

Research on the Development of Recent Game Market

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Abstract: Game market has become a huge new field in the recent years. This paper collects data on the numbers of players, stream views, and revenue of companies in different types of games (such as FPS, RTS, and MOBA) and conducts a statistical analysis to determine their correlation. Additionally, this paper uses time series graphs to visualize trends over time and draw conclusions.": the league of legends although has a decreasing number of players, its views still go down too, its revenue can make a same level compare with its heyday. However, for overwatch, it lost its most players and views at the same time and the revenue of its game decreased dramatic as well after 2016. While for some old games like CSGO their players and popularity keep stable. This result can provide reference for game researchers background between games, and can be used as information to predict future market.

Keywords: game market, time series, Csgo, league of legend, Overwatch

1. Introduction

Video games as an innovation has been a prominent role in internet world. They provide countless consumers and players amazing and different services; and they also create an amazing game market which is still growing. The analysis by Newzoo reveals that the audience for esports worldwide is estimated to be 454 million viewers, with a projected increase to 645 million in 2022. This represents a year-on-year growth rate of approximately 15%. Additionally, the global esports market is expected to generate revenue of 1.1 billion USD in 2019, with estimates indicating that it will generate 1.65 billion USD in 2021 and 1.8 billion USD in 2022. [1]. Compare with the first video game, the virtual games have been changing a lot so far. Not only the technologies, performance, ideals or contends, the recent games become more and more complex with increasing players and receive the interference of more companies. A case in point, In China, the latter half of the 1990s is often relegated to an insignificant place in scholarly, business, and popular discourses on Chinese online games [2].

Although so called e-sport is doubted whether it itself is sport. like eSports are organized video game competitions, most often in the context of organized tournaments [3]. This paper's argument is that e-sports cannot be considered as sports because they do not possess enough human elements and lack direct physicality, crucial whole-body control and skills, and do not contribute to the holistic development of an individual. Additionally, the way in which e-sports are created, produced, owned, and promoted places significant limitations on the formation of stable and enduring institutions that are typical in sports governance [4].

A big shift from past to now is now many games are so large which could not image at 20 years ago. The last year has also been a watershed for esports investing. Inspired by multibillion-dollar

valuations for traditional sports clubs, investors looking to get in on the ground floor have valued at least three esports organizations² at over \$100 million [5]. Now some world wide online games depends on the huge scale of workers, programmers and management are allowed to build bigger player communities and adopt another earning methods, free to start methods. The emergence and subsequent industry-wide acceptance of the free-to-play business model for mobile and social games is intertwined with the business models of connective game platforms [6].

With this change, many e-sports games made by mega companies do not use the traditional way to make the profit which sold out the disks or products. Now, a complete chain is introduced by some big game companies like riot They accept provide their freely but with additional goods. Furthermore, they now decide to build the world match and get the focus from fans, which make the profit and can maintain the popularity and enough profit for the company. Playing video games is a highly popular activity in the United States, with 211 million gamers. Our research shows that 83 percent of males aged 13 to 49 play video games, with 66 percent playing at least once a week. However, only 37 percent of those who play competitive video games at least once a week also watch esports weekly [7].

At this level, the players numbers and watcher numbers become an important factor which can affect both the games and the decision from companies. For example, the frequently updating and pitch for official games are the way to accustom to players or viewers demand. Also, the additional products as another revenue are pay more attention by the companies which needs to attract players to buy. In this level, the balance of games is becoming a problem, because to maintain players stay in games and continue to make profits, they game designers cannot just focus on the game experience of players, but need to give a glance on the commercial perspective.

However, games also can be used in other filed. For example, "One of the most comprehensive examinations of the use of computer and video games in history education involves Civilizationand research being carried out at the University of Wisconsin-Madison" [8].

For this reason, this paper takes famous different types e-sport games and analysis the relationship between updating pitch frequency, players number, games' incomes, development of games. Because there are some games have been out of their heyday and some are in their apex, this paper can will also try to give a pattern to predict what will happened during the different period of a game. For RTS game, Star craft can be a good example of games which have past their best time, this paper can also want to bring MOBA games and the new coming games like Pubg and Apex Fornite. And for more logical interpret, we also will introduce the change of games market as contest to compare and explain the changing among games. Especially, this paper will consider the covid time as a special period and give more specialized treatment to get a more reliable comprehensive. The gaming industry, which is accessible from home, is cheap compared to other entertainment sectors and has a wide variety of markets, has become one of the most preferred sectors [9]. Also, game has got attention from the world, As it mentioned "The widespread attention that eSports has received, in addition to proponents' drives to associate the new activity with traditional sport as well as the high levels of sponsorship and corporate affiliation have led to an intensified dialogue questioning whether professional gaming represents a new prototype for sport in general [10]. After the analysis, the paper discusses the correlations and interprets the results.

