



Valuation Analysis of Mergers and Acquisitions in the Gaming Industry: A Case Study of Tencent's Acquisition of Supercell

Chenyu Zhou

The School of International Law, China University of Political Science and Law, 102249
Beijing, China
g22301021@cupl.edu.cn

Abstract. This study examines the complex problem of intangible asset valuation in the gaming industry, focusing on Tencent's acquisition of Supercell in 2016, through a combination of theoretical valuation methodologies in cross-border mergers and acquisitions. This study reveals the limitations of the cost approach and income approach in the valuation of the gaming industry. The cost approach causes substantial valuation impairment due to its inability to quantify the asset-light enterprises, and the income approach is subject to the constraints of the high iterative nature of the gaming industry and product life cycle uncertainty, which results in significant prediction deviations. This study validates the market approach by calculating Supercell's market value based on the average price-to-earnings ratio of small and medium-sized game companies in Europe, then extrapolates the market discount due to cross-border mergers and acquisitions risks. The results of the study reveal that the Price-to-Earnings ratio model in the market approach accurately matches the transaction value after adjusting for risk discount factors. This research concludes that asset-light valuation in the gaming industry should utilize industry-calibrated Price-to-Earnings ratio and dynamically incorporate non-financial risk discount factors.

Keywords: M&A Valuation, Gaming Industry, P/E Ratio Model.

1 Introduction

The gaming industry is growing at an extremely fast pace, and its market scale and strategic value continue to grow. China's game industry revenue has surged from 18.5 billion yuan in 2008 to 450 billion yuan in 2024, and the user scale has expanded by nearly 10 times [1]. However, the competition pattern in the domestic market is highly saturated - Tencent and NetEase are the two giants occupying 62% of the industry's total revenue, while 590,000 small and medium-sized manufacturers only share 20% of the market, and the head effect is forcing the enterprises to seek for incremental space through cross-border merger and acquisition. At the same time, China's self-developed game revenue reached US\$18.56 billion in 2024, confirming that globalization layout has become an inevitable choice for head enterprises, while Tencent and other giants

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have invested more than US\$10 billion in merging and acquiring 32 overseas gaming companies over the past decade, underscoring the core position of cross-border mergers and acquisitions in breaking through the bottleneck of the domestic market. However, the asset-light nature of the game industry, which is dominated by intangible assets, makes traditional valuation models face serious challenges. The cost approach cannot quantify intangible assets such as IP and user ecology. The income approach cannot accurately predict the market of the game industry, which is characterized by extremely fast iteration. The market approach, which compares companies to similar publicly traded entities, offers potential advantages but requires careful selection of comparable companies and appropriate valuation multiples. This research addresses a critical gap in the existing literature by providing a comprehensive analysis of valuation methodologies specifically applied to gaming industry M&A transactions. This study takes Tencent's \$10.2 billion acquisition of Supercell as a case, adopts a combination of theoretical comparison and case studies, and constructs a P/E ratio valuation model in the gaming industry by studying the average P/E ratio of small and medium-sized gaming enterprises in Europe and anchoring the value of the benchmark, aiming to establish a dynamic valuation paradigm for cross-border M&A of asset-light gaming enterprises, which will provide a good opportunity for investors to circumvent pricing bias, the market to perfect the transaction mechanism, and the acquiree to realize the value of its investment.

2 Literature review

In industries like gaming, where data assets are abundant, intangible assets account for a large portion of the company's value during valuation. At present, the main intangible asset valuation methodologies commonly used in theory and practice are cost approach, market method and income approach.

2.1 Cost approach

The cost approach, also known as the replacement cost approach, is a valuation methodology that calculates the cost of reproducing or acquiring an asset that has the same purpose and utility as the asset being valued under current conditions [2]. The advantage of the cost approach is that its principle is simple and the data is more accurate if supported by internal historical data. However, due to the non-replicability of intangible asset production, the timeliness of application, depreciation cannot be accurately measured and other characteristics, the application of the replacement cost approach to assess the value of the data there are certain difficulties. At the same time, cost approach fails to consider the growth prospects and market position. Especially for growing or technology-intensive enterprises, whose value is embedded in intangible assets and potential growth opportunities, the cost approach has limited ability to assess such value, and the assessment results are low, making it difficult to truly reflect the intrinsic value of the enterprise [3].

