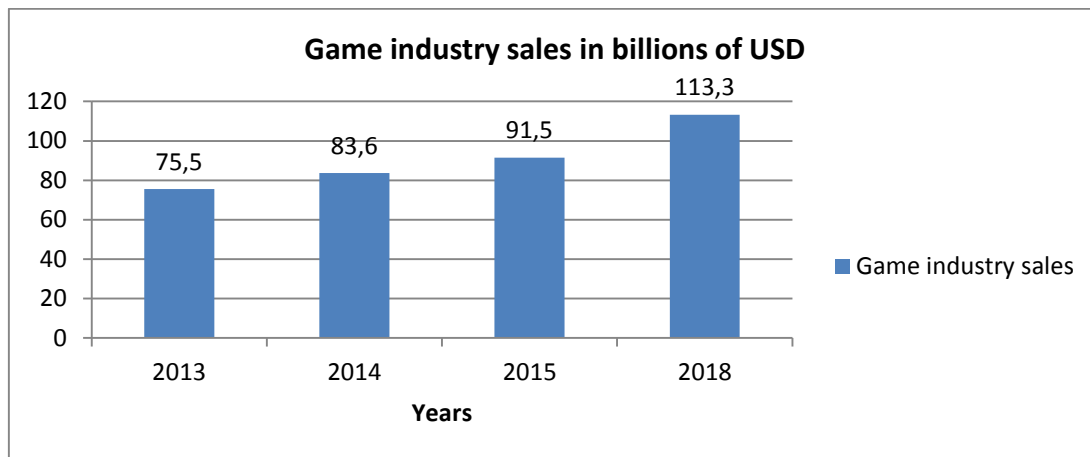
JEL Classification: *A19, D03, D84, P49*

1. Introduction

Online games a part of our life and they are not only for the young generation. With more use of smart phones new and new applications or “apps” are created. It is more visible that when we have nothing to do, waiting for the buss, lecture, for someone, we use our smart phones to, directly say, “Kill the time”. Applications became most popular for every smart phone user and their development is increasing, because we will have everything on hand reachable only with one click. This is just a small part of the game industry. The most valuable business are online games, which are more detailed and need better equipment, e. g. tablets, laptops, consoles or computers.

Greater popularity and availability of the Internet began in the year 2000. This year was an important milestone in the game industry. In the year 2010 and increased popularity of Facebook came and more people started to play games on this social page. Although browser games are popular, computers and consoles are still leaders in the game industry. According to statistics, in the year 2014 part of games played on computers were as follows: browser games 8 %, MMORPG 21 % and classical games (offline) 9 %. In the year 2015 these numbers decreased by 1 % for each game kind. But this drop has not affected game incomes, on the contrary the income increased. On the following chart we can see incomes of the game industry in the last years with the prediction for 2018. (Anonymous, 2015)

Figure 1: Game industry sales in the past years



Source: <http://www.bencont.sk/app/cmsSiteAttachment.php?ID=47&disposition=inline>, Bencon weekly report, p. 2,

MMORPG (Massively multiplayer online role-playing games) became very popular in the last two decades, but since in 2004 the MMO World of Warcraft was launched, created by Blizzard Entertainment (BE), their popularity rose. These type of games are very useful to examine a whole market and economy in their world.

According to dictionary a MMORPG is any story driven online video game in which a player, taking on the persona of a character in a virtual or fantasy world, interacts with a large number of other players. (Dictionary.com, 2016)

We can divide these games in three categories:

1. Player does not have to pay for the game (free download, free play time) – so called “free to play games”, (e. g. League of Legends)
2. Player does not have to pay monthly payments (players only have to buy the game – DVD or digital download from the e-shop), (e. g. Grand Theft Auto 5)
3. Player has to pay for the game (DVD or digital download) and monthly payments to enter the realm of the game. (e. g. World of Warcraft)

It is a normal fact that selling a game brings the most value for a company which made it. But games which are so called free-to-play can earn a lot of money for the company by inter-game sales or small transactions made by the players. This system of micro transactions is typical for the most played MOBA game (multiplayer online battle arena) League of Legends developed and published by Riot Games. (Wikipedia, 2016)

For better understanding of these game environments we must define the virtual world.