2. Methods

The data of this study collect the League of lengends, Csgo, overwatch, and Pubg, the recent popular games. Each game this paper can collect the data at annually or monthly intervals. Also, this paper can collect the viewers data of each game and the company yearly revenue. In this research, this paper can will use time as the x core and y as the players numbers or revenue. this paper can also collect

the data like average players and the loss or gain rates of players at monthly interval. However, because some games are new and some are old, this paper can will provide different

2.1. Data Source and Basic Data Processing

This paper can set different factors to evaluate the games changes. We set average players number, the peak players number, the gain and the gain ratio of players. For the revenue, this paper can collect the data with time variable. this paper can use Minilab and time series as the tools. games and the revenues of game companies. Use time series graph as a indicator to express the trends of these games and try to find whether there are some interesting properties among players and viewers and the time. furthermore, this paper can also focus on the revenue. However, for the different ages of games, this paper cannot collect them with the same intervals.

3. Results and Discussion

From Figure 1, 2 and 3, we can find out that the league of legends experienced a harsh increasing during early time and get apex before 2016, even then the slope of increasing is becoming flat and then the total number of players goes down, but this games still have most players in the world. Also, from the viewers of twitch, this paper can find out the number of these is related to the game players, although not all views are players and there are just a small part players are both. And sometimes this paper can find the viewers became a lot in special time, perhaps because some events that important, but seems it has less effects on players. the changes of players were not huge compare with the viewers.

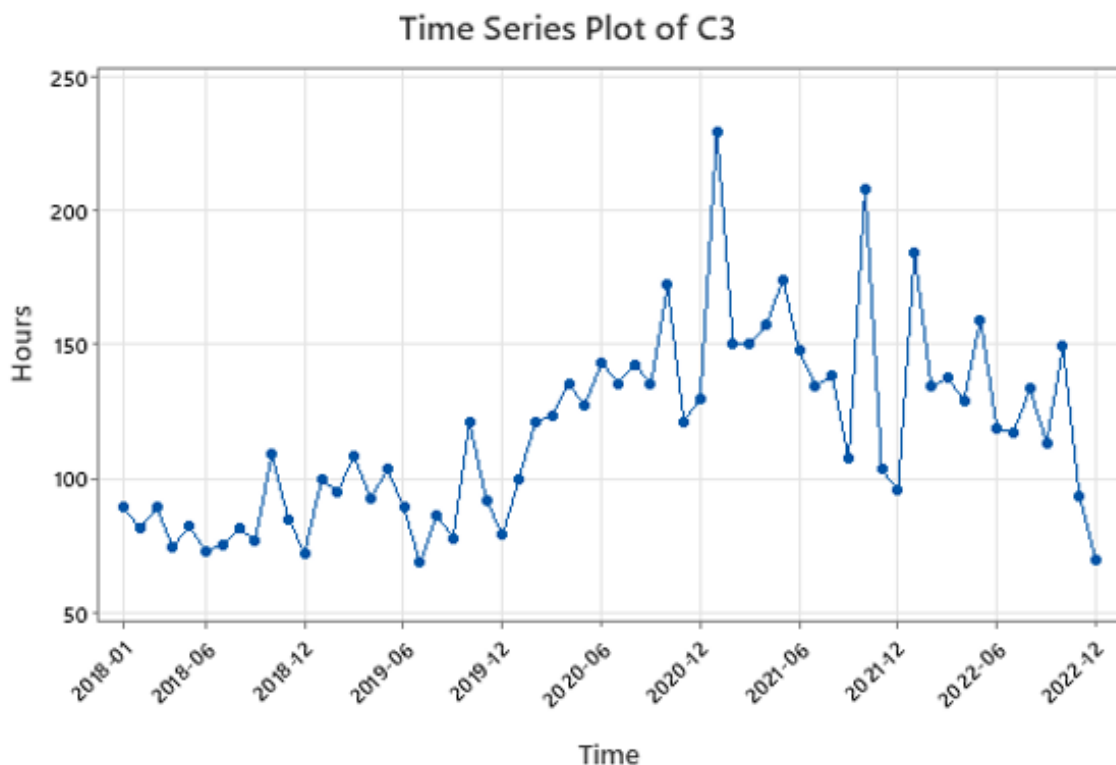


Figure 1: The hours watched of League of Legends on Twitch 2018-2022.

