

The Impact of Allowing Real Money Trading in MMORPGs

ABSTRACT

The online game has become very common platform in today's game. Massively multiplayer online role-playing games (MMORPGs) are the example. In MMORPGs, player can interact with one another within a virtual world and assume the role of character. Although player is offline, the virtual world in MMORPGs still evolves which is the same as the real world. In most MMORPGs, real-money trading (RMT) or the use of real currency in exchange of virtual goods and services is prohibited. However, there are many players conducting RMT illegally. This leads to the question what is the impact of allowing real-money trading in MMORPGs. MMORPGs are one of the main contributors of online gaming industry which accounts for \$14.9 billion in 2013. It is important to improve the competitiveness of this sector in gaming industry. The research will be done using game theory in the form of sequential game by let game company player first and player play later. With the help of survey, player's payoff will be assign easily. As a result of the research, in the first phrase, there is a positive impact on MMORPGs if RMT is allowed because players think that there is an opportunity for them to make money. However, when there are more sellers than buyers, the game is unbalance. Those who used to support RMT cannot sell their virtual goods so they exit the market or game. Therefore, game company can enjoy profit only in a short-run. Having RMT is good for some players but in the long-run it might ruin the game mechanism so game company should avoid doing so. Moreover, if game company want to prohibit RMT, they should make game content more fun and try to find optimal level of challenge for player otherwise player will seek for RMT.

INTRODUCTION

There have always been two main different worlds where people might have faced in their life time; the actual world and the virtual world. The actual world is the world that we are living while the virtual world is another world which seemingly real but generates on the computer network. There are many differences between these two worlds. However, they are also sharing something in common which is the existence of the market.

In the real world, we care so much about the economy and we try so hard to prevent things to happen because such things may threaten our well-being. However, in the virtual world is different. We do not care that much about the consequences of the virtual economy because they are not real. Therefore, the effort we try to put into managing these two economies is different.

Massive multiplayer online role-playing games (MMORPGs) are the example of virtual world where its economy has everything just like in the real world; demand, supply, market failure, inflation, and etc. The form of the market in MMORPGs mostly is the competitive market. With or without market intervention, the virtual economy can go wrong and when it does players might quit being part of this world and searching for another one. In this sense, virtual market with no player cannot exist because the game operator will lose profit and the game will fail.

The revenue generated by game depends on the number of players in the game. The reason is very simply; the more players in the game, the better opportunity for firm to receive revenue from advertisement, subscription fee, in-game item sell, etc. To keep players to play game, good virtual economy is preferable.

Firm strategies that have been used to manage the virtual economy can be considered as firm's strategic behaviour. In this case, allowing real-money trading in the virtual economy will be taking into account since there has been the integration between two worlds. Therefore, it increases the significant of real-money in the virtual market. However, the effect of allowing real-money trading is not yet identify but it believes to be positive because it creates opportunity for players to earn some money. If the effect is positive then the game will gain more players and firm can enjoy more profit.

This paper will be focus on the impact of real-money trading in MMORPGs since there is a linkage between real world and virtual world. In this sense, we will be able to see consumer's behaviour that reacts to such strategy which its finding can be very useful to the real world economy. In other word, we can use virtual economy as an example of real world. Therefore, we can manage it in more proper way.

THE ESSENTIAL KNOWLEDGE BUILD-UP FOR UNDERSTANDING RMT

The big issue that most MMORPGs have been facing is the real-money trading problem (RMT). Real money trading is the use of real currency in exchange of virtual item or virtual currency. Due to many reasons, game operators tend to ban RMT. Therefore, RMT is conduct illegally in the black market. Conducting any RMT is under the risk of getting ban by game company. However, many players have been involving with RMT before. Due to this, we can conclude that there is a demand for RMT even though there is a chance of getting ban.

From the above, it is essential to understand the nature of RMT so this literature review will try to answer the following questions.

- 1) When does real money trading occur?

2) Why game company do not want real-money trading?

The understanding of these questions will give an essential knowledge that will further lead to more understanding on our study.

When Does Real Money Trading Occur?

