

# ***Examining User Viscosity in the Mobile Gaming Market: A Case Study of Mihoyo***

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**Abstract:** Although the mobile game industry is still growing, its rate has gradually slowed. Due to the background of the Chinese mobile game license crunch, mobile game companies need to adapt their production models and focus on improving user retention. This report begins with a basic introduction to the current situation of the mobile game industry. It then analyzes existing research on user retention and uses Mihoyo as a case study to explore why its user retention rates are higher than other companies. The report provides a reference for other mobile game companies through this case study. The study found that Mihoyo's competitive advantage in user retention comes from its high-quality products and engagement with platforms that target the same audience. In addition, Mihoyo's game development approach, which focuses on building intellectual property (IP), encouraging user-generated content, and creating a solid community that fosters a "game-creator-player" relationship, are also critical factors for its success. Other mobile game manufacturers should focus on improving game quality, carefully selecting partners, developing IP across multiple industries, and actively engaging with users.

**Keywords:** user viscosity, mobile gaming market, Mihoyo

## **1. Introduction**

With the upgrading of wireless network technology and the widespread use of mobile value-added services, mobile games are developing rapidly based on network technology and mobile phone devices. Since the outbreak of COVID-19, the mobility of the nation's residents has been significantly reduced, stimulating the rapid growth of industries related to the "otaku" economy. Changes in people's consumption habits may further benefit the long-term development of the "otaku" economy [1]. The actual sales revenue of China's mobile game market in the first half of 2020 was RMB 104.673 billion, an increase of 35.81% year-on-year. By the first half of 2020, the scale of Chinese game users reached 657 million, an increase of 1.97% over the same period last year, with the growth rate of user scale slowing down [2]. The survival and development of small and medium-sized mobile game startups have become more difficult due to the monopoly of the leading companies in China and the fading of the dividend of the mobile game industry [3]. The tight political conditions of the Chinese version number have made the old marketing methods of winning by volume uncompetitive, and mobile game companies have to focus on the retention of old users while continuously attracting new ones. How to increase the viscosity of users has become an important issue that needs to be addressed urgently. In addition, there are still some problems

related to user viscosity in the handheld game industry, such as capital operation focusing on business, cultural connotation needing to be enriched, and channel selection being more chaotic [4]. In this paper, we study the companies with high user viscosity in the current handicraft industry so that more handicraft manufacturers can learn from them to improve user viscosity. It provides practical guidance and suggestions for developing the entire mobile gaming industry and the survival of small and medium-sized mobile gaming start-ups. The rise of MihoYo in recent years has brought many strategies to the mobile game industry, and its high user stickiness is something that many other mobile game manufacturers can only seek but cannot obtain. This paper includes previous research on user stickiness and applies the factors of user emotion, user experience, and game quality to the case study of MihoYo. At the same time, the case study of MihoYo explores the competitive advantages that distinguish it from other game manufacturers, summarises the competitive advantages, examines the reasons why its user stickiness is higher than that of other mobile game manufacturers, and based on the results of the analysis, comes up with a summary of methods and guiding suggestions to improve user viscosity. Finally, it provides new ideas for other game manufacturers to improve user viscosity.

## 2. Literature Review

The rapid development of the mobile gaming industry over the years has led mobile gaming companies to try to secure their position in the industry. This requires companies to analyse and study the psychology, consumer behaviour and preferences of their target audience, as well as to conduct post-market research to identify the shortcomings of the game and the needs of the target audience, and to make improvements. A great deal of research has been done on these issues by various scholars [5]. There needs to be more exploration of the importance of user stickiness in the context of the current slowdown in the gaming industry. Among the few studies, the impact on user viscosity can be broadly categorized into user social emotion, user immersion experience, and game content quality. Wu studied the issue of user stickiness overload and concluded that social demand, service quality, and content quality significantly impact user stickiness overload [6]. Du argues that users' cognitive, emotional, and sensory factors can affect their perception of the value of the game, which in turn affects user stickiness; the immersive mind-flow experience can also significantly affect users' perceived value, which increases user stickiness [7]. Li believes that perceived usefulness, interactivity, entertainment, and game design factors have a significant positive effect on immersion experience, immersion experience has a significant positive effect on user viscosity, and immersion experience has a mediating effect between perceived usefulness, interactivity, entertainment and game design factors and user viscosity [8]. Duan et al. concluded that mind-flow experience is an essential factor influencing mobile game user stickiness, and interactivity, remote perception, usefulness, and perceived control significantly positively affect the mind-flow experience [9]. Martinez and McAndrews, after studying the impact of three types of mobile design features on user stickiness intentions through a stimulus bio-response model using a conditional process model, concluded that arousal emotions are the most important of the user affective factors, with pleasure emotions being relatively minor and dominant emotions having no impact on user stickiness [10].