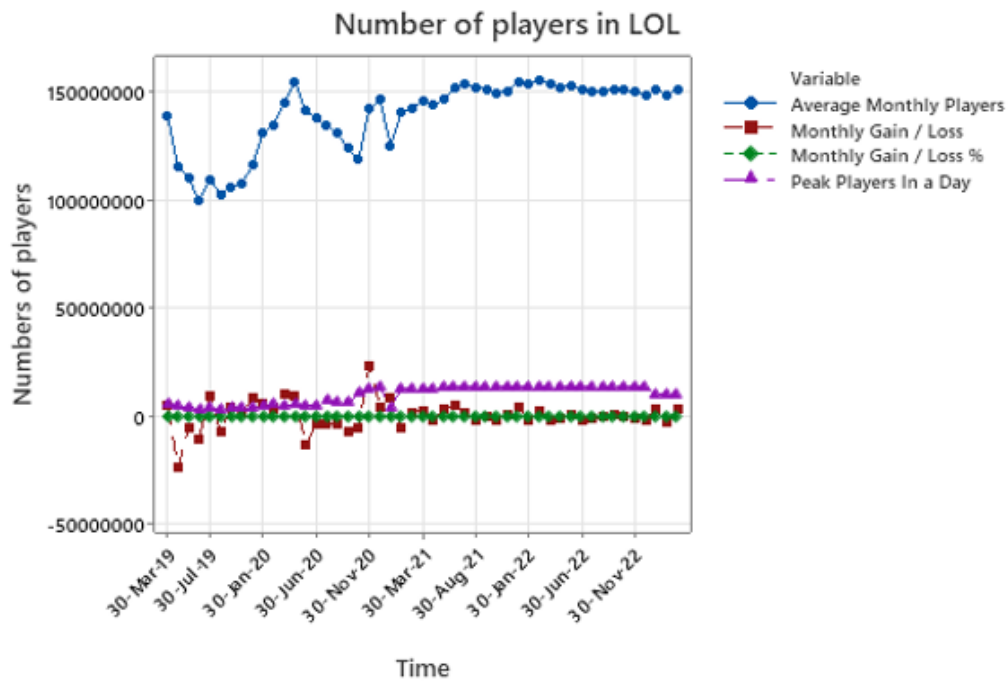


Figure 2: The Number of players in LOL from 2019 to 2022.

