Digital Platform M&A Strategy in Two-Sided Markets: A Data-Driven Approach Using Fuzzy-Set Qualitative Comparative Analysis

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Abstract. Digital platforms play a crucial role in the digital economy, with mergers and acquisitions (M&As) becoming more frequent and showing distinct characteristics compared to traditional markets. We examine 190 M&A cases involving Chinese digital platforms from 2003 to 2024, with a particular focus on how startup acquisitions contribute to the growth of these platforms. The findings show that Chinese platforms are generally younger and tend to engage in larger M&As. Using fuzzy-set qualitative comparative analysis (fsQCA), the study identifies seven distinct types of M&As. The empirical results indicate that during the growth phase M&As primarily target user resources and data to enhance network effects and algorithms. In the maturity phase, M&As focus on ecosystem development, integrating upstream and downstream operations. Startup acquisitions are mainly aimed at technological integration, market expansion, or rapid acquisition of user data from emerging markets to establish competitive barriers. Startup acquisitions often lead to the integration of startup products into dominant platform ecosystems.

Keywords: Digital platform; M&As; Startup

1 Introduction

M&As serve as the key strategy for business growth, and in the case of digital platforms, M&As have become more frequent and diverse compared to other sectors. Through acquisitions, digital platforms accelerate their growth, enhance their core capabilities, and expand their ecosystems. M&As are driven by motivations such as pursuing monopoly power, acquiring critical resources through network effects, and achieving economies of scale. Digital platforms promote market concentration, making it increasingly difficult for smaller competitors [1].

There are many studies in digital platforms M&As. Platforms gain significant benefits from acquisitions [2]. But mergers between digital platforms can reduce product

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diversity and user choice [3]. Platforms often acquire startups to gain access to talent, consolidating their monopoly positions [4]. Startups in the market are essentially waiting to be acquired [5]. Gautier and Lamesch [6] analyzed M&As of top overseas platforms, between 2015 and 2017, finding that most of acquisitions occur in active sectors. Rong et al. [7] analyzed data from M&As involving Chinese internet companies.

The QCA method, developed by Ragin [8]. The fsQCA method, an extension of the traditional QCA framework, has been widely applied in the platform research field. Lyu and Shen [9] explored how digital platforms can better fulfill their social responsibility. Yue et al. [10] analyzed 70 cross-border M&A cases involving Chinese multinationals, uncovering the complex, causal nature of performance drivers in acquisitions. Sheng and Zheng [11] examined M&A cases of Chinese digital platforms, using post-acquisition performance as the outcome variable, and developed a configuration of conditions for implementing acquisition strategies at various stages of development.

Existing studies have examined various related topics within the platform domain, but a comprehensive empirical analysis of past M&A cases in Chinese digital platforms remains missing. We have seen the significant influence startups have on the selection of M&A strategies. The fsQCA method is particularly well suited for studying M&A issues.

2 Sample Selection and Data Construction

2.1 Sample Selection

Based on the "Comprehensive Strength Index of Chinese Internet Companies (2023)" report, we select the top 10 overall ranked companies, such as Alibaba, Tencent, ByteDance, Baidu, and Meituan, which hold dominant positions in the digital field, and companies with exceptional performance in markets within the platform economy, including 360, Bilibili, Beike, Ctrip, Sohu, NetEase, Didi, and Kuaishou.

2.2 Data Construction

M&A cases involving relevant companies from January 1, 2003, to January 1, 2024, were collected from the Wind M&A database. To ensure a more focused analysis, we focus on acquisition cases where the acquirer gains significant resources and impacts post-acquisition, excluding cases where the acquirer holds less than 20%. In addition, cases involving recent rumors or failed transactions were excluded, and only completed mergers or those with board resolutions filed were considered. M&As in the platform sector may also involve multiple stages of equity acquisition. After applying the relevant criteria, a total of 190 platform company M&A cases were collected.