MihoYo, known as Shanghai MihoYo Network Technology Co., Ltd, Genshin is a global multi-platform open-world game launched by the company in September 2020, which has been downloaded nearly 37 million times worldwide in just three months and has generated over US\$1 billion in mobile revenue as of November 2020 [11]. Looking at the market landscape of the Chinese gaming industry from 2017-2021, Tencent and NetEase account for a combined proportion of the market size of the Chinese gaming industry (domestic + overseas), from 51.70% in 2017 to 57.45% in 2021. Still, it is difficult to capture more market share further. This is mainly due to the

rise of new gaming powerhouses such as MihoYo, Lilith, Eagle Horn Network, Stacked Paper Games, and Kuro Games in recent years. Among them, MihoYo's revenue in 2021 exceeds RMB 20 billion, which is conservatively estimated to be 4.85% of MihoYo's market share in 2021, and 7.27% of MihoYo's market share in 2021 if it is optimistically estimated at RMB 30 billion (Source: Lingang Group). MihoYo has rapidly risen from the scale of a small to medium-sized manufacturer to a gaming powerhouse with breakout games such as "Honkai Impact 3" and "Genshin" and is currently ranked as one of the Top 3 Chinese mobile game publishers in terms of global revenue.

### **3. Competitive Advantage Analysis**

#### **3.1. Excellent Game Quality**

In the current environment of handheld games, there is an excellent variety of games, the gameplay is constantly being innovated, and the quality of game graphics is continually improving. Due to the increasing user demand for game quality, many games emphasize spending time on repeated participation in the game in exchange for numerical improvements to the character to enhance user stickiness. However, the basic graphics and action of games have been overshadowed by various marketing tactics, and comparisons of game quality are more dependent on the competition for capital. At the same time, manufacturers have neglected the importance of game storylines and characterization. Such choices can lead to viscosity overload and resistance to the game from players.

Against this background, MihoYo has continued to invest in R&D and advanced technology accumulation, accumulating a series of core technologies, such as "postfix", "Animex", "3D animation layered coloring technology", and "s-expr-based data-driven logic technology", making the company's products a leader in the industry in terms of graphics rendering, data processing speed and system architecture design. The graphics quality of MihoYo's games is often among the industry's top, and such quality becomes the first step in attracting players to stay. In addition, MihoYo has also independently developed several patents, mainly oriented towards technologies in game production, such as the patent for "method, device, electronic device, and storage medium for modifying the metafile of resource files" and the patent for "method, device, electronic device and storage medium for costume change". These patents can help MihoYo's games have better game performance effects and bring players a smoother gaming experience.

In addition, the storylines of MihoYo's games are also carefully designed with a great deal of thought and care. The background, image, lines, skills, and relationships of each character in the game are all based on a great deal of theory. Every character is fleshed out, and every episode is well thought out.

