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Research on the Impact of Synergy in Firm Mergers and Acquisitions on TMT Industry Performance

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Abstract: Driven by the dynamic interplay of rapid technological innovation and heightened competition, companies increasingly turn to mergers and acquisitions (M&A) to expand market share, enhance innovation, and improve operational efficiency. This paper examines the impact of M&A on the performance of firms in the technology, media, and telecommunications (TMT) industry. Using a literature review approach, the study systematically analyzes and synthesizes the findings from existing empirical studies and theoretical frameworks. Financial indicators such as profitability and market capitalization are commonly used to assess post-merger performance; however, empirical results remain mixed. Strategic synergies, the effectiveness of knowledge integration, and the absorptive capacity of the acquiring firm are identified as key determinants of successful synergy realization. In fast-paced, high-tech environments, the timely absorption and application of newly acquired knowledge assets are critical for sustaining long-term value. Moreover, psychological and leadership factors also significantly influence M&A outcomes, with underestimation of these factors often leads to performance declines. This study highlights the critical role of both technological and human factors in achieving sustainable success in technology-driven M&As.

Keywords: Mergers and Acquisitions, Technology Industry, Synergy Effect

1. Introduction

Mergers and acquisitions (M&A) have become an important strategic tool for firms in their quest for growth, innovation, and competitive advantage, especially in dynamic industries such as technology, media, and telecommunications (TMT). Against a backdrop of rapid technological change and increasing globalization of markets, TMT companies rely on M&A not only to expand their market share, but also to acquire new technologies, talent and innovation capabilities. These transactions are often motivated by the pursuit of financial gains, resource optimization and knowledge integration.

Whether M&As can realize the expected synergies often depends on several key factors, including the strategic fit between the acquirer and the target firm, the firm's ability to absorb and apply new knowledge, and the efficiency of the integration process [1][2]. In high-tech industries where the pace of innovation is fast and competition is fierce, the ability of firms to internalize and utilize newly acquired knowledge resources quickly and systematically is critical to the realization of good benefits [3][4]. In addition, management behavior plays a crucial role in determining M&A outcomes. Overconfidence and poor post-merger planning, even if initially strategically aligned, can lead to loss of value [5].

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The aim of this paper is to explore the multiple effects of M&As on firm performance in the TMT industry, with a particular focus on financial performance, innovation capabilities and organizational integration. Based on a comparative study of related literature, this study assesses the opportunities and risks of technology-based M&As and focuses on the key factors affecting the realization of synergies. This study provides a more comprehensive understanding of the factors that drive M&A success in the TMT industry by combining aspects of financial performance, innovation outcomes, and organizational integration. It addresses the fragmentation in existing research and provides practical guidance for companies to enhance their M&A planning and post-merger integration strategies, ultimately supporting sustainable value creation.

2. Motives of mergers and acquisitions in the tech industry

Mergers and acquisitions (M&A) are often driven by a combination of strategic, operational, and financial motivations. Currently, the motives for acquiring and integrating technology firms are broadly categorized into increasing market share and competitiveness, enhancing technology and innovation, and achieving cost savings. These goals are typically pursued through vertical, horizontal, diversified, and cross-border M&As [6]. Increasing market share and competitiveness is a key motive, as market expansion can help firms enhance pricing power and achieve economies of scale [7]. Innovation enhancement is also a frequently cited motivation. M&As can rapidly boost a firm's innovative capabilities through technology integration and resource sharing [8]. Cost savings, however, are a more controversial motive. In the early stages of an M&A—particularly in cross-cultural acquisitions—technology firms often face significant capital investment, including the installation of new equipment and ensuring compatibility with existing systems. There are also ongoing maintenance costs. Nevertheless, with effective integration, companies can eliminate redundant systems and streamline existing processes, reducing resource waste. Operating at scale can also lower the cost per unit [9].

