

The Success and Failure of Cross-border Mergers and Acquisitions of Leading Fiber Laser Enterprises: Taking Yangtze Optical Fibre and Cable and Suzhou Delphi Laser as Examples

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Abstract. Cross-border mergers and acquisitions by technology companies are of great significance to the development of the market economy, but in recent years, challenges such as asset risk and geopolitical scrutiny have posed certain challenges to cross-border mergers and acquisitions in this field. This article aims to explore the key factors that affect the success and failure of cross-border mergers and acquisitions of leading fiber laser companies, using comparative analysis and a combination of qualitative and quantitative methods, taking Yangtze Optical Fibre And Cable and Suzhou Delphi Laser as examples. The results indicate that the synergies between enterprises, the quality and valuation of underlying assets, as well as external policies and compliance, greatly affect the success or failure of cross-border mergers and acquisitions by leading companies in this field. This article argues that emphasizing the synergistic effect of enterprises, ensuring the quality of underlying assets, utilizing scientific valuation methods, and attaching great importance to policy and compliance can significantly promote the successful mergers and acquisitions of enterprises, providing a valuable reference for other enterprises in this field.

Keywords: Fiber Laser, Cross-border Mergers and Acquisitions, Comparative Analysis, Combining Qualitative and Quantitative Methods, Key Factor.

1. Introduction

In recent years, significant progress has been made in the fields of fiber optic communication and laser technology, driven by technological innovation, expanding applications, and increasing market demand. In 2023, relevant personnel and technical experts from the National Natural Science Foundation of China collaborated to publish an article titled "Analysis and Outlook on the Development of Laser Science and Technology in China from the Perspective of the National Natural Science Foundation". The article stated that in recent years, China has made significant achievements in scientific research on high-power fiber lasers, which stems from its deep accumulation in this technical discipline over the years [1]. Currently, the fiber laser industry is facing a competitive landscape characterized by accelerated technological iteration and increasing demand for global industrial chain layout.

Therefore, cross-border mergers and acquisitions have become a core strategy for leading fiber laser companies to break through technological barriers and expand their markets. Research has found that both cross-border mergers and acquisitions and exports can enhance corporate innovation performance, and participating in cross-border mergers and acquisitions can expand the scope of technological influence through centrality effects, and improve a country's control over innovation resources through structural hole effects [2]. This is conducive to promoting a country's integration into the global innovation network and enhancing its technological influence, making it an important way for companies to go global [3]. Against the backdrop of accelerating global economic integration, cross-border mergers and acquisitions have become an important means for enterprises to penetrate international markets and acquire strategic assets [4].

However, cross-border mergers and acquisitions often face challenges such as insufficient synergies, operational performance risks, asset risks, and geopolitical scrutiny [5]. Therefore, revealing the factors that determine the success or failure of cross-border mergers and acquisitions by

fiber laser companies has become the key issue of this study [6]. According to existing literature and theories, the key factors for the success or failure of cross-border mergers and acquisitions include synergy theory, compliance, integration capability and so forth [7]. Meanwhile, cross-border mergers and acquisitions in the fiber optic communication industry have their unique characteristics, such as technological and data security barriers [8].

Therefore, this article will compare and analyze the success or failure of cross-border mergers and acquisitions between two leading companies in the fiber laser field, Yangtze Optical Fibre and Cable and Delphi Laser, using methods such as comparative analysis, case analysis, and a combination of qualitative and quantitative analysis. By comparing the differentiation strategies of the two companies, key factors leading to the success or failure of their mergers and acquisitions will be extracted, providing experience and reference for other cross-border mergers and acquisitions in this field, and laying a foundation for the future development of the fiber laser industry.

2. Case Overview

2.1. Changfei Fiber Optic acquires Radio Frequency Systems Germany GmbH (RFS Germany) and Suzhou companies

Regarding the merger and acquisition of both parties, Yangtze Optical Fibre And Cable is a leading global provider of fiber optic cables, optical cables, and comprehensive solutions. In recent years, it have vigorously expanded the markets for rail transit, base station cables and components, power cables, and more. The acquired entity Radio Frequency Systems Germany GmbH (RFS Germany) is a limited liability company specializing in the research and development, production, and sales of power cables; RFS Suzhou mainly engages in the manufacturing and sales of third-generation and subsequent mobile communication system base stations and other new technology connection equipment used to support communication networks. This transaction is based on the company's internationalization and diversification strategic planning, which is beneficial for the company to expand its relevant business in the target market, fully utilize the technological advantages and brand of the target company, improve profit levels by combining economies of scale and operational efficiency, and achieve rapid expansion of domestic and foreign customers. The transaction process is shown in Figure 1.

