Market Analysis of the Game Industry Based on Survey Questionnaire

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ABSTRACT. In recent years, China's game market has been booming. We prepared a survey questionnaire with 18 questions, and 86 people participated in the survey. Questions 1 to 5 show that the proportion of men and women surveyed is equal, and their attitude towards games is relatively neutral. If they want to play games, they prefer to play games on mobile phones. Questions 6 to 9 show that players are moderately engaged in the game and show considerable restraint. Questions 10 to 13 show that game players prefer games such as puzzle and RPG. Chengdu Tianmei (L1) has become one of the most popular game companies in China. Game players value comprehensive evaluation in game experience. Questions 14 to 18 indicate that it is difficult for us to make an accurate judgment on whether China's game market will move towards oligopoly and buyout in the future. However, the awareness of intellectual property protection in China's game market is gradually strengthening. Finally, we put forward suggestions on further strengthening intellectual property protection, developing high-quality game products and promoting economic development for the high-quality development of China's game industry.

**Keywords:** Game industry, market analysis, survey questionnaire

1   Introduction

Recently, the Game Working Committee of China Audio Digital Association and China Game Industry Research Institute released the 2021 China Game Industry Report. According to the report, in 2021, the actual sales revenue of China's game market will be 296.513 billion yuan, an increase of 17.826 billion yuan over 2020, up 6.4% year on year, which is shown in Figure 1. In terms of user scale, the number of game users in China will maintain a steady growth in 2021, reaching 666 million, up 0.22% year on year, which is shown in Figure 2.
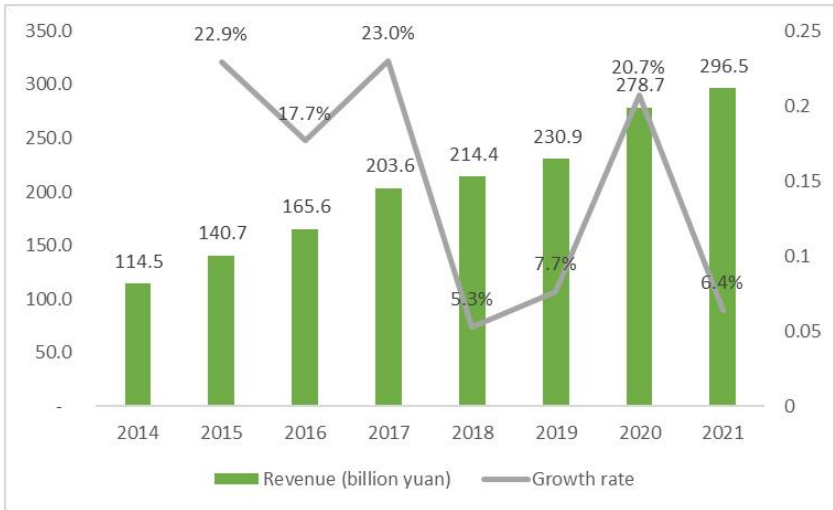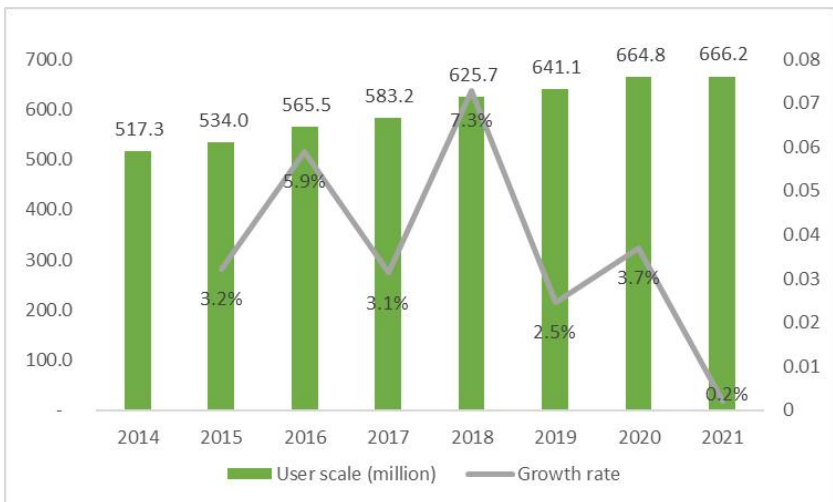
Fig. 1. Actual sales revenue and growth rate of China's game market (figure credit: original)

Fig. 2. User scale and growth rate of China's game market (figure credit: original)