According to Bell (2008, p. 2) a virtual world is a synchronous, persistent network of people, represented as avatars, facilitated by networked computers.

Virtual worlds can only exist if the previous conditions are met. If all these conditions are met a virtual world exists and therefore an economic system can also exist in it. There are also some terms that an economy must comply.

Economy has to include production, consumption and scarcity (Samuelson, Nordhaus, 2007)

Production can be performed by every character in the game world, but each is restricted only to learn some specific creation professions. Therefore a competition between players exists. It is the same as in the normal world that no one can be a specialist in every field. In the game

world production can be understood also as collecting items from killing monsters to earn a so-called “loot”. Loots represent items which a mob (computer controlled non-player character /NPC/) drops after it is killed by a player. These items have also their rarity which makes them valuable for players. As the difficulty of a mob rises, the better loot a player can get. For the MMO is typical that some mobs are so hard to defeat that players must work in groups to defeat the enemy and divide the loot. Looted items can be sold to vendors (NPC) – NPC which offers a shop for buying and selling items, or to players for game currency or trade for other items.

Items which players use may be bought, created and *consumed*. These items can be divided in quickly consumables (potions, food, enchants, etc.) and durable items (armour, weapons). Durable items can break over the time playing. Therefore a few services are included in every game world, e. g. upgrading, repairing, enchanting).

In-game items have five main attributes. First of them is rivalry – objects are at some time held by one person or small group of people. Second attribute is interconnectivity. It means that possession of an item may be affected by the ownership and use of other items. Third of them is permanence – object remains in the possession of its owner, even when it is not in use. Fourth attribute is that here exist secondary markets, thus virtual items can be made, traded, bought and sold. The last one is added value. In other words, owner of a virtual object can appreciate it. (Blazer, 2006, p. 137)

Scarcity means a limited quantity of a resource factor of production or output. (Rutherford, 2005) People want to consume more and more but they cannot be completely satisfied. Also consumers are limited by the resources and they must optimize their consumption. This fact applies to virtual worlds too. In virtual world are common and cheap items which can be easily bought in vendor's shops. Better and rare items are harder to find or drop and thus more expensive to buy.

An example from Ultima Online shows where only rare colour of a horse multiplies its price. (Carli, 2007)

The budget of a player limits its desire for consumption. As in the real world this constraint is affected by the time and ability of a player to earn and spent money (or in the game some form of currency). In MMORPG the quality of in-game equipment (such as armour, weapons, mounts, etc.) differs for each player. This is sign of scarcity.

All these three mentioned phenomena take place in the virtual world and therefore we can confirm that an economic system in this world exists.

2. Methodology

Analysing a whole game environment to exactly know how the economy in this virtual world works needs a lot of time and a deeper research. In this paper we focus on the edge of this phenomenon and only in the theoretical form and how can this in-game economy affect the real economy. Every game differs with the virtual world and even with characters which exist in it. Let us focus on two different game types: free to play game – *Lineage II* and a game for which the player must pay for the game and monthly payments – *World of Warcraft*.

For this research we consider standard (original) game servers, not the so called high-rate servers, where players in a short period of time can acquire a lot of game currency.

3. Results

The examination of the economic system is difficult, because in the already mentioned MMORPG *World of Warcraft*, the game consist of two different factions in the same world. The one is the Alliance and the second is Horde. Players from each faction can meet only on the battlefield and do not share the same market – vendors. Even the auction houses are spate for each faction, but there is only one auction house in a specific game place which offers to trade goods between these factions. These fractions are the whole time in war, therefore in this world two different economic system work for every faction.

The game *Lineage II* consists only from one game environment where the market is not divided to more factions. Players share same shops, vendors, mobs, etc.

