

Analysis of the Development and Spread of Video Games from the Demand Level

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Abstract. With the rapid development of science and technology in the new century, almost all families have an electronic device, which enables the rapid development of the electronic game industry. The variety and quantity of games have been greatly increased, which cannot avoid the uneven quality. To take the development of video games to a higher level, the fundamental is to start from the level of demand so that supply and demand match. At present, there is no comprehensive analysis of users' demand for video games in the academic circle, and producers do not have theoretical and practical specifications for game production. Based on Maslow's hierarchy of needs theory and psychological needs theory, this paper collects cases applicable to the research, studies users' demands for electronic games by the direct method, and then summarizes the development status of electronic games since their emergence in response to users' demands, and provides a theoretical reference for the future development and dissemination of electronic games. Through research and analysis, it is found that the main needs of video game users are social needs and self-actualization needs, which can better reflect the primary criteria for users to choose video games. According to the hierarchy of needs theory, although the eight levels of user needs have been met in the development process of video games, users generally aspire to advanced needs, which is also the fundamental reason for users to participate in games. Based on the user needs obtained from the research, relevant suggestions are put forward for game production and operation, and the hierarchy of needs theory is taken as a theoretical reference for the development of the electronic game industry.

Keywords: Hierarchy of Needs Theory; psychological needs theory; video games; user needs.

1. Introduction

As a branch of games under the background of digital technology, video games broaden the content and form of games, integrate eight types of art, and interact with players to form a unique experience. Excellent game works are known as the "Ninth art". According to the 2021 China Game Industry Report jointly released by the Game Working Committee of China Music and Digital Association and China Game Industry Research Institute, the scale of China's game market in 2021 will reach 296.513 billion yuan, with an increase of 6.4% compared with 2020 [1]. Electronic games have huge market potential in the world. However, the superficial glitz can hardly hide the difficulties of the development of video games in online media. With the expansion of the industry scale, game companies, new media groups, and other stakeholders have a growing demand for profits, and the crude development relying on capital implantation has begun to fail to follow. This is reflected in the most favored game type of online game manufacturers: In-app Purchase Game. The producers only think about how to obtain more profits but ignore the quality of the game itself. Objectively speaking, the production of video games has problems, such as media practice before following the theoretical guidance; The reason for this is the lack of theoretical construction, cognition and practice of influencing factors on the communication effect of video games. Although the game production also has many insufficiencies, the game itself is very attractive, so video games worldwide have a large number of users. With so many users, where there is demand, there will be supply. For game manufacturers, accurately capturing users' needs is fundamental to improving market competitiveness. Most of the research of world scholars on users' needs for electronic games focuses on a specific demand relationship. This paper aims to combine Maslow's hierarchy of needs theory and mainly study users' needs for physiology, safety, sociability, respect and self-actualization in electronic

games with the theory of psychological needs. This paper extracts and analyzes the different feelings that users need to obtain from electronic games to draw general conclusions and provide references for future development.

2. Theoretical Framework

In 1943, Abraham Maslow proposed the hierarchy of needs in his *Theory of Human Motivation*. The original hierarchy of needs theory only has five levels, which are physiological needs, safety needs, social needs, respect needs and self-actualization needs. These five needs are arranged in order from low to high, reflecting the law of human psychology and behavior. When the low-level needs are satisfied, people will seek the satisfaction of the higher-level needs. In subsequent evolution, Maslow's hierarchy of needs model has been promoted from the fifth to the eighth [2]. Maslow's Hierarchy of Needs theory has been applied in planning-related studies many times. In order to reflect the theme of this study, the eight-order hierarchy of needs model can be redivided into four parts according to the degree of importance, symbolizing the increase of game users' needs from basic to advanced.

3. Analysis of Players' Needs

3.1 Physiological and safety needs

3.1.1 Physiological Needs

For the development and spread of video games, physiological and safety needs are the most basic needs. After the 21st century, with the rapid development of the world economy, the average living standard of the people has been greatly improved, followed by the popularization of intelligent devices, and the cost of obtaining and using them has been greatly reduced, which provides the basic conditions for the spread of electronic games. When physiological needs are satisfied, users will pursue higher-level needs. However, most physiological needs are related to real life and have little relevance to the study of video games. Therefore, there is no need to further investigate the physiological needs, which can be regarded as "satisfied needs" in video game needs.