The impact of individual managerial factors on M&A decisions is often overlooked. CEO compensation incentives play a significant role in shaping these decisions. Executives may aim to maximize the size of the firm in order to increase their own compensation, making decisions that serve their personal interests rather than those of shareholders [10]. In addition to pursuing personal gains, managers often overestimate their own capabilities, which can drive M&A activity. This overconfidence may lead them to underestimate the risks and challenges associated with the target company, resulting in acquisitions that are not aligned with the acquiring firm’s actual strengths [4].

3. Factors affecting synergy in tech in mergers and acquisitions

Knowledge integration remains a major challenge for technology M&As. While the acquisition of new knowledge can temporarily enhance innovation capabilities, its strategic value can rapidly diminish if it is not internalized and adapted in a timely manner, especially in fast-moving high-tech industries. The failure of internal R&D teams to effectively acquire and disseminate knowledge not only reduces expected innovation gains but also leads to layoffs, cultural clashes, and the loss of key human capital — all of which can hinder the success of post-merger integration [2]. Moreover, focusing on acquiring high-quality but non-overlapping knowledge can have negative effects. This occurs because the acquiring firm may lack the capacity and technology needed to absorb such high-quality knowledge [3]. Technology-complementary M&As tend to improve R&D efficiency, while technology-substituting M&As often result in a reduction in R&D investment [1].

Management-led acquisitions are also a significant factor influencing the success of M&A. One common issue is management overconfidence, where executives overestimate their ability to create value from the deal, leading them to overpay for the acquisition. This often results in failing to recover

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the acquisition costs through subsequent returns [4]. The second aspect is management's unfamiliarity with the company's own business and its lack of adequate preparation to face subsequent unexpected problems that arise [5]. Poor post-merger execution can trigger layoffs, cost-cutting and loss of innovation, which can undermine long-term value creation.

4. Evaluation of synergy in mergers and acquisitions

Financial performance is often the most intuitive indicator of whether synergies have been realized through M&A activity. Mergers and acquisitions initiated within the TMT industry tend to positively influence the operating performance of the combined entity [11]. When the acquiring and target firms are well-matched in terms of technology and market orientation, effective integration is more likely, resulting in performance gains that reflect the "1+1 > 2" effect [1]. Technology-driven M&A also typically leads to improved stock market valuation, particularly when the acquiring firm gains access to new technologies or markets that strengthen its competitive advantage [12].

The ability to innovate is a key factor in assessing the long-term success of mergers and acquisitions, especially in the area of technology. In technology M&As, the relatively large size of the target's knowledge base has a positive impact on the acquiring firm's innovation performance. It is worth noting that in high-tech environments, an extensive knowledge base can enhance innovation in the early stages of an acquisition, but the value of the knowledge base may diminish over time due to the rapid iteration of knowledge [2]. Therefore, effectively integrating large amounts of knowledge and maximizing its use within a limited time frame remains a key challenge.

In non-technology M&As, there is no significant impact on a firm's ability to innovate, but rather a negative impact. The acquirer's original rhythm of innovation is interrupted, which leads to a lack of expected improvement in innovation performance [2]. If the M&A activity is simply to acquire licenses, patents, and other intellectual property from external sources, and apply the purchased knowledge to the company's current R&D, then the innovation capability and R&D intensity will be significantly improved [13].

Finally, the relationship between M&As and organizational integration is both mutual and dynamic. Organizational integration is not only a consequence of M&A activities but also a critical determinant of their success. Strategically differentiated M&As can generate synergies and complementarities by combining distinct business operations, thereby enhancing the competitive position of the merged entity. Generally, the deeper the level of integration, the more substantial the realized synergies. Moreover, similarity in management styles between merging firms tends to reduce employee resistance, which in turn facilitates smoother integration and the effective realization of expected synergies [14].

5. Discussion

This study analyzes the synergies in M&A in the technology industry and finds that the realization of synergies is not inevitable but is influenced by a variety of factors. Although M&As often start with the strategic objectives of expanding market share, enhancing innovation capacity, and reducing costs, the actual effects are highly dependent on the fit between firms, integration strategies, and external market environment.

