

Application of Harvard Analytical Framework in the Game Industry: Take NetEase as an Example

Wanlin Chi^{1,*}

¹The Affiliated International School of Shenzhen University (YHV), 518000 Shenzhen, China

Abstract. The Chinese game industry has been growing rapidly in the past decades and now has the biggest market share in the world. It is important to analyse the game industry in China, especially focus on a specific company. This paper applied the Harvard analytical framework to analyse NetEase, one of China's biggest game companies. By conducting strategic analysis, financial analysis, and prospect analysis, this paper highlighted the advantages and disadvantages of NetEase. This paper provided a comprehensive understanding of the Chinese game industry. Through analysis under the Harvard analytical framework this paper found four problems impeding the development of NetEase, which include reliance on single income source, loss in popularity, fewer benefits from scale economy and regulatory restrictions. Finally, to solve the problems this paper proposed several suggestions for NetEase aiming to help the company encounter the obstacles in its development as well as provide useful references for other companies in the industry.

1 Introduction

The idea of the Harvard analytical framework was first proposed by three professors at Harvard University, K.G. Palepu, P.M. Healy, and V.L. Bernard in 2000. Compared with the traditional analytical method, the Harvard framework is a combination of strategic analysis, accounting analysis, financial analysis, and prospect analysis. The strategic analysis provides an overview of the situation of a company while accounting and financial analysis focus on the three basic financial statements to work out various measures of the company. The prospect analysis provides predictions and suggestions for the future development of the company. Taking both qualitative and quantitative measures into account, the Harvard analytical framework is considered as an ideal tool in enterprise financial statement analysis [1, 2].

Harvard analytical framework has already been applied to various industries, such as electronics [1], e-commerce [3], entertainment [4], new energy [5], and soft drinks [6]. However, few studies applied the Harvard analytical framework to the game industry.

The Chinese game industry has been growing in the past decades. In the 1990s, video games were regarded as harmful things. Video games were strictly prohibited by the government and criticized by the media [7, 8]. As more and more Chinese started to accept video games, the industry started to grow rapidly and succeed in catching up with South Korea, Japan, and the United States in the 20th century [9]. At present, China is the largest game market in the world, with a revenue of 265 billion RMB and a user base of over 664 million people.

This study analysed NetEase, one of the greatest game companies in China, aiming to provide a comprehensive analysis of the Chinese game market.

2 Introduction of NetEase

Founded in 1997, NetEase is currently one of China's leading internet companies. Its main businesses include games, music stream, e-commerce, and education.

As one of the pioneers in China's online games market, NetEase developed and operated some of the country's most enduring computer and mobile games. Popular titles include Fantasy Westward Journey and Westward Journey Online which have retained loyal player bases for over 10 years.

In music services, NetEase Cloud Music has become one of China's top streaming platforms with over 800 million users drawn to its expansive music content library, community features, and online karaoke offering. By supporting independent musicians and digital album releases, NetEase Cloud Music provided an important platform for music distribution in China.

More recently, NetEase has expanded into online education by launching platforms like Youdao which provide test preparation courses, professional skills classes, and other offerings. NetEase is also actively developing innovative technologies in areas like intelligent learning and voice platforms, leveraging its strong research and development capabilities.

During over 20 years of operations, NetEase has cultivated a user base of nearly 1 billion registered users. Its ability to identify growth opportunities in China's evolving internet landscape, develop industry-leading products, and foster long-term user relationships has

* Corresponding author: 1911511221@mail.sit.edu.cn

made NetEase a respected internet technology leader within China and globally.

3 SWOT analysis

SWOT analysis is a widely used tool for analysing the internal resources and external environment of an organization. It focuses on mainly four aspects: Strengths, Weaknesses, Opportunities, and Threats, where Strengths and weaknesses are internal factors and Opportunities and threats are external factors. Considering factors in these four aspects enables the organization to develop or improve its current strategies [10,11].

3.1 Strengths

Currently, NetEase has the second largest market share in the domestic game market, occupying around 20% of total market shares, higher than most small and middle-scale game companies.

As for the overseas market, the overseas revenues of NetEase ranked third among Chinese game companies in 2019. The revenue from overseas markets occupied more than 10% of NetEase's net revenues in 2018. NetEase games are especially successful in the Japanese market. The games Knives Out and Identity V ranked sixth and eighteenth separately in the Japanese IOS mobile games ranking.