2.2 Market approach

The market approach is a valuation methodology that looks for identical or similar assets in the current market and adjusts their value [4]. By using listed or recently completed transactions in the current market that are similar in industry position, business size, profit model, and other factors as comparable examples, and adjusting the value based on the differences between the target asset and the comparable ones, the final asset value can best reflect how the market truly recognizes the asset. However, this method is highly dependent on the size of the market and the number of transactions. For assets that are highly personalized, emerging and time-sensitive, the market size is often insufficient to support the use of the market method, and at the same time, many transactions take the form of non-transparent private transactions, which cannot be used as a reference standard for the market method.

2.3 Income approach

Income Approach is a valuation methodology that estimates the intrinsic value of an intangible asset by discounting the future earnings. This method can most simply and intuitively reflect the profitability of the asset and its future development potential and is therefore more likely to be considered by buy and sell parties in the appraisal. At present, the present value of earnings method is mainly adopted in the evaluation of intangible assets such as patents, trademarks, copyrights and franchises both at home and abroad [5]. However, the application of the income approach relies mainly on the prediction of the future earnings of assets, which is naturally with uncertainty and randomness. Therefore, the income approach is more suitable for enterprises with relatively stable and predictable operating results to ensure the accuracy of the valuation results [3]. Table 1 summarizes the advantages and disadvantages of cost approach, market approach and income approach.

Table 1. Advantages and disadvantages of valuation approaches

1.1	1.2 Advantages	1.3 Disadvantages
1.4 Cost Approach	1.5 Simple principle 1.6 Accurate and complete internal data	1.7 No consideration of actual earnings 1.8 Unable to calculate future earnings, potential
1.9 Market Approach	1.10 Simple methodology 1.11 Direct reflection of market	1.12 Dependent on market size 1.13 Large number of opaque

	recognition	private transactions
1.14 Income Approach	1.15 Direct Embodied Benefits	1.16 Uncertainties

3 Industry overview

Game industry refers to the Internet industry with online game development, sales, maintenance and operation as the main business, mainly divided into computer games and mobile games, which includes webpage, social, mobile games and other types of game modes. And in the game, the charging methods for game users mainly include props, transactions, hours and other charging methods, and at present, hours charging is gradually replaced by props charging.

3.1 Development and current situation

The development of China's game industry can be roughly divided into four periods: the preparatory era (1995 to 1999), the leaping era (2000 to 2007), the stabilizing era (2008 to 2012), and the multi-platform era (2013 till now) [6].

The preparatory period is the budding period of the industry's development, mainly for technological exploration and initial attempts. The mainstream game types are text and graphic Multi-User Dungeon games, and board and card type casual online games. During the leap forward period, China's game industry was gradually formed, and the scale was relatively explosive growth, with PC-based online games starting to dominate the market. Many massive multiplayer online role-playing games such as Legend and World of Warcraft began to enter the Chinese market and achieved great success. In the subsequent stable era, the development of Personal Computer (PC) online games gradually tended to stabilize, while mobile online games began to take off gradually, and the pattern of the proportion of PC and mobile online games began to change. 2013 began the multi-platform era, mobile online games began to proliferate and became the dominant form of online games, and the overall situation showed the coexistence of multi-platform form.

The development of mobile online games from 2008 onwards has formed a huge impetus to the online game market. In 2008, there were only 67 million game users in China, and by 2017, the number of users had increased to 583 million, with the number of users increasing by nearly 10 times. The size of the market also continued to increase year by year, in 2008, the game industry revenue was 18.5 billion yuan, in 2017 it has increased to 203.6 billion yuan, the revenue increased by nearly 12 times [1]. While the domestic market is growing rapidly, China's self-developed games are also expanding overseas. In 2024, the actual sales revenue of China's self-developed games in the overseas market reached US\$18.557 billion, a year-on-year increase of 13.39% [7].

3.2 Competitive landscape

The current competitive landscape of online games in China is as follows: (i) Tencent and NetEase dominate the head position in the market in a broken manner; (ii) the waist companies are highly competitive; (iii) many tail vendors are facing serious difficulties.

In 2024, the total revenue of the game business of the top ten online game vendors in China in terms of revenue amount is about 350 billion yuan, and according to the data of the game industry report, the revenue of the game industry of the domestic vendors in the past year, together with the overseas games, is about 450 billion yuan, and the revenue of the top ten vendors accounted for nearly 80% of the industry [8].