#### **3.2. The Innovative Choice of Partners**

There is a close relationship between mobile games and mobile phone operators. In the early years, mobile games were only available on the operators' app stores, such as the APP Store or Google Play, and users had limited access to new games. In negotiations with operators, game manufacturers were often at a disadvantage and had to resort to various tactics to gain more exposure. Well-known game makers NetEase's "onmyoji" and MihoYo's earlier game "Honkai Impact" have also chosen to partner with operators for distribution. However, in contrast to other handheld game makers who have chosen to work with mobile app shops, MihoYo has recently innovated by choosing partners with similar audiences to its products. At the beginning of a new product launch, the company mainly conducts small-scale publicity and promotion on platforms or communities with a high concentration of secondary yuan users to attract two-dimensional core users to experience the company's games. For example, by promoting and partnering with two

dimensions websites such as Bilibili and Tap Tap, the company can get better market feedback and voice and receive more shares than the APP Store and Google Play.

### **3.3. An Industry-leading Model of Multi-product Line Operation Centered Around Well-known Original Ips**

In the handheld game market, there are two types of IPs: new IPs created by oneself and mature IPs cooperating with other well-known IPs. Mature IPs have the advantages of a large fan base and adult content. Still, cooperation with famous IPs has disadvantages for handheld game manufacturers, such as copyright disputes and slow user expansion. In contrast, new IPs created in-house can play a central role in the main IP-based, multi-product operation. Most of China's more profitable handheld games are partnered with established IPs, which limits a multi-product line operation strategy. However, MiHoYo focuses on a game development approach with IP building at its core. MiHoYo has made the original IP "honkai" an ongoing development that is already one of the few successful examples in the industry. Using the original IP as the core to build various peripheral products, such as animation, music, and toys is even more of an industry-leading business model. In terms of novels, MiHoYo has "Durandal"; in terms of energy, it has produced the anime of the same name, "honkai impact 3", and has a music team HOYO-Mix. These initiatives help to attract new users from other pan-cultural circles.

### **3.4. We Are Building a Community of "game-creator-player" Relationships.**

For the Chinese handheld game industry, a few years ago, most manufacturers still focused on developing single-player games, and even online games needed more experience in handheld game operation. Hence, the interaction between officials and players mainly relied on forums or self-made promos. However, the need for a platform to express themselves makes it difficult for players' voices to be heard. Even the few players who organize their communication platforms or re-creation content are likely to be sanctioned by officials for disputes over interests. Although these situations have improved over time, active communication between officials and players is still not efficient enough, as the content related to a game on the web is still officially dominated by its release.

MiHoYo places a high value on players' passion for creativity by actively reposting and interacting with quality re-creation content and encouraging and acknowledging players' re-creations. Currently, MiHoYo's Genshin impact vlogger Incentive Programme, in collaboration with bilibili, has been successfully held for several sessions, with a total of more than 3.06 billion views and over 49.74 million discussions. The video with the highest play count has exceeded 17 million times, and as many as nine videos have reached 10 million plays or more.

At the same time, MiHoYo has also built its game player community MiYo community. It is part of building a player ecology, where players can chat about games, find tips and receive rewards. Officials pass on various information to players through the MiYo community, and players actively interact with officials and other players through this platform.

## **4. Analysis of Corporate User Viscosity**

### **4.1. Impact of Game Quality on User Viscosity**

MiHoYo's philosophy has been "to make games that exceed users' expectations" from the earliest days of Honkai impact to Honkai impact three and now to Genshin. The company produces games at the top of the industry in every aspect, based on various core technologies that it has developed in-house. Gamers have well received these games for their beautiful graphics and excellent action.

Such fantastic pictures and steps make the games highly sticky for users. Even today, like the release of Honkai impact 3 in 2016, the games are still in the top tier of the handheld market, with impeccable combat fluidity and graphical tension. Such game quality reduces the likelihood of users leaving, as they will not be looking for other games because of better graphics or action.

In addition, MiHoYo has a core focus on making content and is constantly releasing updated content. The company is positioned to make content games similar to American TV shows, such as Prison Break, which introduces new episodes, new characters, etc., every season. On the other hand, the content of MiHoYo games is reflected in the character stories, worldviews, etc. New characters and new events are at the core of MiHoYo. For example, every time Genshin introduces a new character and new storyline, it is accompanied by a spike in user recharge and online attendance. This premium product packaging and enjoyable storyline characters have led to a high level of user stickiness for Genshin, both in terms of gameplay and content.