Other than video games, NetEase has other sources of income such as music streaming, e-commerce, and education. A diversified revenue stream reduces risk in a particular industry.

3.2 Weakness

Although NetEase has diversified revenue streams, it still heavily relied on its gaming services. In 2023, revenues from video games and relevant services contributed over 80% of NetEase's net revenues. Hence decline in its game popularity would greatly affect the performance of NetEase.

As a gaming company, NetEase faces several intellectual property issues. For example, its game Identity V is being accused of copying another game Dead by Daylight.

3.3 Opportunities

As the largest game market in the world, China occupies around 28% of the market shares of the global game market. Operating in China provides NetEase with great development opportunities.

NetEase can also take advantage of technological developments such as artificial intelligence, big data, and cloud computing, which allows NetEase to lower costs and increase efficiency.

3.4 Threats

The intense competition in the Chinese game industry is a potential risk for NetEase. The domestic game market is saturated with competitors such as Tencent. As the main competitor of NetEase, Tencent has a much higher market share, a larger player group, and more funds.

Other than current competitors, new entrants in the game market also make threats to NetEase. Compared with 2018, the market shares of NetEase and Tencent both declined by 10% in 2021 due to the rise of small-scale companies such as Mihoyo.

4 Financial analysis

To conduct the financial analysis of NetEase this article chose Tencent, the largest game company in China as a comparison.

4.1 Solvency analysis

4.1.1 Flow ratio

The flow ratio is a solvency analysis metric that compares a company's cash flow to its total debt obligations. It measures how well the company can cover its debt payments using its cash flow from operations. The flow ratio can be calculated by cash flow from operations divided by total debts.

It can be seen from Fig. 1 that the flow ratios of both companies were affected by the pandemic in 2020. In 2019, Tencent was the company with the highest flow ratio at around 62% while NetEase was at approximately 40%. All three companies experienced growth in 2020. After 2021, all three companies were somehow affected by the economic downturn caused by COVID-19. The flow ratio of Tencent fell by 30% while that of NetEase remained unchanged. The flow ratio of NetEase was relatively constant, decreasing by only 4%.

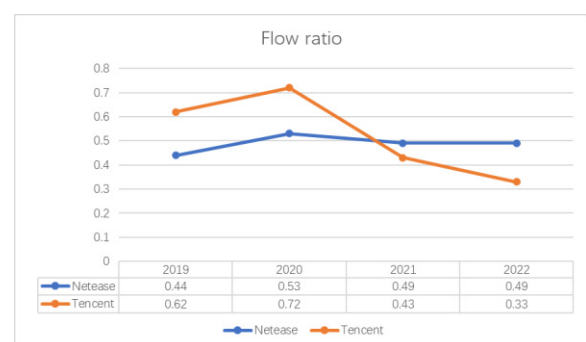


Fig. 1. Comparison of flow ratio (Photo/Picture credit: Original)

Although NetEase had no outstanding performance in its flow ratio in the four-year period, it was more stable than Tencent. This showed that the solvency of NetEase was more resistant to macroeconomic events.

4.1.2 Asset-liability ratio

Fig. 2 showed the Asset-liability ratio of the two companies from 2019 to 2022. The asset-liability ratios

of both companies were above one, indicating that they were relatively stable in finance.

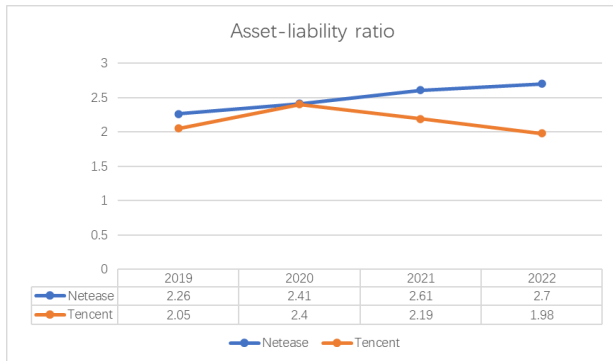


Fig. 2. Asset-liability ratio (Photo/Picture credit: Original)

The asset-liability ratio of NetEase kept growing in the 4-year period, increasing from 2.26 to 2.7. While the asset-liability ratio of Tencent grew in the first two years and decreased in 2021 and 2022. Such a decline was caused by the recession after the pandemic.

The comparison in asset-liability ratio showed that NetEase had improved in financial health in the past four years despite the influence of COVID-19.