Referring to classification of M&As in the platform sector [7], we use the M&A industry index as the outcome variable, dividing it into five levels and assigning corresponding values. For example, a value of 1 indicates minimal industry overlap, suggesting that the platform is expanding into a new area. Companies in two-sided markets may serve C(Consumer)-end users or B(Business)-end users. Unlike M&As in

traditional industries, digital market M&As are to some extent data-driven [12]. In addition, a key characteristic of two-sided markets is network effects, which also play a significant role in platform M&As [3]. Based on the context provided, the selection of conditional variables is presented in Table 1, with explanations and examples for each variable under the same conditions. For example, a startup condition variable with a value of 1 indicates that it is a startup company, and a value of 0 indicates that it is not a startup company. In addition to the variables listed in the table, the following variables are also included: Amount, Shareholding Ratio, and Cross-Border M&A. All data mentioned above are sourced from the Wind database.

Table 1. Condition Variable

Condition variables	Value range (Integer)	Examples and explanations	Case
Product type	1-2	Value 2 means serving b-end users	Saas service providers
Data-driven index	0-2	Value 2 means acquisition offers significant data value	Alibaba's acquisition of data analysis service provider CNZZ
Product similarity	0-2	Value 2 means the products of the acquiring and acquired companies are highly similar	Bytedance's acquisition of the overseas short-video platform musical.ly
Network effect value	0-2	Value 2 means the acquisition generates strong network effects	Baidu's acquisition of the navigation site hao123
Stage	0-1	Value 1 means the platform is in the explosive growth phase	Meituan's acquisition of shared bicycle brand MOBIKE in 2018
Startup	0-1	Value 1 means startup	Bytedance merges Vyou, a social game company in the meta universe.

Note(s): author's own work.

2.3 Summary Statistics

Data for overseas platforms in this section are derived from Gautier's research [6]. Of the 190 cases, 78 occurred in the growth phase, while 112 occurred in the mature phase, indicating that M&A activity slightly favored the mature phase. In terms of start-up acquisitions, with 79 out of 190 M&As involving startups, representing 40.93% of the total. A comparison of the target companies' establishment times in Chinese digital M&As and overseas platforms is shown in Table 2.

Table 2. Age of M&A by Chinese digital platform

Statistical value (unit: year)	Min.	Median	Mean	Max.
China digital platforms	1	5	8	23
Overseas digital platforms	0	4	6	39

Note(s): author's own work.

Table 3. Amount of M&A by Chinese digital platform

Statistical value (unit: US$ 10000)	Min.	Median	Mean	Max.
Acquisition amount	76.58	11371.00	48970.08	860000.00

Note(s): author's own work.

M&As in the platform industry typically involve significant sums of money, as illustrated in Table 3. The average transaction amount for mergers and acquisitions of Chinese platform companies was $489.70 million, compared to $239.00 million for overseas deals. The median transaction amount was $113.71 million, suggesting that the M&A distribution includes some large transactions, while the overall distribution remains at a higher level. The largest amount was Tencent's $8.60 billion acquisition of Supercell in 2016, which remains the highest amount in all merger cases.

3 Data Analysis and Empirical Results

3.1 Necessity Analysis

Due to missing data in some of the cases mentioned above, such as the amount. After excluding these incomplete cases, we retain 108 cases with all fields available. The necessity test for conditional variables was performed using fsQCA 3.0 software. The empirical results revealed that the consistency index for all conditional variables did not meet the critical value of 0.90. The analysis indicates that there is no single requirement for the selected M&A configurations in this study. The default consistency threshold of 0.8 was applied in fsQCA software, and the frequency threshold was set at 2 based on the number of cases and the practical application of the fsQCA method.