3.1.2 Physiological Needs

Safety needs refer to human demand for safety, order and security in life or work. In Maslow's hierarchy model, the second stage represents safety needs as provided through stability and security. Maslow's idea is that a firm order, laws, and limits belong to this area of safety [3]. It is human nature to seek security, especially for severe gamers whose life consists of playing video games in addition to work and rest. They often hope that they can find security in video games that they cannot find in real life. This is essential for them. Making a new player feel safe in a game is the same as making him trust the game, and this is very important in the production of video games to consider whether the player has lost trust in the game due to problems with the game's guidelines, rules, or safety systems. For security requirements, there are mainly financial security and game environment security. Financial security refers to whether a player's assets in the game are at risk, such as whether the game account is stolen and whether the character's property is discarded due to death. Environmental safety refers to whether the players are familiar with the rules of the game and whether the market transaction is protected during the game. A well-made game should have detailed beginner's instructions so that the players can learn the game quickly without being put off by the strangeness of the controls. Whether the safety of the environment can make the team players in the game match their own strengths have a great impact on the game experience of players. In the game, players always hope to win, and the antagonistic game between players belongs to the zero-sum game; that is, there must be losers and winners. The user accumulates a certain amount of frustration after each failure, and when frustration accumulates to a different threshold for each person, the user is more likely to abandon the game. Therefore, the security of the game competition environment is the

focus of user demand. If a fair and safe game environment cannot be guaranteed, users will only stay on the low-level security demand, it is likely that there will be no more advanced demand, and the development requirements of video games will not rise, so the development of the video game industry will lag behind.

3.2 Physiological and safety needs

3.2.1 Physiological Needs

Social needs are human needs for friendship, trust, warmth and love. In Maslow's theory, human beings will show stronger social needs after meeting basic survival needs and physiological needs. The general concept of social communication: the communication between individuals and individuals and between individuals and groups is purposeful. Certain discourse systems and interpersonal communication methods are used to achieve information transmission, value collision and emotional exchange through certain carriers and tools. Human beings are highly social animals, and social activities are an essential part of human society. Human social activities are closely related to the stage of social development, and the ways of social activities are different under different social backgrounds. In the context of the development of The Times, social networking has become the mainstream of human social activities, and video games, as the successful product of the network world, have gradually become the carrier of social activities. The term 'social play setting' refers to the social context in which digital gaming is taking place. A few common social play settings exist: these settings are defined by their possibilities for face-to-face and mediated interaction and the presence of co-players. At the base level, digital gaming can be defined as either 'solo play' or 'social play' [4]. Since 2016, with the birth and popularity of excellent mobile game products represented by *Glory of Kings*, mobile games have begun to become a common entertainment lifestyle in the life of young people, and one of the most important characteristics of this lifestyle is socialization. At present, games have begun to be one of the important ways for young people to socialize. The game provides the young people in the network with a level of game interaction. For the game players who are strangers to each other, the teamwork PK and the same competition in mobile games are essentially the expressions of social interaction between strangers based on interest. Due to the increasing popularity of mobile games, playing games together or sharing game experiences and fun stories has become important social content for young people, and this series of behaviors also deepens the topic of socialization among acquaintances.

In this sense, mobile games have successfully integrated the two social modes of acquaintances and strangers into the game products and thus become an important social link for young gamers. With the help of this social attribute, more and more potential players are invited into the game space and time. Fragmentation lowers the threshold for players to participate, and the user base is snowballing. The combination of game and social makes the user's stickiness further improve [5].

There are three kinds of social motivations that games can easily satisfy: 1) the desire for interaction based on the game itself. In many cooperative games, the special mechanics and rules of the game allow different players to socially form a whole that has the same goal of winning the game, thus allowing the values of different individuals to collide and blend. People of different genders, occupations and ages build collective consciousness and identity under the same collective goal, thus strengthening their online and offline interaction [6]. 2) Release mental pressure. People inevitably encounter all kinds of pressure in real life. These pressure moments force people to find a suitable platform to vent their discontent. Online games provide such a platform for players. Players can express their feelings to virtual characters in online games, communicate with other players anonymously, or even have a quarrel with others for pleasure. Although the Internet is not a place where people can talk freely, and each person is responsible for his or her own words, this behavior does have a noticeable effect on relieving stress. 3. Conformity effect and collective sense of belonging. The vast majority of players contact a new game because a friend recommends it. Maybe the player does not like the game, but with so many friends playing it, he or she is influenced by the effect and invested in it. The sense of belonging refers to the feeling of individual game users when

they feel recognized and accepted by the group or others, and the interpersonal relationship building of users in online games makes them feel a sense of belonging. The level of user activity in online games is often proportional to the level of their sense of belonging. When players gradually realize that their spiritual world needs to be filled by online games, the sense of belonging of players reaches its peak. Therefore, online game operators should use social systems to enhance the sense of belonging of users so as to achieve the purpose of increasing user activity.