In the future, with the technological progress of computer hardware, display, processing, storage, interface, network bandwidth and operating system functions, as well as the continuous expansion of the mobile game market, it is expected that the size of China's online game market will reach 339.3 billion yuan in 2022. With the increasing popularity of the network, online games have been constantly updated and developed, making many online games come into being one after another [1]. Many online game products already exist on the surface, including role playing online games, leisure action online games, chess and card desktop games, and other online

games, forming a warm scene of online games where a hundred schools of thought contend. In this case, how players choose games, what games to choose, how game developers promote and retain existing players have become issues that must be considered in the huge game market. This article through the network survey, to understand the consumer, that is, the game player's consumer psychology. In August 2022, the author distributed questionnaires through online survey, recovered 86 valid questionnaires, and analyzed relevant data [2].

2   Survey Questionnaire Set

The first ten questions of the questionnaires illustrate the basic information of the survey respondents, and they are used to know the information of the people who play games and which games they prefer. For instance, the fifth question asked how many games the survey participants have played in the past, and the options of the questions include from less than 50 games to more than 500 games for respondents to select. By collecting the responses for this question, the research could gain some information regarding the basic gaming experience of the participants. The more experienced the participants are, the more effective their responses will be.

The eighth question is about the time the participants spend on games the options involve less than 30 minutes to more than 6 hours, which can help to get the information of their game experience and how they like about games. The more experienced the participants are, the more effective their responses will be.

The tenth question is about the type of the game the participants have played and prefer the game types include Alpinia oxyphilic playing shoot physical culture and so on. According to these kinds of games can help to find out which game Chinese game market prefer and can use this information to infer the market type of Chinese game market

The question11 gives plenty of names of game company which can help to know about the market type （Perfect, competition market, monopoly competition market, oligopoly market and complete monopoly market）and the target of the questionnaire is to find which type of game market Chinese is, so according to which game company they know and play to estimate the market type.

The question 14 use four different questions to ensure the market type of Chinese game market and how it form the front information get by this questionnaire can help to find out the real market type of Chinese game market to reach the target of the research question these four questions can find out the how the type of market from in China.

1. Do you think the one of the Chinese game markets will be a few dominant?

This question is use to find out does Chinese game market is a complete monopoly market or oligopoly market.

2. Do you think the quality of domestic games is not high?

This question can ensure the market type of it because in complete monopoly game market or oligopoly game market. The quality of the game usually does not

focus on improve the quality but to find more way to let you spend money and play more time.

3. Do you think the buyout system can be developed in China?

Buyout system usually happened in Perfect competition market can help to estimate the market type.

4. Do you think small game studios can survive?

It is about the perfect competition market because in this market small game company can survive by making good games.

3 Survey Results

3.1 Question 1 to 5

The first 5 questions describe the basic characteristics of the game player. In terms of gender, the proportion of men and women is roughly the same, and the number of men is slightly more than the number of women. In terms of age, about 68.6% of adults over 18 years old are playing games. There are also 26 people, that is, about 30.23% of the respondents are between the ages of 15 and 18, and they are also playing games. This is a challenge for us. It is true that minors' long-term addiction to games will affect their physical and mental health to a certain extent, and will also affect their study, family, or school. After the game becomes a regular sports event, it also means that we should do a good job in front of preventing minors from indulging in online games. It is necessary for relevant departments to introduce and improve policies to prevent minors from indulging in online games. In question 3, only 32.56% liked games, while 29.07% did not. The neutral ones were slightly more, accounting for about 38.37%. This represents that everyone is hesitant, swaying, and vague about the game [3]. Some of them may like games, but some do not like games so much, so they are neutral. For game developers, students should be properly guided to participate in the game to reduce pressure. But at the same time, students must be prevented from indulging in games. About 69.77% of the students like playing games on mobile phones, and only 27.91% of the students like playing games on computers. This represents the development trend of the mobile Internet era. At the same time, we should also note that for large games, computers are the first choice for game carriers. Question 5 Types of games played by main players. 62.79% of the players have participated in less than 10 games. This is a normal number. At the same time, we also noticed that 18.6% of the players played between 10 and 50 kinds of games. The proportion of players with more than 100 games is 12.79%. Maybe these players are not loyal to the game and prefer to play new games, which creates a good environment for game developers. Questions 1-5 show that the proportion of men and women surveyed is equal, and their attitude towards games is relatively neutral. If they want to play games, they prefer to play games on mobile phones [4].