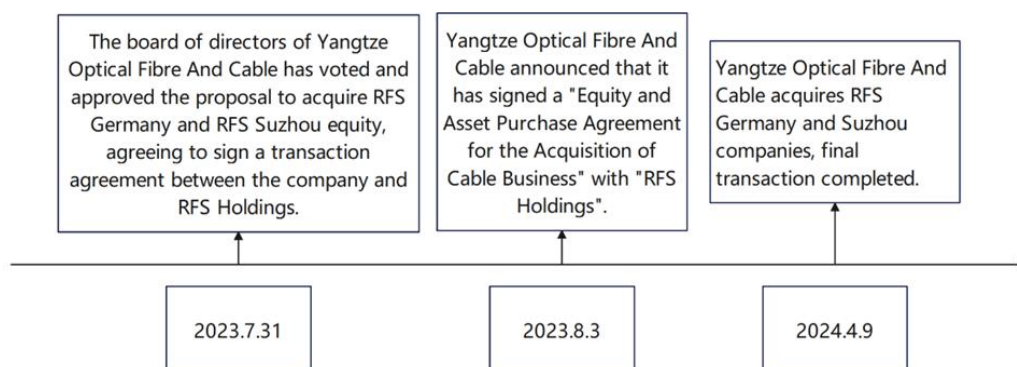


Fig. 1. Transaction timeline of Yangtze optical fibre and cable's acquisition of RFS Germany and Suzhou companies (Picture credit: Original).

On July 31, 2023, Yangtze Optical Fibre and Cable agreed to sign a transaction agreement with RFS Holdings. August 3rd is the announcement day for Yangtze's merger and acquisition, and by April 9th, 2024, the merger was officially successful. In this merger and acquisition, the operating performance of the target company is affected by various factors such as economic cycles and market competition, and there is a risk of unexpected business plans; In addition, it needs to be approved or filed by relevant administrative authorities both domestically and internationally before implementation, and there may be risks of postponement, change, suspension, or even termination.

2.2. Delphi Laser Acquires Corning Laser from Germany

Regarding the merger and acquisition, Delphi Laser focuses on research and development in the field of laser fine microfabrication, with a wide range of business covering multiple application areas such as semiconductors, optics, and displays. Germany Corning Laser possesses core technologies in precision micro-processing, such as Augmented Reality (AR), through-glass via (TGV) technology. Furthermore, the company has achieved significant accomplishments in macro-processing and wafer processing. The acquisition of Corning Laser is a product extension and technological improvement of Delphi Laser in laser fine microfabrication and wafer processing, expanding the macro processing product line, which is conducive to enhancing the company's core competitiveness and long-term development, and has important strategic significance for the company's business development. The transaction process is shown in Figure 2.

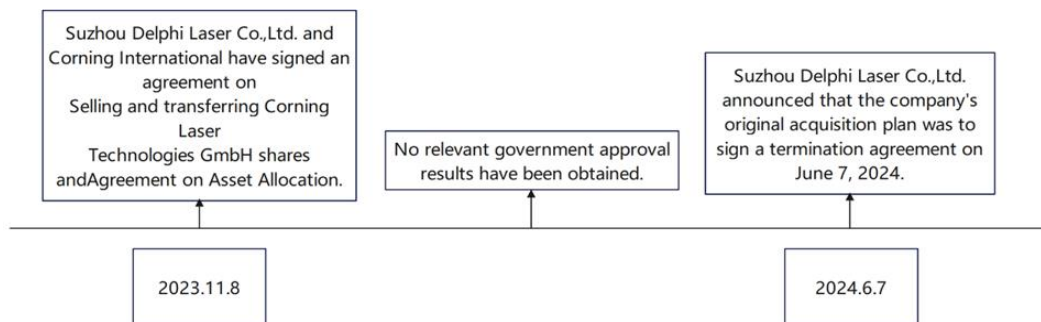


Fig. 2. Timeline of Delphi Laser's acquisition of Corning Laser (Picture credit: Original).

