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The European Outbound Road of Chinese Manufacturing Enterprises : Take the European factory of Ningde Times as an exampleXuxuan Yu

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ABSTRACT
This paper analyzes the layout of CATLs factories in Germany, Hungary, and Spain to explore the evolution of its European expansion strategy and its implications for the internationalization of Chinese manufacturing enterprises. The study employs case analysis, SWOT analysis, and literature review, combining relevant theories and actual data to deeply analyze CATLs strategic adaptability in the European market. It finds that CATL has successfully enhanced its global competitiveness through technological innovation, supply chain optimization, and localization strategies. The German factory marks the first step in its overseas expansion, establishing a strong brand image; the Hungarian factory and the joint venture in Spain have further solidified its leading position in the European market by expanding production capacity and optimizing cost structures. However, CATL still faces geopolitical risks, trade barriers, and carbon tariffs in the European market. This paper summarizes CATLs successful experiences in technological innovation, supply chain management, and cultural integration, and proposes strategies for Chinese manufacturing enterprises to address these challenges during their globalization process. The research findings provide valuable practical experience for Chinese manufacturing enterprises, particularly in dealing with the complex global environment and regional trade agreements.

KEYWORDS
Ningde Times; Chinese enterprises going overseas; supply chain management; geopolitical risk; enterprise internationalization

1 Introduction

1.1 Research background

In the context of accelerating globalization and profound changes in the international economic landscape, Chinese manufacturing companies "going global" has become a crucial strategic choice for enhancing international competitiveness and expanding market space. In recent years, the global economic landscape has undergone significant changes, with the rapid development of emerging markets providing vast market opportunities for Chinese manufacturing enterprises. However, the trend of deglobalization and the rise of trade protectionism have also increased the complexity and uncertainty of companies going abroad. In such an international environment, Chinese manufacturing companies need to diversify risks through global expansion, seek broader markets and resources, and simultaneously enhance their brands international influence.

CATL, as a global leader in power battery manufacturing, has not only demonstrated its need for international development through its layout in Europe but also reflected the opportunities and challenges faced by Chinese manufacturing enterprises in the process of globalization. By establishing factories in Germany and Hungary, CATL can better access the European market, reduce logistics costs, and leverage advanced technology and R&D capabilities to enhance product competitiveness. Moreover, the presence in the European market helps CATL optimize its global supply chain, reduce dependence on specific regions, and ensure the stability and continuity of operations. However, Chinese manufacturing enterprises also face numerous challenges in the process of globalization, such as geopolitical risks, trade barriers, and carbon tariffs, all of which have profound impacts on their cross-border operations.

1.2 Research objectives

This study aims to explore the strategic decision-making and implementation process of CATLs factory establishment in Europe, analyze the similarities and differences between its factories in Germany and Hungary, and provide insights into the evolution of its international strategy for Chinese manufacturing companies going global. Specifically, this study will use case analysis, SWOT analysis, and literature review to deeply analyze CATLs strategic adaptability in the European market, revealing its successful experiences in technological innovation, supply chain management, and cultural integration.

1.3 Research significance

This study holds significant theoretical and practical implications. Theoretically, it enriches the research on the internationalization of Chinese manufacturing enterprises and the development of new energy industries. By systematically comparing CATLs factories in Germany and Hungary, it reveals the evolution of its overseas strategy, providing new empirical support for existing internationalization theories. Additionally, through SWOT analysis and case study methods, it comprehensively examines CATLs strategic adaptability in the European market, offering a new perspective for the development of corporate strategic management theory.

From a practical perspective, this study provides valuable experience and concrete feasible solutions for Chinese manufacturing enterprises. As a global leader in the power battery sector, CATLs successful layout in Europe offers a replicable path for Chinese manufacturing companies. By analyzing CATLs case, this study summarizes its successful experiences in technological innovation, supply chain management, and cultural integration, providing practical guidance for Chinese manufacturing enterprises to address geopolitical risks, trade barriers, and carbon tariffs during their globalization process.