4.2 Profitability analysis

Profitability refers to a company's ability to generate profits or net income. It is an important metric that investors and analysts use to evaluate and compare companies' financial performance.

It can be seen from Fig. 3 that there was a constant growth in the gross profit margin of NetEase in the past four years, which showed that the profitability of NetEase was continuously increasing. Compared with Tencent, NetEase has higher profitability.

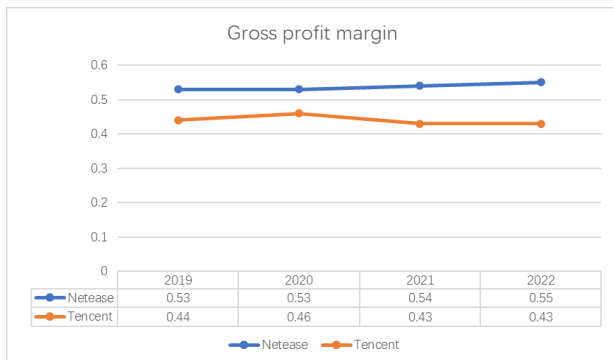


Fig. 3. Gross profit margin (Photo/Picture credit: Original)

4.3 Operating capacity analysis

As shown in Fig. 4, Fig. 5, and Fig. 6 the operating capacity of NetEase was relatively stable in the past 4 years. Its inventory turnover and accounts receivable turnover gradually increased from 2019 to 2020, indicating that NetEase had improved in its efficiency. The total asset turnover of NetEase stayed at a constant level in the period, which showed that the efficiency of

NetEase using its assets was unchanged in the past four years.

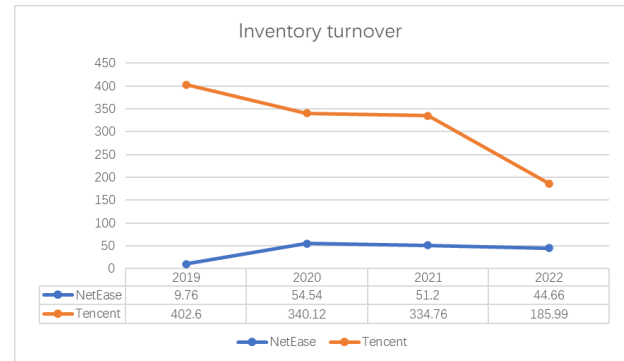


Fig. 4. Inventory turnover (Photo/Picture credit: Original)

Compared with Tencent, NetEase outperformed Tencent in Accounts receivable turnover and total asset turnover but still had a lower inventory turnover than Tencent. The main reason for this was that Tencent was a company that focused solely on software while NetEase also produced hardware. Hence it was easier for Tencent to sell or used its inventories.

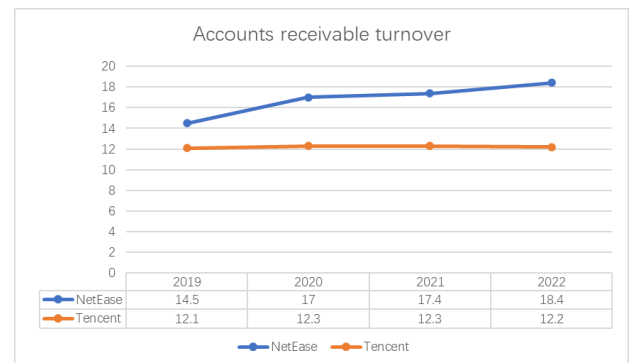


Fig. 5. Accounts receivable turnover (Photo/Picture credit: Original)

Overall, NetEase has shown a better performance in operating capacity than its peers and it is expected to continue to grow in the coming years.

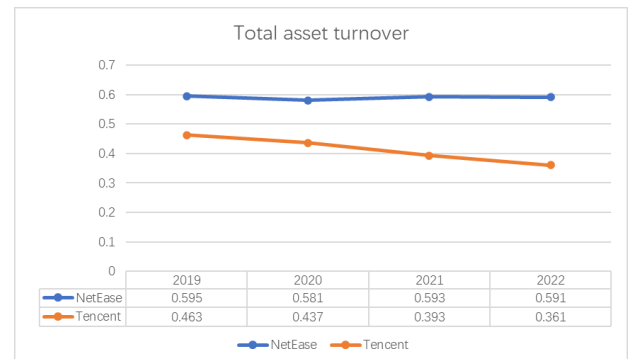


Fig. 6. Total asset turnover (Photo/Picture credit: Original)

5 Prospect analysis

The Chinese game market has experienced rapid growth over the past decade and is now the largest game market

in the world. This growth is expected to continue in the coming years, with total game revenue forecasted to increase at around 8-10% annually.