Before we take any further step, we need to understand real money trading. By definition, real money trading (RMT) is use of real money in exchange of virtual goods such as in-game currency, characters, items and etc. Most MMORPGs today do not allow RMT and player who get caught doing so will be suspended or banned by the game. Therefore, most RMT occur illegally in the black market. Although the RMT has been made illegal by the game company but some player still involves with RMT.

By take a look at the puzzle of puzzles theory developed by Castranova (2003), we can apply it with MMORPGs. The satisfaction player gets from playing game is denoted by S while R and C is reward and challenge level, respectively. W is optimal challenge level for player where α and β is coefficient.

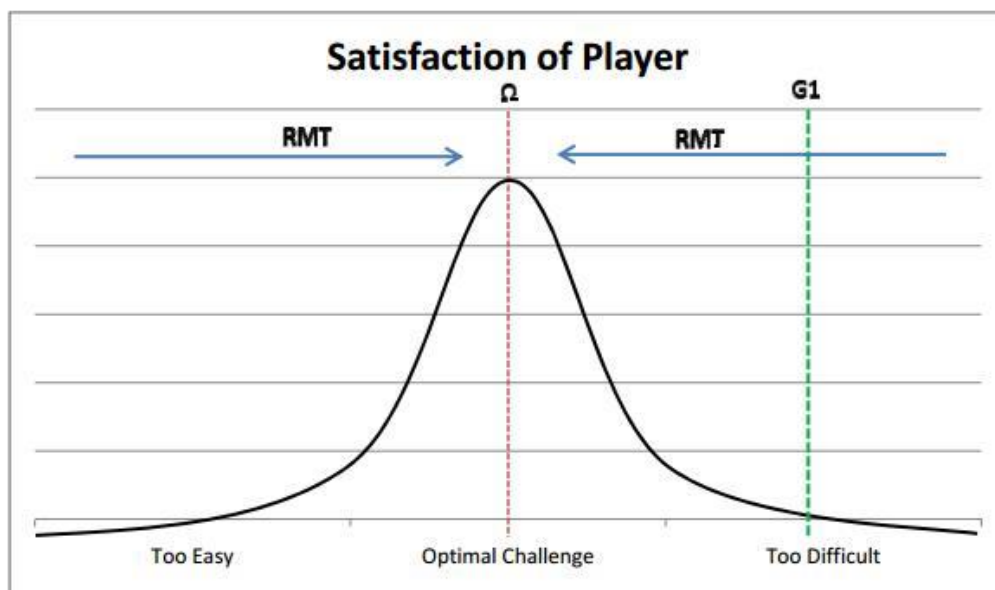
This equation was further developed by Urschel (2011). He takes into account of the time cost (opportunity cost) and socialization. When player plays a game till some point of time, player may develop the relationship with other player and this build up socialization.

This is Urschel's inequality in predicting the tendency of conducting RMT transaction.

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Where α is the goal measured in term of real money, ρ is the estimated hourly production in term of real money, S is satisfaction of playing game, SC is socializing and OP is opportunity cost. Therefore, Urschel concludes that RMT will occur if the time spending on achieving the goal multiplied by the satisfaction of playing game and socializing is less value than the same amount of time doing something else. Graphical illustration developed by Starodoumov (2011) is representing below.



Y-axis represents the satisfaction of player while x-axis represents the challenge level. The challenge level, $G1$ represents the too difficult challenge so player has two options. First option is quit the game and the second option is continue playing and trying to achieve optimal challenge level. However, too difficult goal can be achieve by putting player through time-consuming or unsatisfied game-play or player can simply conduct RMT transaction. Either way, player can restore to optimal challenge level. RMT is preferred when the condition in Urschel's inequality is met.

Why Game Company Do Not Want Real Money Trading?