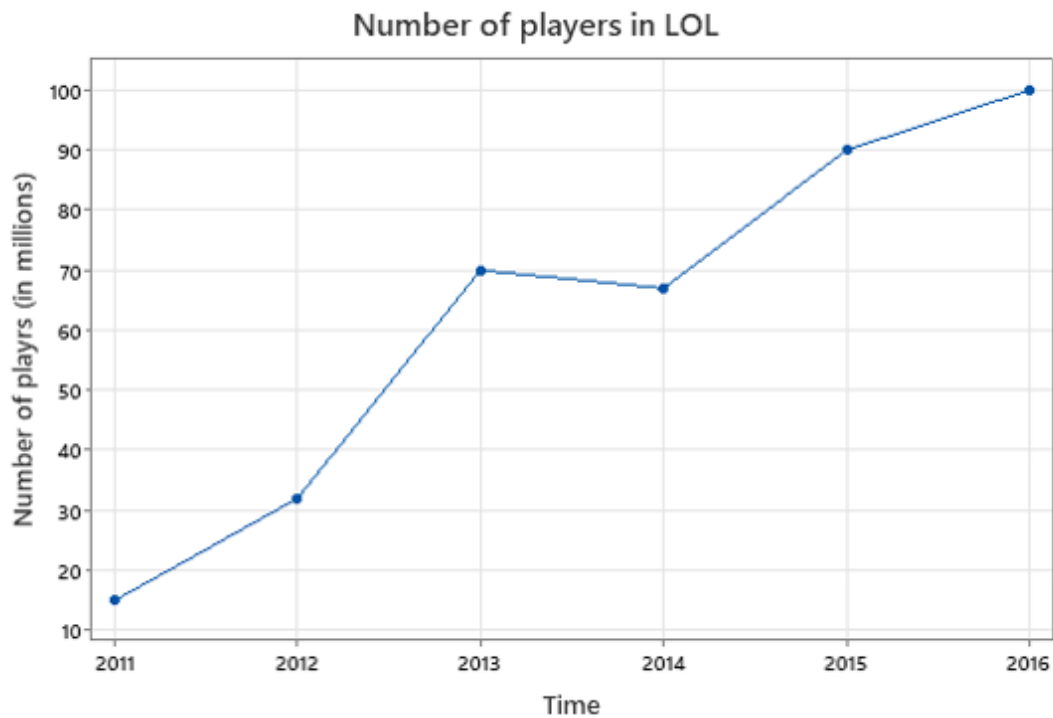


Figure 3: The number of players of LOL from 2011 to 2016.

For overwatch, as Figure 4, 5 and 6 showing, we can find a different pattern that it finally become a so-called dead game, because this paper can find a clear tendency that it had a heyday in early time and then lost its players constantly. Also, for the viewers there are not too many people still watch the streamers when the game goes died.

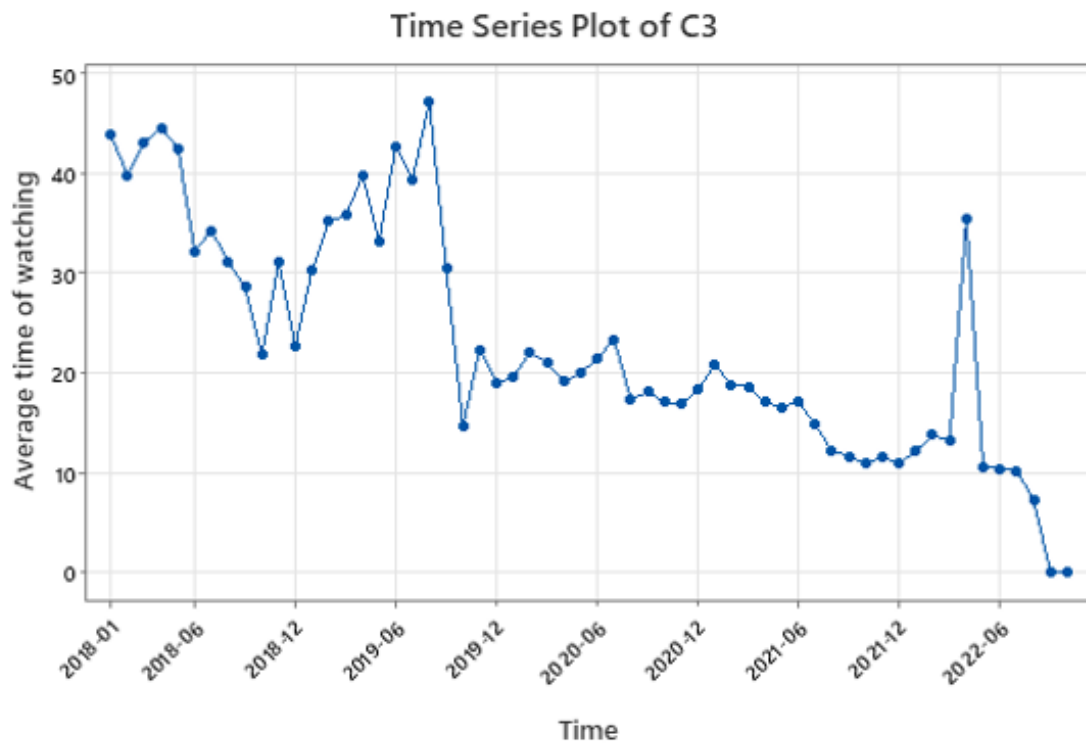


Figure 4: Hours watched of Overwatch on Twitch 2018-2022.