Mobile games currently dominate the Chinese game market, accounting for over 70% of total revenue. It is expected to continue expanding as a larger proportion of the population would own smartphones. However, it is also worth noting that the number of computer and console gamers in China is also increasing due to increasing disposable income. As more Chinese people have more money to spend, they are able to afford to buy gaming consoles and computers.

The international expansion of Chinese gaming companies will be another key trend. Taking already popular titles overseas indicates a huge revenue opportunity and Chinese firms are looking for a greater share of the global gaming market.

Esports and professional gaming have also seen tremendous interest and growth in China recently. The number of audiences has continued to increase in recent years.

However, government regulation and censorship policies remain a challenge for Chinese gaming companies. Stricter rules on game content and the release of new games restrict revenue growth over the past years. Regulations will continue impacting the market in the near future.

6 Problems of NetEase

6.1 Reliance on single income source

Currently, the main products of NetEase are all mobile games, which cover over 80% of NetEase's game revenue. The reliance on a single income source would cause NetEase to be exposed to certain risks. NetEase has to find a way out of this situation.

6.2 Loss in popularity

Since 2020 the market shares of NetEase have been decreasing, indicating that NetEase has lost part of its competitiveness in the market. The main reason for this is the new entrants in the game market. In recent years, the development of social media allows start-ups to advertise their games at a relatively low cost through short videos, live streaming, and so on. This has caused NetEase to lose part of its advantage in marketing.

6.3 Fewer benefits from scale economy

As the influence of economics of scale is less dominant in the game industry than in other industries, small companies can produce at a similar cost as the big companies. Hence NetEase cannot gain many benefits from its scale.

6.4 Regulatory restrictions

The increasing government regulations on the game industry also pose a challenge for NetEase. The restrictions on juvenile players have caused NetEase to lose a considerable number of players. On the other hand, the government is decreasing the number of licenses each year, which means that the number of games that are allowed to release each year is limited.

7 Suggestions for NetEase

7.1 Expand into other platforms

As mobile games are still a large market, NetEase should continue to develop new mobile games and create new IPs to ensure its competitiveness in the market. However, the rise of personal computers (PC) and console games also provides opportunities for NetEase. Currently, the domestic PC and console market is dominated by foreign games. Developing new PC and console games can help NetEase diversify its risks and expand its user base.

7.2 Increase popularity through esports

NetEase has the funds to raise esports tournaments, which is an advantage against small and middle-scale companies. By holding esports tournaments, NetEase can advertise its game and build up consumer loyalty.

NetEase already operates some esports tournaments but has room to grow its presence with more leagues, events, and streaming partnerships. And as virtual reality technologies mature, NetEase should evaluate how they may enhance gameplay for certain titles.

7.3 Explore new technologies

The development of new technologies such as artificial intelligence has provided NetEase with an opportunity. As a large company, NetEase has enough funds for these areas. By investing more in research and development, NetEase can develop new techniques and production methods to lower its production costs.

7.4 Keep a close relationship with the government

To avoid regulatory risks, NetEase must closely monitor government regulation. Compliance with rules will likely impact revenue channels, but violation could mean games getting blocked completely. NetEase should adapt its pipeline based on regulatory shifts, even if it means delaying or cancelling titles that no longer meet requirements.

8 Conclusion

The Harvard framework offers a comprehensive analysis of NetEase's strategic positioning. The key strengths of

NetEase are strong intellectual property, overseas growth, and diversified businesses. The financial analysis showed that NetEase had a steady performance compared to its peers. However, increased government regulation and reliance on mobile games are the main challenges that NetEase must face. NetEase should expand into PC or console gaming, develop esports, and closely track policies.

Although Harvard analytical framework provides a multi-faceted review of NetEase's strategic landscape, there are certain limitations to it. Harvard analytical framework simplifies complex organizational realities. The framework breaks an organization down into tidy components, but organizations have blurry boundaries and dependencies across elements. As a static model, it does not account for organizational changes over time. In reality, organizations evolve, but the framework only provides a snapshot at a certain time. Future studies should focus on the refinery of Harvard analytical framework by considering more factors such as cultural and political factors.

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