2 literature review

In recent years, with the changing global economic landscape and the rapid development of new energy technologies, the internationalization of Chinese manufacturing enterprises and the development of the new energy industry have become hot research areas. This paper reviews existing research findings from three dimensions: the internationalization of Chinese manufacturing enterprises, CATLs European layout, and the internationalization of the new energy industry, by synthesizing relevant literature.

2.1 Research status of internationalization of Chinese manufacturing enterprises

The internationalization of Chinese manufacturing enterprises has become a crucial strategic choice for enhancing international competitiveness and expanding market space. In recent years, the internationalization process of Chinese manufacturing enterprises in sectors such as new energy, automobiles, and home appliances has accelerated, achieving significant results. Research findings indicate that the motivations for the internationalization of Chinese manufacturing enterprises mainly include market pursuit, resource pursuit, cost pursuit, and technology pursuit. In terms of internationalization models, companies typically adopt methods such as exports, overseas acquisitions, and greenfield investments to enter the international market.

2.2 Research status of Ningde Times European layout

CATL, as a global leader in power battery manufacturing, has drawn significant attention for its layout in Europe. Studies show that by establishing factories in Germany and Hungary, CATL can not only get closer to the European market and reduce logistics costs but also leverage advanced technology and R&D capabilities in Europe to enhance product competitiveness. The German plant marks CATLs first step in Europe, significantly boosting its supply capacity and market share in the region. The Hungarian plant, as the second step in expanding overseas, further expands CATLs production scale and market share thanks to its geographical and cost advantages.

2.3 Research status of internationalization in new energy industry

The new energy industry, as a vital engine of global economic growth, has garnered significant attention for its internationalization process. Studies have found that Chinese new energy companies possess notable advantages in technological innovation, cost control, and supply chain management, which provide a solid foundation for their internationalization. In the global market, Chinese new energy companies actively expand into international markets through exports and overseas factory construction, achieving significant market share. However, international trade barriers and geopolitical risks pose severe challenges to the internationalization process of new energy companies.

3 Research

This study adopts a variety of research methods, including case analysis, SWOT analysis and literature research, combined with relevant theories and actual data, to deeply analyze the overseas strategy of Ningde Times in the European market and its adaptability.

3.1 Case analysis method

Case analysis is one of the core methods in this study. By selecting Ningde Times factories in Germany and Hungary as typical cases, this paper deeply analyzes their strategic decisions, implementation process and actual effects. The specific steps are as follows:

1. Case selection: Ningde Times factories in Germany and Hungary are selected as research objects, because these two factories represent different stages and strategic priorities of Ningde Times overseas expansion in Europe.

2. Data collection: Collect public data related to the German and Hungarian factories, including the construction time of the factory, investment scale, capacity planning, customer group, market share, etc.

3. Data analysis: Compare the similarities and differences between German and Hungarian factories to reveal the evolution path of Ningde Times overseas strategy.

3.2 SWOT analysis

The SWOT analysis method is used to identify the strengths, weaknesses, opportunities and threats of Ningde Times in the European market. The specific steps are as follows:

1. Advantages: Analyze the advantages of Ningde Times in technological innovation, supply chain management, brand influence and other aspects.

2. Disadvantages: Identify the challenges facing Ningde Times in the European market, such as geopolitical risks, trade barriers, etc.

3. Opportunities: Explore opportunities arising from increased demand in European markets, regional trade agreements, etc.

4. Threat: Analyze the impact of rising global protectionism and carbon tariff policies on Ningde Times.

3.3 Literature research method

The literature research method is used to sort out the relevant research status at home and abroad, which provides theoretical support for this study. The specific steps are as follows:

1. Literature collection: Collect literature related to the internationalization of Chinese enterprises, the development of new energy industry and geopolitical risks through academic databases and public information.

2. Literature collection: classify and sort out the collected literature, and extract key information.

3. Literature analysis: analyze the deficiencies of existing research, combine with the case of this study, and put forward new research perspectives and methods.

3.4 Feasibility analysis of research methods

1. Data availability: As an industry leader, Ningde Times has rich public information and can provide sufficient data support for research.

2. Method maturity: SWOT analysis and case analysis are mature research methods, which can effectively identify the key elements of enterprise strategy.