3.2   Question 6 to 9

Questions 6 to 9 are mainly related to the players' investment in the game. Question 6 is about "Do you stay up all night for the game?". Most people (77.91%) do not stay up all night for games. This shows that the new generation of players are becoming more and more rational and will not sacrifice their health because of games. Question 7 is about the frequency of the game. 11.63% played games every day, 22.58% played games 2-3 times a week and 9.3% played games 2-3 times a month. At the same time, we will also notice that the proportion of people who rarely play games and never play games is also very large, about 53.49%, more than half of them. This shows that games are a very good ecology [5]. Half of the people often play games, and about half of the people rarely play games. Games do not appeal to every young person. There are many things that can replace games in this world, including reading, movies, sports, tourism, etc. These activities are healthier and more worthy of our guidance. Question 8 is about the time spent on games every day. Most game players (75.85%) spend less than 30 minutes on games every day. This is a very healthy proportion. None of the respondents spent more than 4 hours playing games every day. This is also a very healthy data. This shows the young people's attitude towards games, which is only for entertainment occasionally, rather than indulging in them. Question 9, about the player's spending on the game. Similar to the previous question, most game players (72.09%) do not recharge the game. There are 9 game players who recharge more than 100 yuan, accounting for 10.47% of 86. Questions 6 to 9 show that players are moderately engaged in the game and show considerable restraint [6].

3.3   Question 10 to 13

Questions 10 to 13 express the players' preferences for the game. Question 10: What kind of games do respondents like. About 36.05% of the players like the puzzle type games; Secondly, 17.44% of players like RPG games. Shooting, Casual Games and chess ranked third, accounting for 13.95%. Only one player likes cartoon games. Question 11: Check the name of the game company that the player has played, and check the preference of the game player from the perspective of the game company. Chengdu Tianmei Company (L1) ranked first, with 40.7% of players playing its games. Shenzhen Photon (S, Quantum) Co., Ltd. ranked second, with 25.58% of players playing its games. NetEase Entertainment Guangzhou ranked third (Dream, Poseidon, No. 10), with 22.09% playing its games. The proportion of other companies is less than 20%. The above data is a comprehensive evaluation of the game, revenue, team atmosphere, bonus and welfare, technical strength, corresponding reputation, employer brand and other dimensions launched by various companies in recent years [7]. Question 12 is about the purpose of playing games. 86.05% of the players said that entertainment is the main purpose of playing games, which is an overwhelming proportion. This shows that most players play games for entertainment. However, at the same time, we also noticed that this is a single choice question. Several players chose to make friends, become a game master, earn income, and exercise their ability. It should be said that this proportion is very low, but it does exist. There are 2 people

who want to become game masters. They may want to win honour and money for themselves as professional game players after the game becomes a formal sports event. Question 13 is about the quality of the game. The question is which factor the player values most. The highest ranking is comparative assessment, accounting for 36.05%. This shows that most players consider more than one game experience, including game screen, feeling of operation, innovation, balance settings and music. To make a game outstanding, you must win other games in the comprehensive score. In the comprehensive evaluation, the factors from high to low are game screen, feeling of operation, innovation, balance settings and music. Questions 10 to 13 show that game players prefer games such as puzzle and RPG. Chengdu Tianmei (L1) has become one of the most popular game companies in China. Game players value comprehensive evaluation in game experience, including game screen, feeling of operation, innovation, etc.

3.4   Question 14 to 18

Questions 14 to 18 are about the game market research. Question 14: Do you think China's game market will become dominant. At present, China's game market is in a tangled battle and has not yet formed an oligopoly. For the future, about 50% of the players agree or very agree. 23.26% of the players disagreed or very disagreed. About 26.74% of the players said it was possible to be in a neutral position. It should be said that, from the results, half of the players who believe that the Chinese game market will form an oligopoly account for the game market, far more than the players who believe that the Chinese game market will maintain a pattern of multiple competition. Question 15 is about the quality of domestic games. The result was quite surprising. About 33.72% of the players said that the quality of domestic games was high or very high. Only 18.61% of players think that the quality of domestic games is not high or very low. Most players are neutral, accounting for nearly half. This shows that many players believe that the quality of some domestic games is relatively high, while the quality of some domestic games is relatively low, and it is difficult to make accurate judgments. In the future, if domestic games want to attract more players and go abroad, they must improve the quality of games [8]. The 16th question is about "buyout system". The buyout system is a system of payment. It means that users can permanently use all the updated software services or game content after spending only one time. There is no subsequent mandatory consumption fee, that is, a one-time payment for lifetime use. On the contrary, it is a point card game [9]. Point card games use money to buy games for game time. This kind of game is that if you don't buy point cards, you can't even get on. Many domestic companies are reluctant to spend money and energy to do such games, because buying out games is too much to test the content of production. If it is not done well, the game player will not buy it or spend money to buy it, and the cost of pre-production will be lost. Like the expected results, only 23.26% of players believe that China may develop buyout games. 36.05% of the players believed that China could not develop buyout games. The largest proportion of players are still neutral. 40.7% of the players are neutral about whether a buyout game can be developed in China. Question 17 is "Do you think