Revenue amount of the top ten, Tencent and NetEase were outside of the remaining waist manufacturers in the period from 2023 to 2024, fierce competition, ranking order produce huge changes. Table 1 compares the top 10 players in online game revenue in 2023 and 2024. Among them, IGG, Jibit, NetDragon, Sohu, China mobile game 2023 ranked in the top ten companies, in 2024 fell out of the top ten revenue list, replaced by Century Huatong, Sanqi Hutou Entertainment, Perfect World, Kaiyin Networks and Shenzhou Taiyue, and did not fall out of the list of the future of Zhongxu, Beili Beili and Jinshan Software ranking also have some changes.

As of April 30, 2025, the total number of game-related enterprises in the country is about 591,000, which only accounts for 20% of the revenue of the game industry, not including many unregistered small studios. This shows that the strengthening of the head effect in the game industry has led to a significant increase in the difficulty of survival and profitability for small and medium-sized enterprises and studios. Table 2 displays the top 10 companies in Online Game Revenue from 2023 to 2024.

Table 2. Top 10 companies in online gaming revenue (2023-2024)

Ranking	2023 Company	Revenue (billion)	2024 Company	Revenue (billion)
1	Tencent	1799	Tencent	1977
2	NASDAQ: NTES	816	NASDAQ: NTES	836
3	Zx Inc	63	Century Huatong	209.7
4	IGG	43.25	37 INTERACTIVE ENTERTAINMENT	174.4
5	G-bits	41.25	Bilibili	56.1
6	Bilibili	40.21	Zx Inc	54.8
7	Kingsoft Software	39.77	Kingsoft Software	52

8	NetDragonWebsoft	38	Perfect World	51.8
9	SOHU	34.64	KINGNET NETWORK	51.2
10	CMGE	26.06	UltraHub	46.6

4 Analysis of Tencent's Supercell acquisition

Tencent's case of acquiring Supercell is a typical case in the field of M&A valuation in the gaming industry. Firstly, the case is the largest M&A in China's gaming industry. Tencent acquired 84.3% of Supercell's equity in 2016 for US\$8.6 billion. The case can serve as a representative acquisition case in the gaming industry. Secondly, the case reveals the importance of quantifying the synergistic value between enterprises. Supercell's 250 million global users and the potential linkage value with Tencent's social and community platforms—evidenced by Supercell's 2024 performance surge, with revenue reaching \$3 billion and a year-on-year growth of 77%—go completely beyond the scope of the traditional income-based valuation approach. Despite the initial poor earnings, this ultimately proved Tencent's forward-looking pricing ability for long-term synergies, providing the gaming industry with a key example for revamping the asset valuation model.

4.1 Tencent's acquisition motivation

Mobile globalization layout gap. In 2016, Tencent's total mobile game revenue was RMB 38.2 billion, accounting for 46.6% of the total market revenue of RMB 81.92 billion. At the same time, the growth rate of mobile game revenue and user scale has been declining year by year since the explosive growth in 2013. Tencent's share of the domestic market at that time was already close to saturation. The demographic dividend of the market had gradually died out and the market share distribution pattern had also tended to stabilize. Thus, the internationalization of the industry has become the way out for its expansion.

For Tencent, its layout in the European and American markets is relatively scarce. Tencent wants to enter the European and American markets through cross-border mergers and acquisitions, which is the most effective way. Supercell has been operating in the European and American markets for a long time, with a broad user base and excellent reputation, by which Tencent can quickly open the European and American markets if it chooses to merge and acquire Supercell. Tencent will be able to utilize Supercell to open the European and American markets and expand its game industry to Europe and the United States, while at the same time further promoting its social platforms WeChat and QQ. As WeChat and QQ are already saturated with popularity in China, it is difficult for them to develop further. With the acquisition of Supercell, Tencent can increase the number of overseas game users and channel the player base to the social

platform, which can effectively help Tencent seize the market share of the social platform in the international market. Table 3 displays China's mobile gaming revenue and growth rate from 2013 to 2016. Table 4 displays China's mobile game user size and growth rate from 2013 to 2016.