3.2.2 Respect Needs

Respect is divided into self-esteem and respect for others. Online games, in their unique way, fulfil the users' demand for respect. Real society, as a mature system, has a fixed worldview and values, and its definition of success tends to be standardized. Therefore, it is very difficult for many people to gain respect. As a virtual world, online games have their own worldview and values, which are quite different in different games, which makes it possible for users to gain a sense of respect that they cannot get in the real world [7]. Self-esteem refers to a sense of pride in one's success. There are many ways to gain self-esteem in online games, such as defeating a BOSS in the game, defeating an opponent to win, searching for rewards in unknown areas and so on. network games for the diversification of success criteria, let users can always be in demand of self-esteem. With respect from others, online games meet users' need for respect from others in the form of ranking (points) based on their large user base. Moreover, because of the diversity of success criteria for online games, users can always find the success mode they need. After finding their own mode, users will have a way to play their own strengths to achieve success. For example, if a player is thoughtful and logical, he or she can easily complete a task in an adventure puzzle game and get a reward, thus gaining the respect of others in this mode. Therefore, online games, in respect of the demand, with their own diversified successful mode to meet the needs of users.

3.3 Cognitive and Aesthetic Needs

3.3.1 Cognitive Needs

On the cognitive side, many adventure games fulfill this need to a great extent. They construct scenes that exist in real life but are difficult to witness in the game and show physical principles, chemical equations, mathematical logic and other natural science knowledge in the game so that players can get such missing cognition on the computer screen. This is historic progress in the game industry. Games are not only a tool for people to amuse themselves but also an assistant for people to study and a precious example for people to conduct network research.

3.3.2 Aesthetic Needs

Since the game is the "ninth art", users will naturally have a certain aesthetic demand for it, and whether the scene, rules, art, CG and more of the game meet the aesthetic requirements of the mass users has gradually become a standard to measure the success of a game. Detroit: Become Human is a good example. It is a story game that can go either way, and its setting and art can be so realistic that most players feel like they are watching a movie in a movie theater. With the development of The Times, human aesthetic requirements improved, and the quality of the game naturally also improved. Counter-strike, released in 1999, had grainy graphics and blurred scenes. The game has now evolved over the past 20 years, and its progress is exemplified in Counter-Strike - Global Offensive. The development of its esports is also far beyond that of similar games. The reason why CS-GO has a high status among fps games in the world is that its exciting battles, exquisite graphics and exciting arena meet the aesthetic needs of the public.

3.4 Self-actualization and Self-transcendence Needs

3.4.1 Self-actualization Needs

These needs are manifested in two aspects: the sense of competence and accomplishment. According to the superposition of social need and respect need, both self-actualization needs can be

well satisfied. The first is the sense of competence. As a computer program, online games have the characteristics of controllable and predictable results. Users can control the progress of the game well through their own operation and understanding of the game so that it is consistent with their expectations and not affected by uncontrollable factors in the real world. A strong sense of satisfaction is obtained in the virtual world, which is difficult to obtain in the real world. The second is the sense of achievement; the users of online games are basically to get their own fun and success in the game for the purpose of participating in the online games. A medal earned after a long swim; The outcome of the story learned through the story game flow; Win the respect of others after winning competitive games. These can increase the player's sense of accomplishment and satisfy the user's need for self-fulfillment.

3.4.2 Physiological Needs

In order to meet this superlative need, electronic games have developed a novel form of the game, a high degree of freedom game. The flow of this kind of game is almost entirely in accordance with the user's personal ideas, which has a lot to do with the user's world views. To be a world-saving hero in the virtual world or to accomplish a goal that one cannot accomplish in real life are the pursuit of self-transcendence that high freedom gives players.

4. Suggestion

4.1 Based on Physiological and Safety Needs

The game design should be optimized for the senses based on the user's positioning and characteristics, with an emphasis on sight and touch. The single-action approach of traditional games is no longer novel enough to appeal to a wider audience in terms of sensory experience. Game merchants can devote their efforts to the construction of the game operating system, which is particularly important in the production of mobile games. They should integrate more interactive gestures used by human hands into the game or add functions that can be triggered by the combination of multiple fingers so that the playing method of collecting games is not limited to the cooperation of two fingers.