small game studios can survive?". Not many people agreed on this topic, accounting for 20.93%; The proportion indicating neutrality is 40.7%; 38.37% disagreed. This shows that most players do not agree with the development of small game studios. This is easy to understand. Large game companies such as Tencent Games and NetEase Games have excellent talents, sufficient funds, and first-class publicity. Small game studios are hard to break through. The 18th question is "Have you ever played pirated games in China?". 67.44% of the players said that they had never played pirated games in China. This means that the idea of protecting intellectual property rights has gradually taken root in the hearts of the new generation of players. We predict that pirated games will become less and less in the future. Few players are willing to play pirated games. Questions 14 to 18 indicate that it is difficult for us to make an accurate judgment on whether China's game market will move towards oligopoly and buyout in the future. However, the awareness of intellectual property protection in China's game market is gradually strengthening.

4   Conclusions

4.1   Further Strengthen the Protection of Intellectual Property Rights

Further strengthen the protection of intellectual property rights and safeguard the interests of game developers. China is in an important stage of copyright protection. The government should further strengthen the protection of intellectual property rights, strictly implement relevant laws and regulations, seriously deal with infringement, and protect the interests of game developers; Consumers should improve their awareness of copyright, form a good habit of genuine consumption, actively maintain the fairness of the game market, and say no to pirated and infringing products. The game itself is a computer program composed of certain logical rules. To develop a game computer source code, game developers often need to invest a lot of manpower and material resources. It belongs to the computer software in the object of legal protection and is a category of intellectual property and copyright protection. The protection of copyright is also an issue that game companies need to pay close attention to in their development [10]. At present, China's game industry has entered a high-speed and orderly stage, but in this process, piracy is still very serious. China should give play to the role of intellectual property in guiding and promoting innovation and development. High level protection of intellectual property is the institutional guarantee for innovation and development.

4.2   Further Develop High-Quality Game Products

The rapid development of the game industry has not only brought huge benefits, but also attracted many speculators and speculation. At present, the game market is full of many inferior and homogeneous game products, which seriously disrupted the market order and damaged the interests of consumers. Game enterprises should increase technology investment, improve innovation ability, and develop truly high-quality game products to enhance the competitiveness of enterprises and products. China's

game products are mainly web games, mobile games, and client games. In general, the mobile game market continues to grow at a high speed, the end game market tends to be stable, and the page game market has entered a period of decline. The high degree of homogeneity between different products makes the life cycle of mobile games short and the mobile game market competitive. In recent years, China's game market has become mature, with increased market concentration, intensified competition, and rapidly increased user acquisition difficulties. We should actively explore new types of games and subdivide the game market, target groups with low proportion of users such as female groups, middle-aged and elderly groups, develop specific products that are attractive to these groups, actively explore the "blue ocean" of the game market, and inject new vitality into the electronic game industry [11].

4.3   Further Promote Economic Development

The essential demand of game products is a kind of cultural and entertainment demand and a high-level demand at the spiritual level. Only when people's material needs are met, can they pursue the spiritual needs of leisure and entertainment [12]. People's consumption of game products is based on their own economic level. Therefore, the superstructure should continue to work hard to promote economic development, and residents should work hard to improve their own economic conditions to enhance the level of demand for games and other spiritual, cultural and entertainment products. Even when the economy is relatively developed, we should not forget that games cannot be excessive, especially for teenagers. The grading management standard of our country should be based on the basic point of protecting the physical and mental health of minors, seek a balance between the review of game content and the promotion of industrial development, and conduct grading management of online games. We not only need to mark games with appropriate age levels, but also learn how to use specially designed fixed words to describe the game screen prompts in foreign countries. Although China has issued relevant policies and regulations on the use of the anti-addiction system for minors in online game products and further improved the possible drawbacks of the anti-addiction system through technology promotion.

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