RMT is prohibited by most of the game company due to many reasons. It was written in the End User License Agreement (EULA) which probably the most boring agreement that most players do not bother to read. However, every player is subjecting to EULA which stated that game developer or game company has the right over the intellectual property which is the game. Therefore, the sale of virtual item, character, virtual currency or other in-game data for real money is violating the agreement. According to this, it is pretty clear that game developer did not want RMT transaction. By looking into many game websites and webboards (GuildWars 2009, tricksterblog 2010, EVE Forums 2012, World of Warcraft 2012), there are four main reasons that can explain why game company do not want RMT. Firstly, RMT ruined the game-play experience and the balance of the game. Player who spends a lot of time in playing game might feel that it is unfair if other player can be as good as them by just paying their way up with real money. Secondly, RMT is conducting in the black market so there is potential crime due to the transaction, player might get their credit card steal or their account might be hacked. Thirdly, RMT distort in-game market since the game has its own mechanism in absorbing virtual currency to prevent inflation. However, RMT accumulated the virtual currency causes in-game inflation. Lastly and most importantly, game that gain revenue from subscription fee or in-gam item sale will lose profit because player can spend less time in playing game and can achieve the same goal with the help of RMT. From above reasons, seem like RMT is really bad so it is a very serious issue in many MMORPGs. However, the main reason that game company prohibits RMT is that it would not want real money trading.

Based on the above, players will conduct RMT if they are not satisfied with game's current situation. However, game company prohibit the RMT due to several reasons so it

increase the cost of playing game; player might quit instead of continue playing if they cannot restore to their optimal level of challenge easily by conducting RMT. This leads to the question, what players would do if game company allow real-money trading.

METHODOLOGIES

The aim of this paper is to provide useful information for game operator to design the game properly in order to enjoy longer time of profit. The chosen method is survey and game theory. Due to the limited time, the data obtain by quantitative approach might be hard to collect. Therefore, by using existing data and interpret it, the conclusions are not useless.

Survey was conducted randomly and used to assign the payoff of player in game theory. It based on 32 respondents who play game. Game theory is a sequential game where game company play first and the player play later since game company know in advance what they want to do with the game before player know. Under game theory, not allowing RMT make no change to the game since game company prohibit RMT at the beginning. Therefore, RMT legalization is the shock imposes to see the reaction of players. Putting the result together, the conclusion can be drawn.

The analysis can be divided into two phrases; phrase I and phrase II. First phrase is considered to be in a short-run after the RMT legalization took place while the second phrase is more like in a long-run after the RMT legalization took place. In the second phrase, the method will be based on observational study.

RESULT – PHRASE I

According to the survey, respondents' answer can be categorized into three groups; Anti-RMT group, Neutral group, and RMT Supporter.

- 1) Anti-RMT group will quit the game if RMT is allowed
- 2) Neutral group has no preference over RMT
- 3) RMT Supporter will support the game if RMT is allowed

The result is bending toward the latter two groups meaning that most players will not quit the game if RMT is allowed. Putting the result from the survey together with game theory, using game tree, the result can be seen as follow.

Group A: Anti-RMT Group

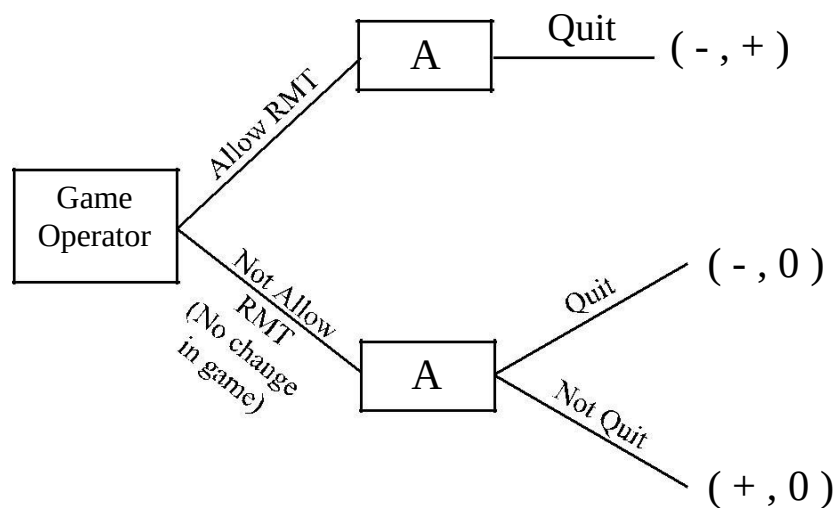


Figure 1: Sequential Game between Game Operator and Anti-RMT Group

This group of players account for 33% of all respondents. Anti-RMT group will quit the game right away if game company allow real-money trading in game because they think that it is unfair. So, it is better for game company to not allow RMT. According to Figure 1, game company will get negative payoff if RMT is allowed. It is not necessary to put alternative branch under allow RMT because under this branch player will quit anyway. When game company prohibited RMT, there is no change to players' payoff because the game was originally not allowed RMT.