In every MMO game a so called PK – player killers exist. This PK represents people (gamers) who focus not to kill mobs, but other players. In some games when a player is killed by other player in the virtual world through their avatars the killed character can drop personal items currently equipped. This form of loot can be described as stealing in the real world however the robbed person must not be killed to steal something from it.

From the introduction we already know that an economic system must satisfy three different conditions – production, consumption, scarcity and that these types of games (MMORPG) meet these conditions.

Now let us breafly focus only on two mentioned games, how we can enter them and how can they influence the outer real economy or at least the financial lives of players.

World of Warcraft (WoW)

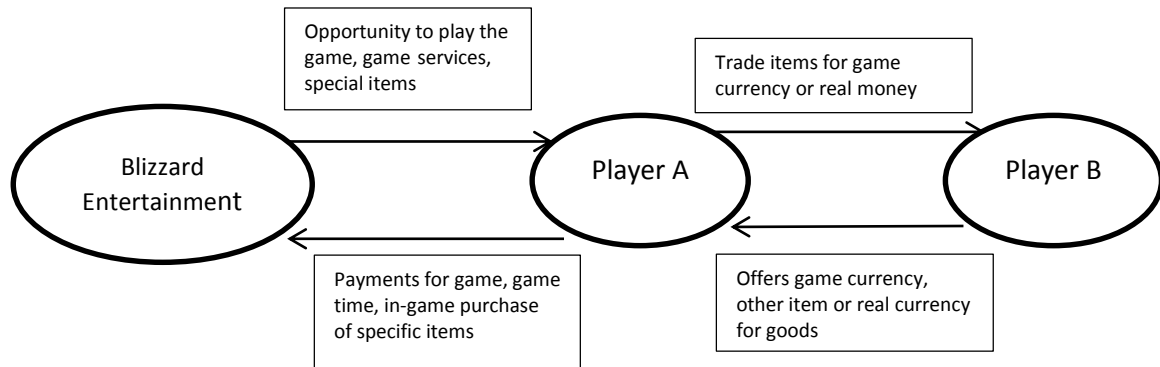
This MMORPG can only be played when the user pays for the game (DVD or digital form). It is an extraordinary game; because when someone wants to play it on official servers, he/she must firs buy the whole game (it means the basic game plus data discs). Blizzard Entertainment has a great marketing, because it offers so called battle chests (all game data discs with the exception from the latest) for a good price (standardly lower than the latest data disc). For playing on official server a monthly payment is required to enter the game. There are some special cases when a player earns free game time, but this will not affect the game economy. In the game the player has the opportunity to buy something for his/her character in the game, e. g. a special mount, companion, pet, helms. These payments represent the income for BE.

Other side are items in the game as mentioned in the Introduction. These items have their rarity. When people play the game they earn game currency – golds for killing mobs, completing quests from NPC and by selling items to vendors or via the auction house. Earning gold in the game differs from player to player, because everyone has not the same time for playing. On the other hand, players must have a lot of luck to drop very rare items and thus the players can be divided to blessed players with more luck and those with less luck. Luck is something very specific in each game, not only in MMO. In some games items which raise the luck of a character to drop better items exist. In the real world something like this does not exist.

When someone wants to sell these items to another player or more players it is the best way to use the auction house. Auction house works as in real life. A player deposits something to sell, determines the selling price or the buy-out price (a plyer can the item buy immediately, but standardly for higher price as the offered). Other players bid more and more gold to buy the item. But items can be bought through other way – for real money. Some players live only from playing a game (so called farming) to earn game currency or collect very rare items to

sell them for real money. These transactions go not through the game developer, but only between players. It is a question if these transactions deform the company's business. In our opinion these transactions do not affect the company, because players have to pay for the game if they are playing it, or not; drop rare or common items; sell them to vendors or via auction house. This scheme represents how these transactions work.