3. Theoretical support: The existing internationalization theory and new energy industry development research provide a solid theoretical basis for this study.

4. Discussion

4.1 Evolution of Ningde Times European Outbound Strategy

4.1.1 German factory: the first step to go overseas

Production and Market Impact: In January 2023, CATLs factory in Thuringia, Germany, officially commenced production with an initial planned capacity of 14 GWh. The launch of this facility has provided localized battery supply to European automakers such as BMW, Bosch, and Daimler, significantly enhancing CATLs supply capabilities and market share in Europe.By the first half of 2024, CATLs market share in Europe reached 34.2%, surpassing LG New Energy.

Strategic significance: The establishment of the German factory not only meets the local needs of core European customers, but also helps Ningde Times to establish its brand image, meet European regulatory requirements and promote technological innovation. By being close to the market, Ningde Times can respond to customer needs more quickly and improve customer satisfaction[2].

4.1.2 Hungarian factory: the second step to go overseas

Location and Distinction: The Hungarian plant, with an investment of 7.34 billion euros and a planned capacity of 100GWh, is expected to become the largest electric vehicle battery plant in Europe. Compared with the German plant, the Hungarian plant uses more advanced "super draw" technology to further improve production efficiency and product quality.

Cost and Geographic Advantage: Hungary boasts a high-quality workforce, with over 98% of the population being educated, yet its wage levels are significantly lower than those in Western Europe. For instance, the average pre-tax salary in Hungary was approximately $1,620 in 2023, compared to more than €4,000 per month in Germany in the same year. Additionally, Hungarys central location in Europe, along with its well-developed transportation network, allows it to cover a market of 250 million people within a 1, 000-kilometer radius centered around Budapest, enabling more efficient penetration into the entire European market.

4.1.3 Spanish joint venture: the third step to go overseas

Background: Ningde Times and Stellantis jointly invested 4.1 billion euros to build a lithium battery factory in Spain, which is expected to start production by the end of 2026 with a capacity of 50GWh. This cooperation marks the further expansion of Ningde Times production capacity layout in Europe.

Strategic significance: This layout not only fills the gap in the field of lithium iron phosphate batteries in Europe, but also further consolidates the leading position of Ningde Times in the European market, especially after Northvolt bankruptcy, when Europes dependence on Chinese battery manufacturers is more obvious.

4.2 Market performance and financial data

Market share growth: CATLs market share in Europe increased from 25% in 2023 to 34.2% in 2024, demonstrating a significant increase in its competitiveness. This growth is due to the launch of factories in Germany and Hungary and the successful implementation of localization strategies[2]。

Overseas Revenue Growth: CATLs overseas revenue increased from 181 million yuan in 2017 to 130.992 billion yuan in 2023, with the proportion of overseas revenue in total revenue rising from 1.52% in 2017 to 32.67% in 2023. This trend reflects the growing contribution of overseas markets to the companys overall performance and the increasing importance of overseas operations in the companys strategy[2]。