In terms of security, vendors and players should work together to protect the interests of both parties. Collaborative AD feeds need to be reviewed, players need to be empowered to report false ads, and portals need to be designed for players to express their opinions. In addition, make the recharge interface less attractive and limit the amount players can spend in a single day. For the behavior of buying and selling game props privately, the game is necessary to remind players to pay attention to safety through the public screen text broadcast to combat fraud. At the same time, set the game's secondary payment password to avoid game account theft after the loss [8]. It is also an important task for game operators to strengthen the protection of underage players. First of all, the underage players of the game should be identified through the real-name authentication system. The time limit of the game should be divided according to age, and the function of forcing players to go offline or halving the game revenue should be implemented after the timeout. Limit the game consumption of underage players, and game operators should timely send the top-up information to their guardians to avoid family economic losses caused by underage players' top-up and financial disputes with game manufacturers.

4.2 Based on Social and Respectful Needs

There is strong evidence, however, to suggest that the computer game has played and continues to play a role in lubricating and intensifying computer gamers' social relationships; improving their self-esteem; and providing visual pleasures, intellectual stimulation, moral guidance and a liberating sense of playfulness [9].

In the process of making games, game merchants should pay special attention to the construction and improvement of the social system so as to make it as simple and convenient as possible and not

let the complex system operation hinder people's social interaction. To build a social community on the basis of the social system, users can show their game progress, suggestions and opinions on the game, and even make friends' intention posts on the online community. This is conducive to the game's late maintenance and good development. At the same time as opening up a social network, the game operators should also pay attention to the rectification of bad social atmosphere, deal with the "gray area" of the social network, and prevent negative social activities from affecting the physical and mental health of users. In terms of respect demand, game operators should focus on the settlement screen at the end of the game, the appreciation and recognition of teammates should be obtained when the game wins, and the results or rankings can be hidden when the game fails so as to reduce the frustration of the game failure, reduce the degree of aversion of users, and retain the user base.

4.3 Based on Cognitive and Aesthetic Needs

Producers should pay more attention to and use innovative works from the art world and update their operating engines to enhance the real experience and make users feel like they are there. Producers should also focus on the educational nature of the game itself, providing users with more scenes or stories that can increase their knowledge of everyday life.

4.4 Based on Self-actualization and Self-transcendence Needs

Video games usually show the value orientation of the game through the appropriate worldview, but the values of the game should not blindly cater to the tastes of the players; the game should have its own value positioning and clearly convey the positive game concept and value pursuit to the players. As with most narrative games, the player will choose to do different things at different points in the story, which will ultimately affect the outcome of the story. A game with multiple endings is the type of game that is scarce in today's game market. It can enable everyone to think in the process of playing, put their own thoughts into the game characters, make the game characters act according to their own will, and gradually realize themselves in the game and complete the ideal in the virtual world

The video game development process must focus on user satisfaction. Failing to comply with this may jeopardize the success of the videogame and even put at risk the owner company. Requirements Engineering is essential to elicit the needs and desires of the systems' stakeholders involved in the development, purchase and use of the videogames. The elicited requirements are the basis for the game specification document, which is then the major driver for the construction of the videogame. The success of a game involves concerns such as game strategy, plot and goal of the game, attractive interfaces, efficient algorithms, and, very importantly, the emotions that the game triggers in its players [10].

In cooperative, competitive games, the role of players can not only be limited to "participants" but sometimes can be "leaders". Through their own intelligence, they can think out coping strategies and lead the team to win, which is self-transcendence. Games with high degrees of freedom are more likely to appeal to different demographics.

5. Conclusion

After analyzing the needs of video game users and combining the psychological needs theory, the important reasons for the development and dissemination of video games are obvious: social needs and self-realization needs. The successful development of video games over the past several decades is due to its insistence on satisfying the relational needs of psychological needs theory, that is, keeping its products fresh in front of users and making users feel a sense of belonging every time they play games, which is due to the construction of perfect social functions of games. In terms of self-realization, in the process of development, video games combine the needs of users for autonomy (satisfaction) and competence (sense of existence) and constantly construct and improve the story, cooperation system, world outlook and values of the game, so as to get more attractive works for

mass users. This study fills the gap in the research of users' demands of virtual products, has reference value for enterprises and producers related to virtual products, and provides theoretical support for them. This study also has some shortcomings, such as not having an in-depth analysis of a case and not a more specific study of a demand relationship; the next research will make corrections and supplements.

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