Group B: Neutral Group

This group accounted for 33% of all respondents. They have no preference over RMT activities. As long as RMT legalization has no harmful effect to their gaming experience, they will stay in the game. According to Figure 2, only option that will result in negative player's payoff is quit because this type of player will feel harmful if they are forced to quit. For this group, game company can allow RMT. However, it has to consider the effect on the previous group as well.

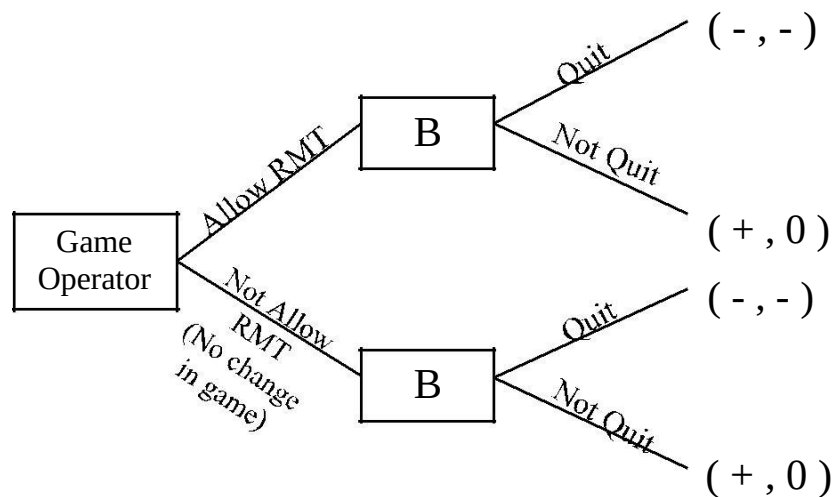


Figure 2: Sequential Game between Game Operator and Neutral Group

Group C: RMT Supporter

RMT supporter accounts for 33% of all respondents. This group support RMT because it gives them an opportunity for making some money and allowing player who does not have enough time to play can catch-up with other player. When game company allow RMT, this group will support it so it increases their playing time. Therefore, game company can enjoy this incremental profit. According to Figure 3, game company would get higher payoff from the supportive behaviour than other cases so the payoff for firm is very positive. In this case, player also get positive payoff from allow RMT since they can make money from spending a

lot of time on playing game. Hence, allowing RMT would have positive impact on both player and game operator.