Scheme 1: Financial transactions between company-player and player-player



Source: own proceedings

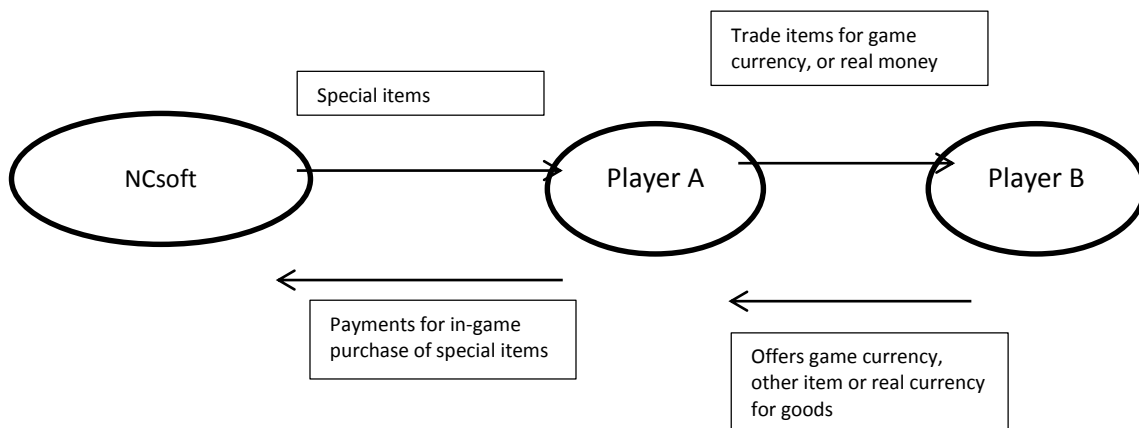
Another fact is inflation. Can this real economic phenomenon also exist in the game world? Inflation means a sustained increase in the general price level of goods and services over a period in time.

We can transform this description for the game environment: price of items rise, when there is more and more currency in the economy. Therefore when more and more players earn more gold, items became more expensive and the price level rise. For players who play very long it means not a great difference when they want to buy something. But it is devastating for new ones. One difference in the virtual inflation and the real is curious. The virtual inflation does not affect vendor shops, only items bought and sold by players via trade between two players or auction house. In the real world the inflation influence the whole economy – shops, individuals, companies, etc.

Lineage II

It is a free-to-play MMORPG developed by NCsoft. It was not from the beginning a free-to-play game. As for playing WoW, players had to pay monthly for entering the game. Purchasing the game was for free all the time. This game consists only from one market and vendors. All the criteria for a game economy are met here as described in the Introduction. The difference between WoW and Lineage II is that NCsoft does not earn money from players for playing the game. Players only spent money, when they want to buy something special for their game avatars, e. g. special mount, item, armour, etc. But transactions among two players are possible as in WoW. In this case it is possible that NCsoft loses some income for items which are sold to players from players not for game currency, but for real money.

Scheme 2: Financial transactions between company-player and player-player (free-to-play MMORPG)



Source: own proceedings

4. Conclusion

According to these facts it is visible that the in-game economy can be affected by persons (players) in the game and also from the real world with real money. As mentioned before, the game industry is a developing industry and represents a main part of the world economy. Millions and millions of players play these games and thankfully not all of them use these outer transactions (buy game items for real money). For some players it is more comfortable to pay real money for an item as farm enough game currency to buy it from a player directly or via auction house. In perfect world only players who have best preferences to play the game and are able to achieve great success in it would play these games for work and players who are better in earning real money will only pay for better in-game items. This can be described as comparative advantage. Each person makes that work which he/she has better assumptions for.

This topic is not very often discussed. There are more economic issues which can be explored in the virtual economy of games. The paper was about a brief introduction in these modern virtual worlds and how can real economic phenomenon take place in this environment. For further research the behaviour of players is also interesting to analyse, because they all make the virtual world come to live. Without them these worlds would be only empty computer programmes.

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