At the same time, the Chinese gaming industry has been affected by the tightening of online game publication numbers, and the past profit strategy by quantity is no longer applicable. After experiencing the serious homogeneity of flow games based on numerical payment, Chinese gamers gradually choose young game genres, such as two-dimensional games focusing on content service and quality. The quality of content is also the key to the long-term operation of two-dimensional games, and the policy contraction of online game publication numbers has side-stepped the development of quality-oriented game manufacturers.

#### **4.2. The Impact of Working with Partners with Similar Users**

The users of Mihoyo and its partners are Generation Z users. These users are typically well-educated and culturally confident, focused on spiritual experiences, and willing to pay for the time and money associated with hobbies and new things. They are active in the online virtual space and often share their lives and work via the internet. These users' interest circles are often more vertical and have a strong sense of belonging and engagement. Core two-dimensional users are happy to interact with friends with similar interests. Once they identify with a company's product, they strongly recommend it to their friends, thus creating an effective word-of-mouth spread. Before the release of MiHoYo's Honkai impact 3 and Genshin, the company usually collaborated with companies such as Bilibili or Tap Tap for promotion. This method of advertising not only reduces the split with platforms such as the APP store and Google play and allows for more precise and practical upgrades to target users.

In the early days, Tencent and NetEase rarely partnered with these types of sites for their games. They preferred to advertise to all mobile game users on all fronts or to work with the more popular media of the time, such as Weibo or Youku. In contrast to Mihoyo, this type of promotion needed a first screening of users. Similarly, the users of NetEase's Harry Potter: The Hogwarts Legacy were mainly fans of the Harry Potter IP. Due to NetEase's choice of promotional channels and the timing of the Harry Potter IP's popularity, the user base is more likely to be slightly older working adults. These users usually only have a little time to play games, and their enthusiasm for the game mainly comes from sentiment, which is an expendable item. Once the idea is depleted, the stickiness of the users will be significantly reduced.

#### **4.3. The Impact of Operating Around Original IP on User Stickiness**

With its original game's main IP as the core, MiHoYo has established a corresponding industry chain of derivatives, which includes animation, variety shows, music, artist agents, comics, novels, set collections, clothing, toys, concerts, dance shows, and more. The business model not only attracts consumers to purchase derivative products or content but also raises the popularity of the

game IP, expanding the circle of users and allowing more people to understand and experience the cultural content of the IP. The IP-centric business model of multi-product line operation can reach more people with richer forms of IP derivatives, attracting different user groups to pay attention to the game IP and achieving a broken circle of the game user population. Through innovative products and content, MihoYo can trigger a spreading effect and reach users with high frequency, thus establishing a highly sticky and active IP culture ecosystem. From the perspective of the ACG industry, and with deep insight into the needs of the new generation of users, MihoYo uses its strong content packaging capabilities to create original game IPs and use them as a fulcrum to pry the most extensive circle of users among the global pan-two dimensional users.

For example, MihoYo's industry chain related to the Genshin IP includes anime, novels, comics, and clothing. This helps MihoYo to draw in new users from other pan-cultural circles (such as anime, books, and comics) and existing users involved in multiple cultural processes. This can make the connection between the user and the IP even closer, so even if the user drops one of the products for some reason, the remaining products will also function as an IP, thus making the user more sticky.

#### **4.4. The Impact of the "game-creator-player" Relationship Link on User Viscosity**

The re-creations on MihoYo's IPs and APPs, including the MiYo community and other APPs, have been widely spread through the network effect. Users actively participate in producing and distributing re-creation content for IPs, creating a highly sticky IP culture circle. By encouraging players to develop re-creations, the company nurtures vloggers and increases the game's spread. Vloggers may earn significant revenue by creating quality re-creative content, and users will increase their enjoyment of the game due to excellent re-creative content. Therefore, while users accept quality re-creative content, it also increases the stickiness of the re-creative creators to the game, and the two reinforce each other to increase the stickiness of users. The official community spreads the interaction between users and creators to a broader public through the internet and attracts new users or strengthens existing users' love for the product through diverse and quality content. Users can learn about information related to the game on occasions outside the game, which can also increase their stickiness to the game.