On November 8, 2023, Delphi Laser and Corning Laser signed a transaction agreement, but did not obtain relevant government approval results, resulting in Delphi Laser announcing on June 7, 2024, that the company's original acquisition plan had been terminated. The key challenge facing this transaction is the difficulty in obtaining approval from relevant government departments, and the inability to predict when or if approval will be granted, resulting in the acquisition being unable to be completed in the short term.

3. Comparative Analysis of Cases

3.1. Synergistic Effects

Synergy effect refers to the situation where the company's earnings after a merger exceed the total earnings of the original two companies, mainly manifested in the improvement of efficiency, including three aspects: operational, management, and financial synergy effects [5]. However, the financial synergy effect is not fully applicable to the overseas M&A model of Chinese enterprises, so it is not comparable. Therefore, the following will explain the synergy effects from three aspects: business, operation, and management.

Business Synergy Effect. In recent years, Yangtze Optical Fibre And Cable has vigorously expanded into markets such as rail transit, base station cables, and components. The RFS Germany and Suzhou acquired in this transaction are engaged in the research and development, production, and sales of related products, including RFS cables, leaky cables, hybrid cables, and so forth. These products are mainly used in the fields of rail transit, base station cables, and devices, complementing the existing business of Yangtze Optical Fibre and Cable. And the target company has complete production facilities, professional management, and production teams for this business. Therefore, both companies demonstrate significant business synergy, which helps accelerate mergers and acquisitions and promote business development.

Delphi Laser focuses on the field of laser precision microfabrication, while Corning Laser is also innovative in this area. It is precisely the high degree of technological overlap between the two sides in laser precision microfabrication and wafer processing that has led Delphi Laser to choose to invest

in Corning Laser. If the acquisition is successful, it will further solidify Delphi Laser's technological landscape. But the overlap between the two businesses is too high, and the complementarity is weak; And the laser field is not Corning's top-priority core business, indicating that there are shortcomings in its business synergy.

Business Synergy Effect. Operating profit and growth rate, as well as revenue cost, are important indicators for measuring the effectiveness of a company's operations. According to Table 1, from 2023 to 2024, Yangtze Optical Fibre And Cable's business situation has remained stable and improved: the operating profit has significantly increased to 79.221 million CNY, and its growth rate has also significantly increased, while the revenue cost has significantly decreased; However, Delphi Laser's business situation is poor: operating profit has dropped from 6.93 million CNY to negative, growth rate has sharply declined, and revenue costs have also significantly increased. It can be seen that the business synergy effect of Yangtze Optical Fibre and Cable plays an important role in the success of mergers and acquisitions.

Table 1. Operating data of Yangtze Optical Fibre and cable and Delphi Laser in 2023 and 2024.

target	Yangtze Optical Fibre And Cable (2023)	Yangtze Optical Fibre And Cable (2024)	Suzhou Delphi Laser Co., Ltd. (2023)	Suzhou Delphi Laser Co., Ltd. (2024)
operating profit(in millions of CNY)	678.31	792.21	6.93	-13.59
Operating profit growth rate	-31.86%	16.79%	-83.75%	-296.26%
Cost of Revenues(in millions of CNY)	10212.8	9031.17	335.8	434.48

(Data source: Yingwei Caiqing official website)

Management Synergy Effect. Management effectiveness can usually be measured by shareholder equity return. According to the data, the return on equity indicators of both companies have decreased, and the synergistic effect is not significant.

3.2. Quality and Valuation of Subject Assets

Quality of Underlying Assets. Asset quality refers to the quality level at which a specific asset plays a role in the enterprise management system [9]. Therefore, this article measures asset quality from the perspective of asset risk using the financial health of the target company.

As of December 31, 2022, RFS Germany had a net asset value of 99.99 million euros, and RFS Suzhou had a net asset value of 43.69 million euros, both of which were positive and significantly higher than Corning Laser's pre-acquisition value of -60.4 million euros, indicating lower risk in terms of net asset reserves.