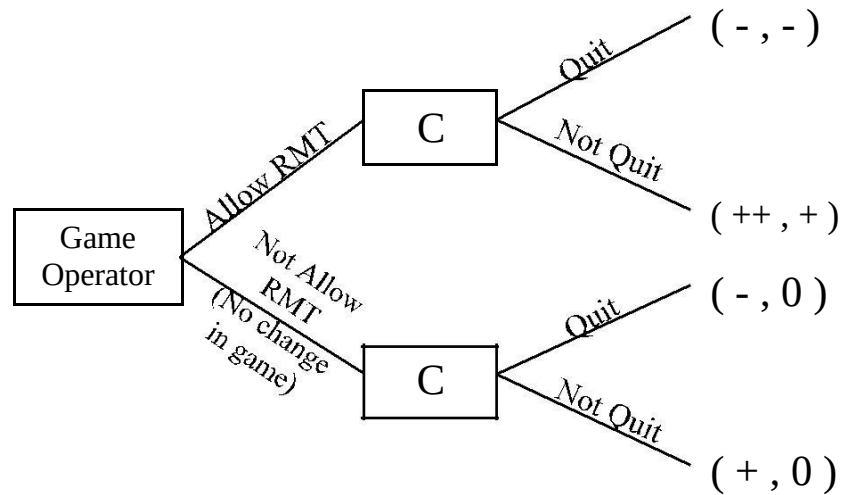


Figure 3: Sequential Game between Game Operator and RMT Supporter

The conclusion for phrase I's result is that allowing RMT will have positive impact for both players and game operator because most of players will not quit the game if RMT is allowed. In the short-run, this effect will attract more players of group C so game operator can enjoy higher profit if the number of new group C () exceeds the number of group A (A) who will quit the game. Mathematically, then game operator profit would increase. Inversely, if then game operator would lose profit. As long as player in group B and C exceeds the number of player in group A, game company will enjoy positive profit. According to the survey's result, player in group B and C exceeds the player in group A which implied that RMT legalization has positive impact in MMORPGs. However, the result only applied to the short-run. In the long-run, the result might be different so we need to analyze phrase II.

RESULT - PHRASE II

In phrase I, player did not anticipate about the demand and supply. Since most players in group C only think about making money but they did not want to be buyer so the number of seller add up in the market causing the supply curve to shift rightward. As shown in Figure 4, the increases in supply lower the price to very low. If players keep being sellers, the increase in supply would reduce the price to zero. At this point, nobody wants to sell anymore. The player whose once was RMT supporter will now quit the game.

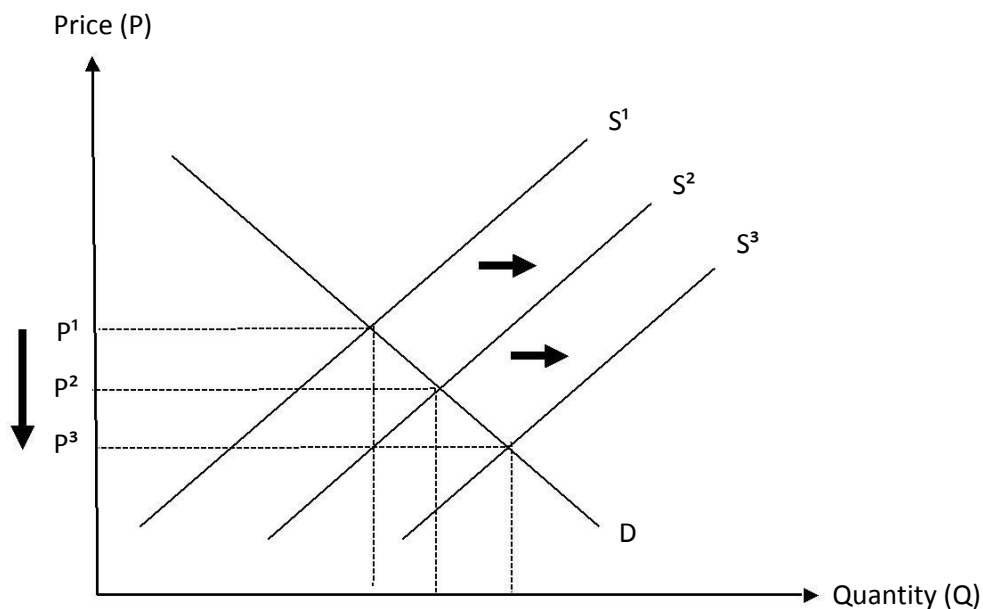


Figure 4 Demand & Supply Analysis for In-game Market

The act of being seller can be called “Gold Farmer”. Gold farmer will try to acquire virtual epic good and sell it for virtual currency then sell virtual currency for real money. According to quantity theory of money,

P denotes price level, M is amount of virtual currency in economy, Q is the quantity of virtual item in economy, and V is velocity of money. When there are many sellers or gold farmers, Q

and M will increase. Assuming that V is constant in the long-run, then price level should stay the same. However, in the case of some MMORPGs where the market is small or game's population is not big, Q only increases because it is hard to convert Q to virtual currency so it drives down the price level. In this case, players will quit the game and game company would lose the profit.

One example of failing game from RMT is Diablo III. Diablo III was an online game where RMT is allowed legally through its auction house. It created opportunity for player to make money, virtual currency accumulated, and causing in-game hyperinflation. This case can be explained by using quantity theory of money. In Diablo III, M increase faster than Q so it increases the price level causing hyperinflation. Therefore, Blizzard, the developer of Diablo III has to take down the auction house and claim that it ruined gaming-experience and destroy the main core of the game which is battling demons and acquire epic roots.