Table 3. China's mobile game revenue and growth rate (2013-2016)

Year	Revenue (billion)	Year-on-Year Growth Rate
2013	112.4	246.9%
2014	274.9	144.6%
2015	514.6	87.2%
2016	819.2	59.2%

Table 4. China's mobile game market size and growth rate (2013-2016)

1.17 Year	1.18 Users (billion)	1.19 Year-on-Year Growth Rate
1.20 2013	1.21 3.10	1.22 248.4%
1.23 2014	1.24 3.58	1.25 15.1%
1.26 2015	1.27 4.55	1.28 27.4%
1.29 2016	1.30 5.28	1.31 15.9%

Synergistic effect of Tencent and Supercell. For Supercell, the company has not been established for a long time, the scale is not big. The company's technology research and development and product publicity still need to invest a lot of cost to support the company's operation. To get a bigger development, Supercell very much need to reach cooperation with some giant enterprises [9]. China has a huge market. In 2016 the actual sales revenue and user scale of mobile games have reached 819 trillion yuan and 528 million people respectively. Tencent, as a deservedly giant enterprise in China, is not only able to provide supercell with operating costs, but also able to utilize the advantages of its social platform's user base to easily open channels for supercell to enter the Chinese market.

For Tencent, unlike the early days of the mobile gaming boom, with the rapid development of the gaming industry, especially mobile games, relying solely on the user base brought by social platforms and incorporating social elements into games through these platforms is no longer sufficient to dominate the market. Tencent's strength in casual games is gradually losing market share, and its research and development capabilities in the mobile gaming sector are insufficient, with severe homogenization and a lack of innovation [10]. Unlike Tencent's operational strategy based on a large user base and a certain number of homogenized games, Supercell has reached a level of 100 million daily active players and \$2.3 billion in annual revenue in 2016 with just four games, including Royal War, Clash of Clans, Cartoon Farm, and Island Wizards [11]. The acquisition of Supercell can provide Tencent's game development with the opportunity to transform into high-quality creative game development, improve Tencent's industrial image, and enhance market recognition and reputation. In summary, Tencent's M&A of Supercell is not only based on Supercell's profitability, but also for the synergistic effect.

4.2 Acquisition price deconstruction

Applicable valuation methodologies. In assessing the case of Tencent's acquisition of Supercell, the valuation methodologies need to be based on the characteristics of the target enterprise and industry attributes for comprehensive consideration. The cost approach, whose core logic relies on the replacement cost of assets, has significant limitations for asset-light, high-margin companies like Supercell. On the one hand, the core value of the company focuses on intangible assets such as IP reserves, R&D team and user ecosystems. The traditional cost approach is unable to quantify the value of such asset-light. On the other hand, the approach only reflects the historical cost of inputs, which makes it difficult to capture the ability and future value of the company's ability to continue to produce explosive games. This method only reflects historical input costs, which makes it difficult to capture the company's ability to continue to produce hit games and its future revenue potential in the international market, which is the core motivation for Tencent's strategic acquisition.

Although the income approach can theoretically measure future revenue through the discounted cash flow (DCF) model, it faces serious challenges in practical application. The high iterative nature of the gaming industry, the uncertainty of the product life cycle and the volatility of user preferences lead to a high degree of stochasticity in revenue forecasting, with a significant risk of subjective bias. For example, Supercell's revenues are highly dependent on the number of single games including the game of "The Game". Revenue is highly dependent on a single game. For example, Battle Royal accounted for \$100 million of average monthly revenue in 2016. The volatility of its performance further undermines the reliability of the income approach model.

In comparison, the market approach has higher feasibility and accuracy. First, the global handheld game market has formed a mature system of comparable companies, such as Activision Blizzard's \$5.9 billion acquisition of King Digital, which provides an objective reference sample for valuation. Second, through the selection of core financial indicators such as price-to-earnings (P/E) ratio, price-to-sales (P/S) ratio for

side-by-side comparisons, it can be anchored in a reasonable valuation range. In summary, the market approach is the best choice for Tencent's acquisition of Supercell.

The market approach is to find a comparable company or a group of comparable companies, to determine the key indicators affecting the value of the company, to the ratio of the market value of the comparable company and the relevant indicators as a multiplier, according to the target company's relevant indicators, to calculate the market value of the target company. In the valuation decision of Tencent's acquisition of Supercell, the P/E ratio method was chosen as the core method instead of the P/S ratio, the price-to-cash flow (PCF) ratio, or the EBITDA ratio for the following four reasons. Firstly, Supercell's high net profit margin, 41%, and low capex asset-light model are highly compatible with the P/E ratio method, while the P/S method fails to reflect its core competitiveness by ignoring the margin advantage. The PCF and EBITDA ratios do not provide additional incremental information due to minimal depreciation and amortization. The difference between net profit and EBITDA is less than 5%. Secondly, the conservative multiple of the P/E ratio of 10.6 implies the product iteration risk of the handheld game industry. While P/S and EBITDA ratio may overestimate the long-term value by ignoring the cost structure difference and single product dependence risk. Thirdly, the P/E ratio method is commonly used in European and American game mergers and acquisitions, such as Activision Blizzard's 10 times P/E ratio acquisition of King Digital, which is in line with the practice of capital pricing. While the P/S is mostly applied to loss-making enterprises. And the EBITDA ratio focuses on the heavy-asset industry, which are different from Supercell's light-weight assets. All of them are mismatched with Supercell's asset-light and highly profitable attributes. Therefore, the P/E ratio method is the most suitable for the acquisition of Supercell in this case among the valuation methodologies above.