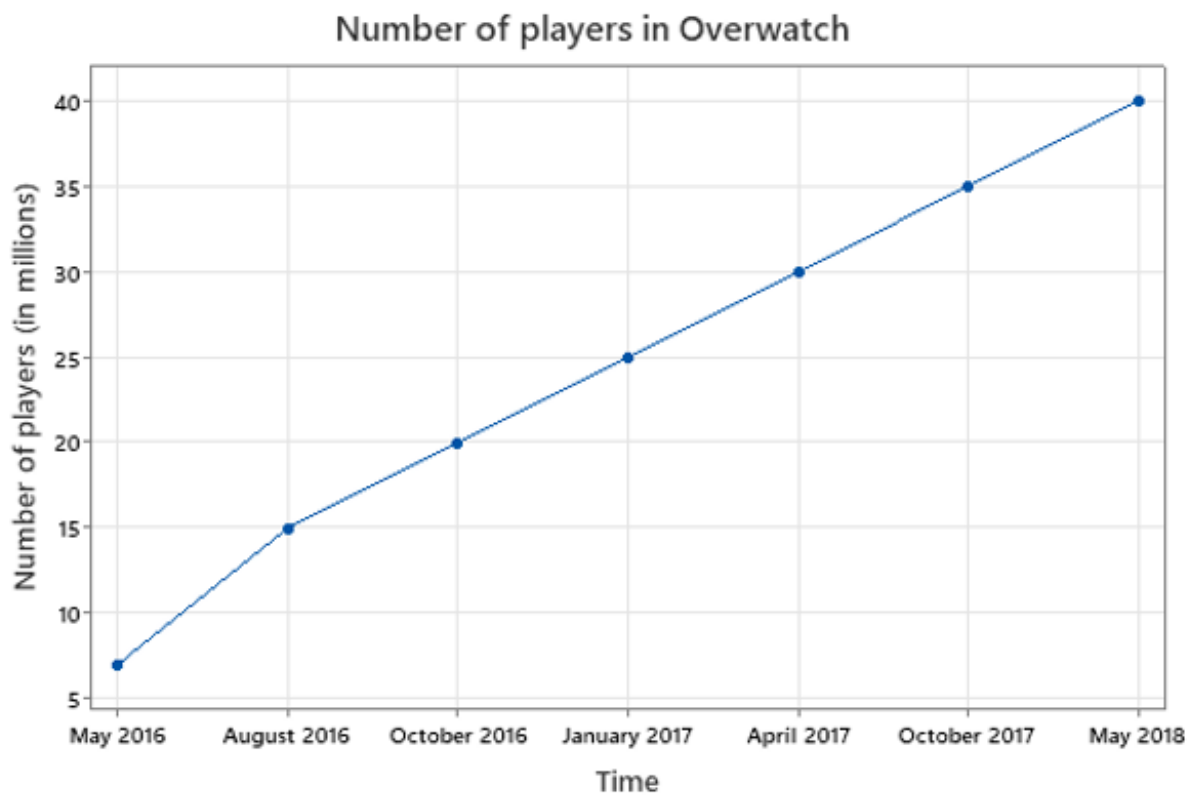


Figure 5: Number of players in Overwatch from 2016 to 2018.

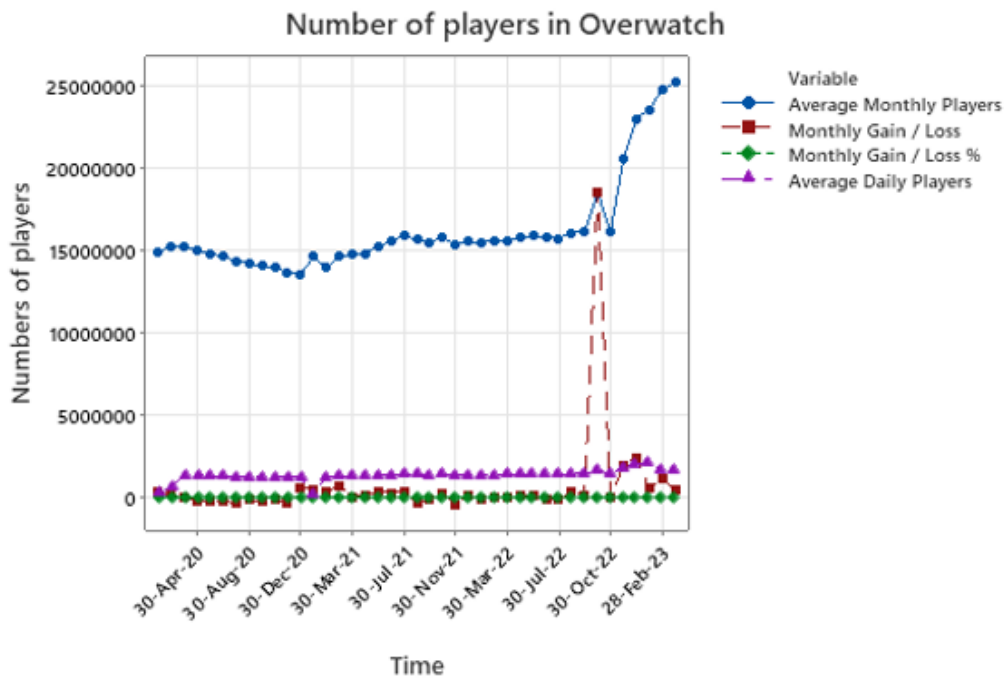


Figure 6: Number of players in Overwatch from 2020 to 2023.