As we can see, the effect of RMT in the long-run is very ambiguous. Game company will not know which effect will take place and they cannot experiment it since it directly affect their revenue. So, they play safe by not allowing RMT at all. In many cases, RMT helps stimulate an economy and not necessary create in-game inflation but it was done illegally in the black market. What game company does is ignore it for some period of time and when this thing gets out of control, game operator would step in.

CONCLUSION AND CONTRIBUTION

Game company can enjoy higher profit if number of new RMT supporter exceeds the number of player that will quit if RMT is allowed. However, this effect is only last in the short-run. In the long-run, as number of seller accumulated, the supply will increase and drive the price down to very low. If this continues the player who was once the supporter will quit the game. However, if the game is fun enough and the main goal of player is not making

money then the game can still exist. Therefore, the impact of allowing RMT has positive effect in the short-run but in the long-run, effect might be vary depends on the game itself. If the game is good enough for players then they will keep playing.

In addition, game operator can operate the game with both systems; virtual currency system and real-money trading system, in order to attract all type of player. This also help game operator to find out which system is better. However, RMT system must be operate cautiously since it needs close monitoring and game operator has to take other factors such as fairness and gaming experience into account. However, if game operator insists to prohibit RMT, it needs to make game content more fun and optimal level of challenge for player must be met otherwise player will seek for RMT or quit the game.

This study can be used as a guideline for game company to conduct proper strategy in dealing with RMT. Since the RMT is not always has negative effect, game operator should consider to allowing them because it will support the related industry which is gold farming industry. Gold farming industry is the industry that making money from selling virtual goods and services. By allowing RMT, gold farmers can sell the virtual item legally so they do not have to hide. This creates job opportunity for many people and hence, should be support. Moreover, the use of virtual economy can be used as simulator for the real world situation where such an experiment is unethical.

The further study should focus more on the impact of allowing real-money trading in the long-run. Although this study show the positive impact of allowing RMT but this strategy is not widely adopt in MMORPGs. So suggestion for further study is that the researcher should take into account of other factors that can keep player playing game along with RMT system.

LIMITATIONS

Due to the time limit, the number of respondents may be insufficient to reflect the accurate result. The survey was conducted in Thailand but most MMORPGs in Thailand never allow RMT so players might have never faced the problem as in the second phrase. Therefore, the survey result might be different if it was conducted in different place where players have some experience in legal RMT. In the phrase II, the findings are not absolute because it depends on players' behavior which is hard to predict.

The virtual economics is quite a new field so there is not much literature or study on virtual economy so some of the findings are based mainly on the opinion of gamer.

REFERENCES

Urschel, Augustus. Understanding Real Money Trading in MMORPGs. Rep. 15 Apr. 2011. Web. <<http://library.gwu.edu/sites/default/files/eckles/Understanding%20Real%20Money%20Trading%20in%20MMORPGs.pdf>>.

Castronova, Edward. "On Virtual Economies." Game Studies 3.2 (2003). Game Studies. Web. <<http://www.gamestudies.org/0302/castronova/>>.

"Guild Wars Rules of Conduct." (2009). Guild Wars. 2 Apr. 2009. Web. <<http://legal.guildwars.com/en/gw-rules-of-conduct-en.pdf>>.

King, Troy Corben. "Real Money Trade in Virtual Worlds." Academia.edu. Web. <http://www.academia.edu/7309677/Real_Money_Trade_in_Virtual_Worlds>.

Lylirra. "Diablo III Auction House Update FAQ." Diablo III. Blizzard Entertainment, 17 Sept. 2013. Web. <<http://us.battle.net/d3/en/forum/topic/9972208129>>.

"Massively Multiplayer Online Role-playing Game." Wikipedia. Wikimedia Foundation, 19 Dec. 2014. Web. <http://en.wikipedia.org/wiki/Massively_multiplayer_online_role-playing_game>.