However, RFS Germany had a lower net profit of -42.93 million euros in 2022, mainly due to the provision for one-time asset impairment and non-operating expenses, as well as fluctuations in raw material prices. Due to the existence of related party transactions in the merger and acquisition, and the fact that RFS Germany and Suzhou still have businesses unrelated to this transaction that have not been divested as of the end of 2022, simulation calculations show that the operating profit after offsetting the cable business within the scope of this transaction for the year 2022 is approximately -4.1 million euros. However, Corning Laser's net profit for the first three months of 2023 alone reached -2.7701 million euros, with goodwill accounting for 33.3% (12.7317 million euros), indicating that the company's core business is still in an unfavorable state and there is a significant risk of impairment.

Asset Valuation. Essentially, asset valuation is the prediction and judgment of future asset prices by market entities, which directly affects current economic behaviors such as investment or consumption, and thus affects changes in asset prices and economic operations [10]. Therefore, asset valuation methods have a significant impact on corporate acquisitions.

Yangtze Optical Fibre And Cable adopted the Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) multiple method, combined with the actual business of the target company after divestment, and finally closed the transaction at a benchmark price of 7.1 million euros, a

discount of 61.2% compared to the target company's net asset of 18.29 million euros. This discount reflects the short-term losses and real value after asset divestment of RFS Germany and Suzhou companies, avoiding overvaluation.

And Delphi Laser compares its pricing method with comparable international transactions in the same industry, based on revenue data multiplied by a reasonable multiple, and submits an intention quotation to the seller. However, the characteristics of high Research and Development (R&D) investment and long return period in the laser industry determine that the income multiple method may overestimate the value of unprofitable assets, resulting in a valuation foam. In contrast, Yangtze Optical Fibre And Cable's EBITDA multiple method is more in line with valuation logic.

3.3. External Policies and Compliance

An important challenge faced by cross-border mergers and acquisitions is the approval process by the government and relevant departments. RFS Germany and Suzhou companies have divested their base station antenna business, which is not within the scope of this transaction, in advance. Moreover, as RFS Holdings is a wholly-owned subsidiary of Shanghai Nokia Bell Co., Ltd., and Yangtze Optical Fibre and Cable's Chairman Ma Jie serves as a director of both the company and RFS Holdings, this transaction constitutes a related party transaction, greatly increasing the possibility of approval.

The acquisition of Delphi Laser is both complex and sensitive: it requires approval or filing by relevant government agencies in China, the United States, and Germany before implementation. In the increasingly stringent regulatory environment, the US government's fear of core technology leakage drives it to scrutinize China's business dealings more carefully. Resulting in the acquisition not being approved by the relevant government, and it is impossible to predict when or whether it will be approved. Eventually, both parties agreed to terminate the acquisition after consultation.

4. Conclusion

This article takes Yangtze Optical Fibre and Cable and Delphi Laser as examples, and uses comparative analysis, qualitative and quantitative methods to explore the key factors that affect the success or failure of cross-border mergers and acquisitions of leading enterprises in the fiber laser field. The article believes that significant synergies in business, operation, and management can help accelerate mergers and acquisitions and promote business development; Low risk asset quality helps enhance financing capabilities and is also easier to manage after mergers and acquisitions; Scientific and reasonable valuation methods avoid paying excessive premiums, which is beneficial for companies to identify implicit value and risks; The emphasis on external policies and compliance can not only avoid transaction risks in cross-border mergers and acquisitions, but also transform them into competitive advantages.

Although this study has certain limitations, such as limited case samples, short time dimensions, and incomplete influencing factors, it provides a reference for other companies in this field to plan cross-border mergers and acquisitions. Firstly, prioritize selecting targets that are highly complementary to your own business and can generate significant synergies; Secondly, rigorously evaluate the financial health of the target company and select low-risk targets with stable operations; Adopting scientific valuation models to accurately identify implicit risks; Finally, a professional cross-border compliance team should be established to conduct in-depth research on policies and regulations, and systematically grasp the key to the success of mergers and acquisitions.

In the future, cross-border mergers and acquisitions in the field of fiber lasers will still be an important means for companies to respond to market challenges, acquire core technologies, and expand their markets. While improving research in this area, enterprises should continuously enhance their strategic vision, risk management capabilities, and integrated business level to cope with the complex situation in cross-border mergers and acquisitions, achieve sustainable development, promote technological innovation and industrial upgrading in the field of fiber lasers, and continuously consolidate and improve their position in international competition.

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