But for the new game Pubg, as Figure 7 shows, the players and the sales are very huge in the first, but then go down so quickly. it was the most popular games during 2017 and 2020. from the data this paper also can find that the amazing ability that it attracts players.

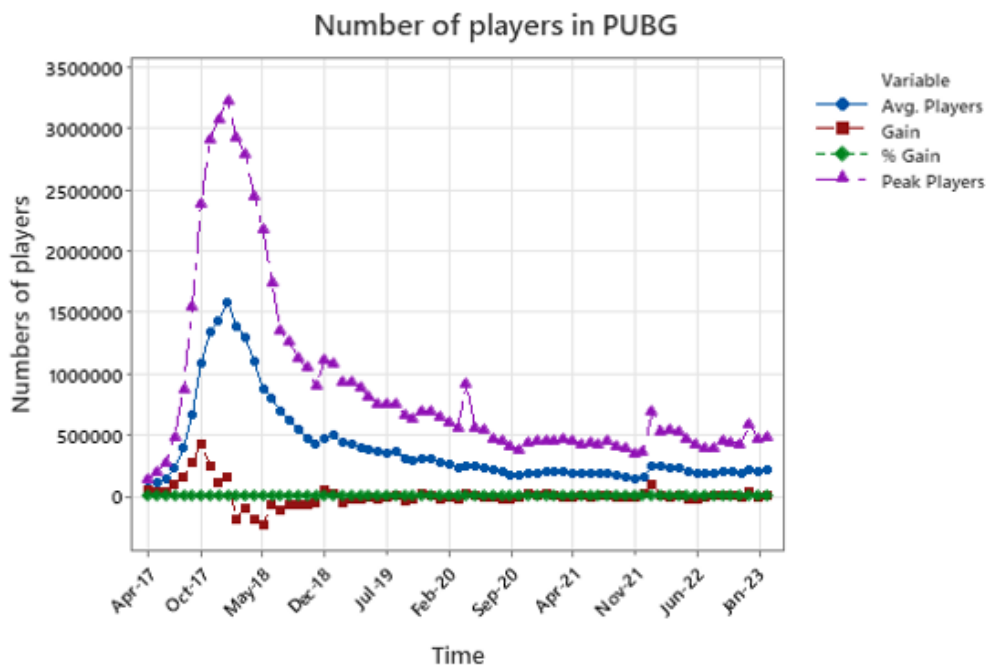


Figure 7: Number of players in PUBG.

And the old game, CSGO, as Figure 8 shows, this paper finds the changes of the player is not huge during all time, although it has lost and new players, but the rate of changes is stable compare with the three games.

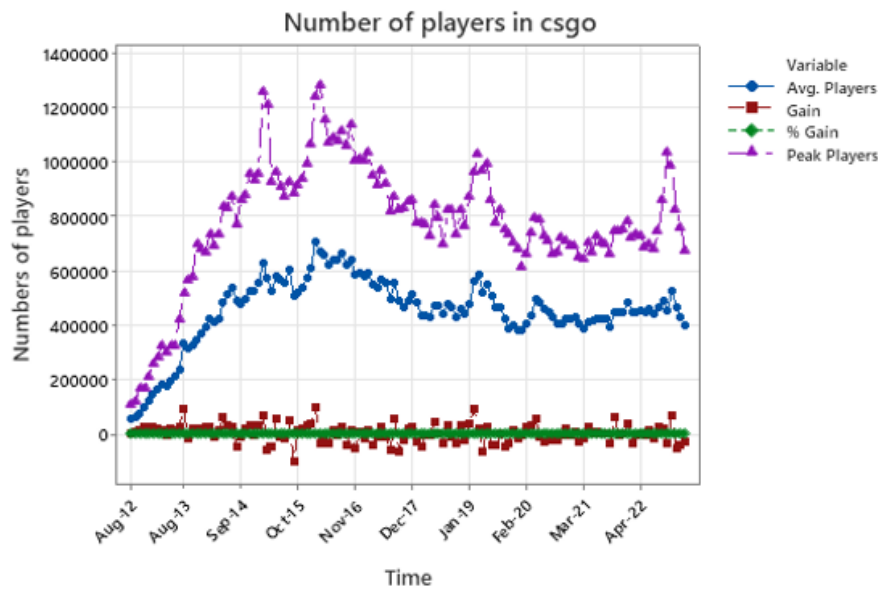


Figure 8: Number of players in CSGO.