Market value estimation. According to Supercell's annual report, its 2015 revenue of 2.109 billion euros, approximately 2.326 billion dollars, with a net profit of 848 million euros, approximately 964 million dollars [12]. Application of the market approach to the Tencent-Supercell transaction requires careful selection of comparable companies and appropriate valuation multiples. European gaming companies provide the most relevant comparison set due to their similar regulatory environments and market characteristics to Supercell's Finnish operations. The comparable companies identified include Stillfront Group AB, G5 Entertainment AB, Azerion Group N.V., and Flexion Mobile Plc, which represent publicly traded gaming companies with similar business models and market focus. Their average P/E ratios in the last 2 years are within the 10 to 15 range. Leading companies such as CDPR, Ubisoft, and Paradox have relatively high P/E ratios, while mobile and small-to-medium-sized companies have relatively low P/E ratios overall [13]. The P/E ratios of these comparable companies during the 2020s period provide baseline valuation multiples for market-based analysis. Goodgame Studio traded at a P/E ratio of 12.09, Social Point at 12.5, King digital at 11.42, and Rovio at 23.30. The average P/E ratio across these comparable equals 12.72, providing a reasonable basis for Supercell's market-based valuation, as indicated in Table 5 [14, 15, 16, 17, 18].

Table 5. P/E ratio of European Small and Medium Game Companies in 2020s

Company	Country	P/E Ratio
Goodgame Studios	German	12.09
Social Point	Spain	12.5
King digital	Sweden	11.42
InnoGames	German	14.9

Using the market analogy method, the typical price-to-earnings ratio for small and medium-sized European online game companies is about 12.72 times, and based on this benchmark ratio, Supercell's market value is projected to be approximate \$12.269 billion. This value is 20.28% higher than Tencent's actual acquisition valuation of US\$10.2 billion. The difference mainly stems from the risky discount factors unique to cross-border M&A in the online game industry: policy and regulatory risks, especially the uncertainty of the approval system for game licenses in the Chinese market, exchange rate volatility risks as the impact of exchange rate changes on cross-border capital flows, and integration and operation risks such as the loss of core talent and loss of user resources that may be caused by cultural differences. Cross-border transaction risks necessitate a discount to the market-based valuation to reflect additional uncertainties and integration challenges. Research on cross-border gaming acquisitions indicates risk discounts typically range from 10-20% depending on specific country risk factors and transaction complexity. The above risk factors result in an additional discount adjustment of 16.9% to the valuation, which ultimately converged to an actual transaction consideration of US\$10.2 billion.

5 Conclusion

By deconstructing the case of Tencent's \$10.2 billion acquisition of Supercell, this study finds that cross-border M&A valuation in the gaming industry needs to be based on the industry-calibrated price-to-earnings ratio as the core benchmark, but needs to dynamically incorporate various non-financial discounting factors such as policy and regulatory risks, exchange rate fluctuation risks, and cultural integration risks. This model effectively explains the failure mechanism of traditional methods such as cost approach, income approach and market method in the game industry. Therefore, the valuation of intangible assets in the gaming industry needs to abandon the reliance on static financial indicators and adopt the dynamic P/E ratio and risk discount composite framework to solve the predictable problems of investor pricing bias, undervaluation of M&A parties, and lack of benchmarks for cross-border transactions in the market.

The main contribution of this paper is to fill the methodological gap in the valuation of cross-border M&A in the gaming industry, to establish the valuation paradigm of asset-light enterprises based on P/E ratio ratios, supplemented by a certain risk discount

rate. This provides a practical tool for investors, acquirees, regulators and other transaction-related units, and especially provides a pricing basis for the global expansion of enterprises in the gaming industry.

However, the current study has some sample limitations, with only four European small and medium-sized game companies as P/E ratio references and a scarcity of large-scale cross-border game industry M&A cases, with only Supercell being the only case of a \$10 billion M&A. In the future, the latest market information in real time to supplement should be followed up and the research results in a timely manner should be improved.

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