From a financial perspective, whether an M&A brings substantial benefits depends largely on the compatibility of the two parties in terms of resource structure. A high degree of technology-market fit can effectively reduce integration costs and enhance resource allocation efficiency, which in turn can be reflected in revenue growth and profit improvement. However, in cases where there are large differences in technology architecture or management integration is not in place, the expected financial synergies may not materialize and may even result in financial burdens. For example, fixed

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asset appreciation, restructuring costs, redundancy costs and duplicated investment in R&D systems can reduce profit margins in the short term.

At the same time, enhancing innovation capability is also one of the core motivations for technology-based M&A. At the initial stage of an M&A, the direct acquisition of patents, talents, technology platforms and R&D results can indeed rapidly enhance an enterprise's R&D capability and technology accumulation, creating conditions for new product development and market expansion. If there is a lack of systematic, institutionalized knowledge integration mechanism, even if the technology reserves are sufficient, but also because of the lack of digestive capacity and "cannot eat" the new technology. Improperly handled, it will not only cause the sinking of technology assets, but also the existing R & D system to form interference, leading to resource fragmentation, unclear direction, and even frustration with the enthusiasm of the original R & D team. In the high-tech industry, this problem is particularly prominent. Technology has a short life cycle and fast update speed, and knowledge may depreciate rapidly if it cannot be transformed and applied in a short period of time. Therefore, enterprises should assess their own knowledge absorption boundaries and integration capabilities before M&A and establish corresponding mechanisms in order to truly realize the transformation of technology value and promote from "technology accumulation" to "innovation realization".

In addition, management's behavior plays an important role in the success or failure of an M&A. Overconfidence on the part of management may lead to an overestimation of the value of the M&A, resulting in the payment of an excessive acquisition premium and ultimately making it difficult to realize the expected returns through integration. At the same time, if the management does not know enough about their own business or lacks the preparation to deal with unexpected problems in the integration process, it is also easy to lead to organizational conflict, cultural friction, and even the loss of core talent, which affects the effectiveness of integration [15].

To summarize, M&A synergies in the technology industry is a complex and multi-dimensional process. In addition to strategic and financial level assessments, emphasis should be placed on soft factors such as organizational capabilities, innovation mechanisms, and managerial behavior. In the future, enterprises should adopt a more comprehensive and systematic approach in M&A decision-making to enhance integration efficiency and ensure that M&A truly brings sustainable competitive advantages.

6. Conclusion

This study examines the key factors influencing the realization of synergies from mergers and acquisitions (M&As) in the technology sector. While M&As are typically driven by strategic goals such as market expansion, innovation enhancement, and cost reduction, their actual outcomes largely depend on the compatibility of firms' technologies, organizational structures, and integration strategies. Specifically, factors such as technology-market fit, managerial behavior, and the effectiveness of knowledge integration mechanisms play a critical role in shaping post-merger financial and innovation performance. In addition, miscalculations due to managerial overconfidence, insufficient preparation, or poor cultural alignment can undermine the expected benefits and generate internal friction.

Mergers and acquisitions (M&As) in the technology sector, while holding great strategic potential, are also fraught with integration challenges and risks related to innovation, financing and management. For companies seeking long-term value creation, success depends not only on finding the right target, but also on the ability to assimilate new knowledge, harmonize cultures, and maintain the momentum of innovation after an M&A. Future research could explore how digital tools, artificial intelligence-driven integration systems, and cross-cultural training programs can improve post-merger outcomes in high-tech environments.

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Although this study provides some new insights, there are still some limitations. First, the sample focuses on the high-tech industry and may not be fully representative of M&A cases in other industries. Therefore, future research should expand the sample to explore the effects of M&As in different industries. In addition, this study fails to analyze the cultural integration after M&A in depth, and future research could further explore the effects of cultural differences on M&A integration.

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