### **5. Management Insights**

Although the scale of China's gaming market is still expanding, the industry's demographic dividend is nearing saturation, the increase in gaming users is on a downward trend, and the gaming industry is gradually entering the era of inventory management. The monopoly dominated by Tencent has an absolute advantage in the Chinese market. Relying on the super high coverage of its other communication platforms, promotion costs are much lower than other companies, but it has a great scope of promotions. At the same time, Tencent's studios learn to produce excellent Chinese and foreign games and promote them extensively. This mode of operation has been highly successful in the gaming industry and has constrained the creative atmosphere in the gaming industry to a great extent.

Against this backdrop, MihoYo adheres to its strategy of "providing products and content that exceed users' expectations" and has chosen to target two-dimensional users, creating high-quality two-dimensional products and dominating the market with innovative strategies. While other manufacturers are still developing traditional games that focus on top-ups to improve numerical values, MihoYo focuses on the quality of the game's content. Compared to traditional handheld games, such an innovative strategy can better enhance the stickiness of users. Users do not only

play and top up for the value of the game but also the characters or certain storylines, and some players even top up out of faith.

At the same time, MihoYo has adopted a disruptive partner strategy, targeting the user base of its products - Generation Z - and websites that love two-dimensional culture. The Generation Z crowd is heavily influenced by two-dimensional culture, with pan-two-dimensional users accounting for as much as 95% of them. These users are active in the Chinese long-form video, gaming, and comics sectors. Partnering with these sites will bring more Gen Z flow to MihoYo, which is also an important reason for MihoYo's high user stickiness.

Then, MihoYo uses its substantial and diversified IP shaping ability to rapidly expand the influence of the IP through the Internet effect and promote and support it on the official community and two-dimensional creative works to attract more new users from different fields. At the same time, the user stickiness of old users is continuously enhanced through an excellent positive feedback loop.

MihoYo has achieved its first successful work through two-dimensional culture and excellent game quality, attracting many Generation Z users. MihoYo cooperates with two-dimensional websites during its operation, enhancing users' stickiness through word-of-mouth transmission from core users. At the same time, it effectively utilizes the industry-leading model of operating multiple product lines centered on original IPs to reach out to users at a high frequency and increase user stickiness by encouraging them to create re-creations and actively interact with each other. All of the above has resulted in MihoYo's users loving their favorite games and the characters in them, both online and in real life, and the number of daily active users of its games is quite impressive. In the face of pressure from the leaders of the Chinese gaming market, MihoYo has gradually developed into one of the giants of the gaming market thanks to its superior product quality and higher-than-industry user stickiness. MihoYo's successful experience provides ideas that can be used to improve user stickiness in today's environment of the mobile gaming industry.

## 6. Conclusion

For other handheld game manufacturers, this paper makes the following suggestions through the analysis of MihoYo's case: firstly, it should focus on the quality of the game itself and the improvement of its content, including the plot and characterization, to improve users' identification and satisfaction with the game. Secondly, partners with similar target groups should be chosen for better cooperation results. Thirdly, it should develop a multi-product line business model around the main IP to bring the influence of the IP to other cultural circles outside the game and further increase the stickiness of users. Finally, an official and user communication platform should be created to interact with users and improve their stickiness through re-creation actively.

It should be noted that the research subjects in this paper are all Chinese handheld game manufacturers, so there are certain limitations. In addition, as MihoYo is only a company focused on game production, the findings of this paper are not necessarily applicable to the game departments of larger companies. User stickiness will remain a key concern for manufacturers who profit from handheld games. Still, the emergence of new business models with low user stickiness but high corporate revenue cannot be ruled out in the future. As research into user stickiness intensifies, analysis in conjunction with psychology may become a trend.

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