Furthermore, as Figure 9 shows, the game dota2 has much stable players number even than CSGO as a Moba game. Consider it has a old version data and exists for a longer time, it although has less players than League of legends, but it still attract a lot of players.

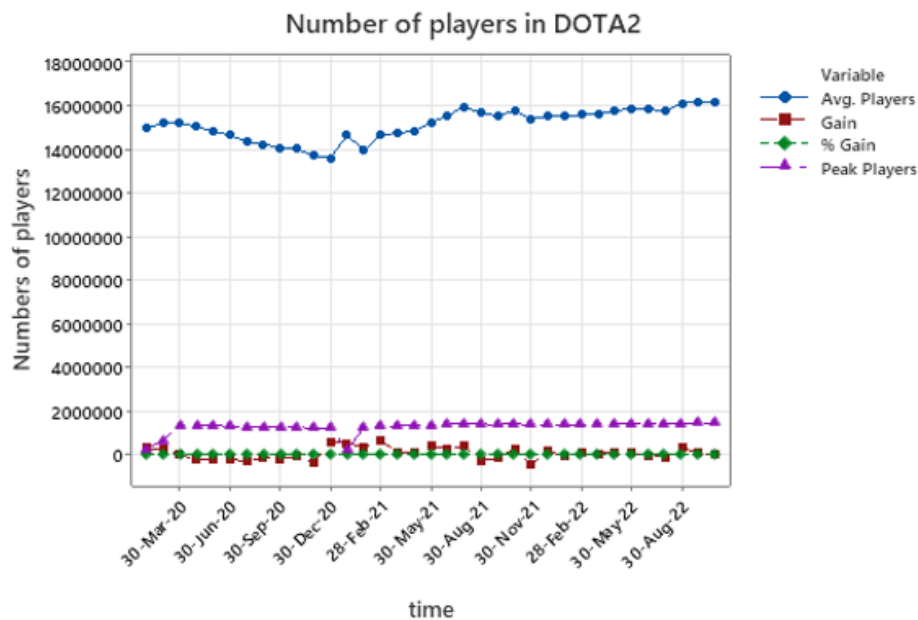


Figure 9: Number of players in DOTA2.

As Figure 10 and 11 showing, for the company revenues, it seems Blizzard faces the decrease of the income in recent years, with the lose of players of overwatch, but the riot gets more revenue even the lol players also decrease.

Nowadays, the game market has become bigger, whole world and the new generation embraces the new inventions. Furthermore, now games are various and capable on many types of devices, not just an expensive product for mid class but it is a universal product for all ranks, and the free-start contribute a lot to this.

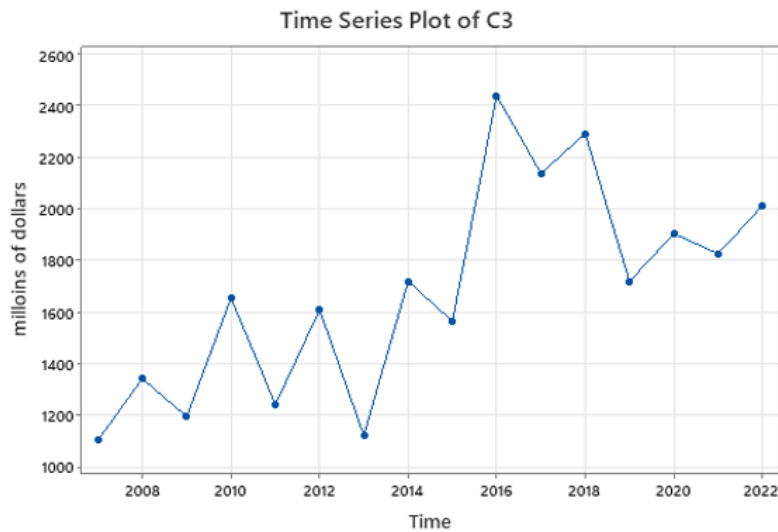


Figure 10: Blizzard net revenue 2007-2022.