"World of Warcraft Terms of Use." Blizzard Entertainment. 22 Aug. 2012. Web. <http://us.blizzard.com/en-us/company/legal/wow_tou.html>.

Ohm. "Why Trading In-game Item with Real Money Is Wrong?" Trickster Diary. 8 Oct. 2010. Web. <<http%3A%2F%2Ftricksterblog.exteen.com%2F20101008%2Fentry>>.

IESherpa. "There Are 628 Million MMO Players Worldwide Accounting for \$14.9 Billion in Annual Revenue." Newzoo. GlobalCollect, 02 July 2013. Web. <<http://www.newzoo.com/in-the-press/628-million-mmo-players-worldwide-accounting-14-9-billion-annual-revenue/>>.

"Why People Play Video Games: Top 10 Reasons." Addictionblog.org. 18 Apr. 2011.

Web. <<http://internet.addictionblog.org/why-people-play-video-games-top-10-reasons/>>.\

Heeks, Richard. "Understanding "Gold Farming" and Real-Money Trading as the Intersection of Real and Virtual Economies." Journal of Virtual Worlds Research 2.4 (2009). Journal of Virtual Worlds Research. 16 July 2010. Web. <<http://journals.tdl.org/jvwr/index.php/jvwr/article/view/868>>.

Athechu. "EVE New Citizens Q&A." What Should I Do When I Spot RMT (Real Money Trading). 22 Oct. 2012. Web. <<https://forums.eveonline.com/default.aspx?g=posts&m=2113657>>.

Glasser, AJ. "How MMOs Decriminalize Real Money Trading." The Monetary Future. GamePro, 29 Jan. 2010. Web. <<http://themonetaryfuture.blogspot.com/2010/01/how-mmos-decriminalize-real-money.html>>.

kuhrovec, Ji . Inflation of Virtual Currencies ffect of Real Money Trade on Price Formation in World of Warcrafts and Virtual conomics. aarbr cken, Germany AP ambert Academic Pub., 2010. Print.

APPENDIX

Survey Question < https://docs.google.com/forms/d/1kUjGNUscffAPQ7e-5ubq_efAgYvczLHGQgrVD3oKGZw/viewform>

การซื้อขายไอเทมเป็นเงินจริงในเกมออนไลน์ / Real-money trading in an Online game

*จำเป็น

คุณเล่นเกมออนไลน์หรือไม่? / Do you play or have played an online game? *

- ☐ เล่น / Yes
☐ ไม่เล่น / No

เกมออนไลน์ที่คุณเล่นมีระบบซื้อขายไอเทมระหว่างผู้เล่นหรือไม่? / Does the game that you play has trading system that allows you to trade with other player? *

- ☐ มี / Yes
☐ ไม่มี / No

ระบบซื้อขายในเกมที่คุณเล่นใช้สกุลเงินของเกมหรือใช้เงินจริง? / What type of currency is used in in-game trading system? *

- ☐ สกุลเงินในเกม / Virtual currency (in-game currency)
☐ เงินจริง / Real money

หากระบบการซื้อขายไอเทมในเกมใช้สกุลเงินในเกม คุณเคยซื้อหรือขายไอเทมในเกมเป็นเงินจริงหรือไม่? / If virtual currency were used in in-game trading system, have you ever buy or sell in-game item with real money? *

- ☐ เคย / Yes
☐ ไม่เคย / No

หากเคยซื้อ-ขายไอเทมในเกมเป็นเงินจริง เคยโดนแบนจากการกระทำความผิดหรือไม่? / If yes, have you ever get banned from trading with real money?

หากตอบไม่เคยในข้อข้างบนสามารถข้ามไปทำข้อต่อไปได้เลย / If answered no in above question, you can skip this question.

- ☐ เคย / Yes
☐ ไม่เคย / No

หากเกมอนุญาตให้ซื้อ-ขายไอเทมเป็นเงินจริงได้ คุณจะทำอย่างไร? / What will you do if game allow you to trade with real money? *

- ☐ เล่นต่อ / Continue to play
☐ เลิกเล่น / Quit playing

เพราะเหตุใดคุณจึงเล่นต่อหรือเลิกเล่น? / Why you keep playing or quit playing? *