Table 4. Analysis of M&A industry index configuration

Condition configuration	H				L		
	H1	H2	H3	H4	L1	L2	L3
Product type	▫	●	●	▫	▫	●	●
Data-driven index	▪	▫	▫	▫	▫	●	▫
Product similarity	▫	▫	▫	▫	▫	▫	▫
Network effect value	▪	▪	▫	▫	●	▪	●
Stage	○	●	●	▪	▪	▫	▪
Startup	▫	▫	▪	▫	●	▫	▫
Amount	●	○	○	▪	▫	▫	●
Shareholding ratio		▪	▪		▫	▪	▪
Cross-border M&A	▫	▫	▫	●	▫	▫	▫
Consistency	0.922	0.923	1.000	1.000	0.973	0.974	0.940
Original coverage	0.138	0.120	0.101	0.128	0.134	0.146	0.143
Unique coverage	0.052	0.038	0.019	0.042	0.022	0.034	0.031
Consistency of the solution			0.916			0.922	
Original coverage of the solution			0.237			0.198	

Note(s): author's own work; ● denotes that the core condition exists; ○ denotes that the core condition does not exist, or the "complement" of the core condition exists; ▪ denotes that the auxiliary condition exists; ▫ denotes that the auxiliary condition does not exist, or the "comple-

ment" of the auxiliary condition exists; a blank space means that the presence or absence of the condition has no impact on the result.

3.2 Configuration Analysis of Conditions

The configurations of the high M&A industry index and the low M&A industry index are shown in Table 4. There are a total of 4 high industry index M&A configurations and 3 low industry index M&A configurations. Core conditions are present in both intermediate and simple solutions, while auxiliary conditions are only found in intermediate solutions.

4 Conclusion

This study analyzes M&As in the Chinese digital platform sector, focusing on startups. The findings show that M&As in China are increasingly targeting younger companies, with larger deal sizes and volumes compared to foreign markets. The target companies are often less than 10 years old, highlighting the trend of acquiring startups. The study identifies seven M&A configurations using fsQCA methodology, providing insights into strategic choices in the two-sided market.

During the rapid growth phase, M&As (H1 and L2) in this phase focus on acquiring C-end resources to complement product capabilities and achieve economies of scale. The primary goal is to expand the user base by acquiring target company users, enhancing network effects, and increasing platform reach. Data acquisition is also vital as platforms strengthen their data processing and analytics capabilities to support rapid growth. As the platform matures, with significant growth in the core product user base, M&As (H2, H3, L1, and L3) are used to enhance business capabilities and expand the ecosystem. M&A strategies are diversifying at this stage. One approach is to target market-oriented acquisitions of commercial companies, as seen in H2 and H3, integrating the capabilities or user bases of target companies to reduce marginal costs, improve service quality, and broaden the user base. For example, Tencent's acquisition of software development platform Coding and Alibaba's acquisition of Amap. Another strategy focuses on market segmentation, targeting companies with user or commercial focus to boost attractiveness and strengthen market positioning. Cross-border M&As can occur at any stage of development, aiming to expand into international markets through acquisitions of foreign companies or stakes in companies operating in China. These M&As tend to involve larger deal sizes due to the established presence of target companies in global markets.

Startup acquisitions appear in two configurations (H3 and L1). For example, Tencent's acquisition of the intelligent voice interaction company Triangle Beast Technology and Baidu's acquisition of the gaming forum ptbus. Startups with technological innovation capabilities are integrated into the platform, strengthening vertical technological ecosystems. In the L1 configuration, acquisitions target user scale and behavioral data to facilitate rapid resource integration into markets and build user ecosystem barriers. In the H3 configuration, production-side data assets are targeted

to optimize business services, such as cloud platforms acquiring IoT companies, helping platforms maintain technological leadership and competitive advantage.

Our study provides insights into the strategic trends of digital platform M&A in China, revealing how platforms are evolving and expanding. It highlights how platforms are adjusting their strategies to maintain a competitive edge, enhance capabilities, and seize market opportunities, contributing both academic literature and practical understanding for stakeholders in a dynamic digital market.

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