Figure 11: Number of active players in blizzard games.

According to the result, this paper finds some new games like Overwatch and PUBG. They experience rapid increasing in the early time, and then their players number both went down and cannot return to the peak time. The PUBG keeps stable players but Overwatch lost its most players. As a comparison, CS:GO as an old FPS game, its players change a little, both for new and quit players, it accomplishes a relatively stable that which seldom changes for many years. It is perhaps because the old games have experienced the peak time, and the players who just want to play for fun have quit for a long time in the early years, then the core players continue to stay in this game. However, for these reasons, the average skills of the game are enhanced by these core players who have played this game for years, therefore, for new comings the standards for them to enjoy the game and to understand game must be higher than the new games. It is a reasonable suspect why the old game can still be worked. However, for the new games, they all have a significant point of inflection, it perhaps because new games have not been built a wall that like the old games, the gaps between players are not too huge and the new ideals also can attract even the public to try, but after the fresh time, many players finally give up it and turn to other things.

However, even for the most popular game lol, they also face the plight that finally they will become the dead game, but this paper can still find the tendency is not so harsh, it seems although the players number is not equal to its peak time, it still has a large player group that similar with the pre-heyday time, also, the revenue of this game seems not drop a lot, it still increases. If this paper considers the extra products around the brand of lol, it seems even players do not play this game anymore, they can still be attracted by the lol, like the anime or games related to lol, so the total revenue of league of legends keeps the same or even increases with the decreasing number of players.

However, for overwatch and its company, the story is different. There must be something that influence the revenue out of games itself, because despite players are important factors of a game, the exploration of game for other fields are also can bring income and reputation to the game too.

Although this paper collects the data, this paper lacks some entire view from the whole game market like the mobile games and some new games in the new platform like switch. this paper just collect data from some famous pc games and it is limited because perhaps it cannot reflect enough the whole changes in game market. We also ignore some games that although occupy just a little part of the game market but they have different work ways.

4. Conclusion

This article analyzes the relationship between the frequency of updating pitch, players' numbers, game incomes, and the development of various esports games. The analysis focused on different types of games, such as RTS games, MOBA games, and newer games like PUBG and Apex Fortnite. The article also discussed the changes in the gaming industry and the impact of the COVID-19 pandemic. The research collected player and viewer data and evaluated the changes in games based on factors such as average players' numbers, peak players' numbers, and gain ratios. The results showed that some games, like League of Legends, experienced a significant increase in the early years, but the slope of growth later became flatter, and the total number of players decreased. Other games, like PUBG, experienced a significant increase in players and revenues after their release, but the numbers eventually decreased. The article concludes that the balance between player experience and commercial perspective is essential for game designers to maintain players' stay in games and make profits. Additionally, the article highlights the importance of considering player and viewer numbers, revenue, and time variables when analyzing the development of esports games.

References

- [1] Nejad R M. *Acknowledgment to Reviewers of Entropy in 2020. Sports*, 2021.
- [2] Chew, Matthew M. *A Critical Cultural History of Online Games in China, 1995–2015. Games and Culture*, 2016, 195–215.
- [3] Hamari, Juho, Max Sjöblom. *What Is Esports and Why Do People Watch It? SSRN Electronic Journal*, 2017.
- [4] Jonasson, Kalle, Jesper Thiborg. *Electronic Sport and Its Impact on Future Sport. Sport in Society*, 2010, 287–99.
- [5] Cerier E. *Timely tips the seven keys to marketing success. Reeves Journal*, 2015, 95(7): 18-19.
- [6] Nieborg, David B. *Crushing Candy: The Free-to-Play Game in Its Connective Commodity Form. Social Media Society*, 2015.
- [7] Borowy M, Jin D Y. *Pioneering E-Sport: The Experience Economy and the Marketing of Early 1980s Arcade Gaming Contests. international journal of communication*, 2013.
- [8] Spring, Dawn. *Gaming History: Computer and Video Games as Historical Scholarship. Rethinking History*, 2014, 207–21.
- [9] Şener, et al. *The Impact of Covid-19 on the Video Game Industry. SSRN Electronic Journal*, 2021.
- [10] Borowy, Michael. *Public Gaming: Esport and Event Marketing in the Experience Economy. Summit Research Repository*, 2012.