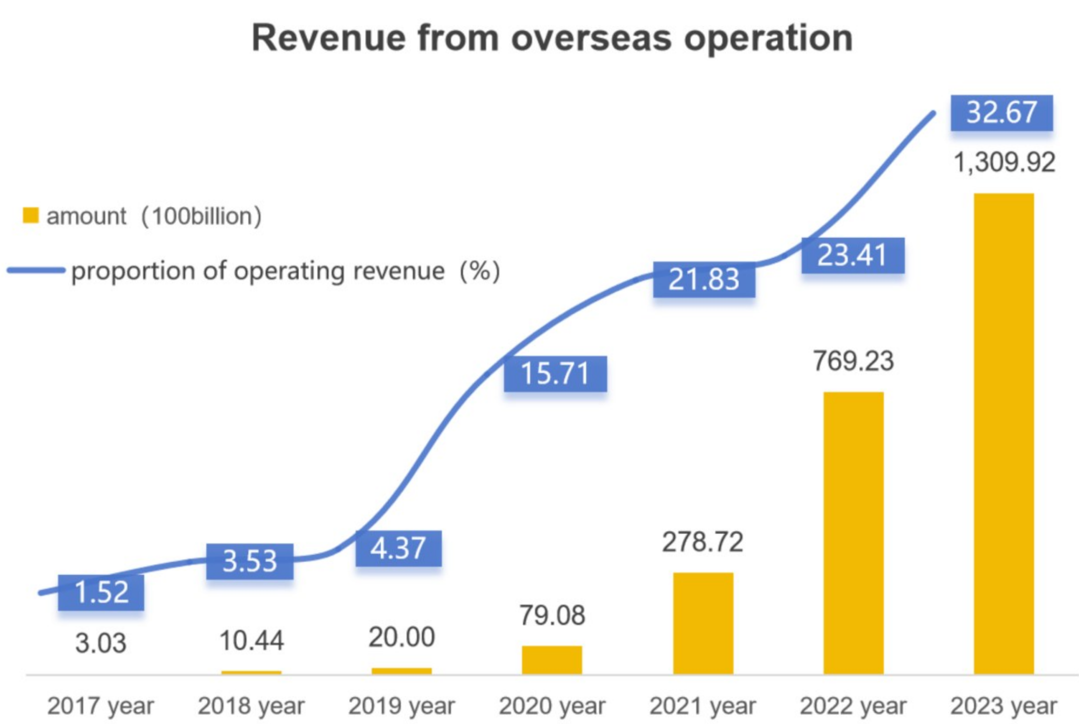

Figure 1 Data source: Ningde Times annual report and semi-annual report

4.3 Technological innovation and market performance

Technological Innovation: CATL continues to invest in R&D, maintaining its technological leadership. The advanced production lines and automation technology used in its European factory not only enhance production efficiency but also ensure the stability of product quality. Moreover, CATLs breakthroughs in all-solid-state batteries are expected to achieve small-scale production by 2027, which will further boost its market competitiveness.

Market Performance: CATLs market share in Europe increased from 25% in 2023 to 34.2% in 2024, demonstrating a significant enhancement in its market competitiveness. It is expected to further rise to between 40% and 50% in the future. In the first quarter of 2024, CATLs global market share reached 37.1%, up 2.9 percentage points year-over-year[9][10][11]。

4.4 ESG and compliance management

ESG Report Disclosure: 18 A-share battery companies, including Ningde Times, have been required to disclose ESG reports, indicating that the international community is increasingly concerned about corporate environmental, social and corporate governance. Ningde Times has demonstrated its efforts and achievements in sustainable development through active disclosure of ESG reports[1]。

Compliance management: In the European market, Ningde Times needs to comply with strict regulations and standards, including the "battery passport" requirements. By strengthening compliance management, Ningde Times ensures its legal operation in the European market[1]。

4.5 Geopolitical risks and policy responses

Geopolitical risks: In recent years, global geopolitical risks have intensified, which has had a profound impact on the operation of multinational enterprises. The bankruptcy of Northvolt has exposed the structural defects of the European new energy industry chain, but also highlighted the competitive advantages of Chinese enterprises in the global battery industry[4]By setting up operations in many European countries, Ningde Times has dispersed the political risks of a single country or region and ensured the stability of its supply chain[3]。

Policy response: In the face of policy challenges such as the EUs Carbon Border Adjustment Mechanism (CBAM), Ningde Times actively responds to them through green and low-carbon transformation. The company increases investment in renewable energy and battery recycling to reduce carbon emissions and meet the environmental requirements of the international market[6][7][8]。

4.6 Geopolitical dilemma of global industrial chain

Multilateralism and Global Industrial Chain: Luo Yifu (2024) points out that true multilateralism can solve the geopolitical dilemma of global industrial chain[4]By setting up operations in many European countries and actively participating in global multilateral cooperation, Ningde Times has ensured its stable position in the global industrial chain.

The impact of regional trade agreements: Gu Xiao (2024) analyzed the impact of geopolitical risks on Chinas regional energy transformation, pointing out that regional trade agreements can provide policy dividends for enterprises. Ningde Times optimized its global supply chain layout by taking advantage of regional trade agreements[5]。

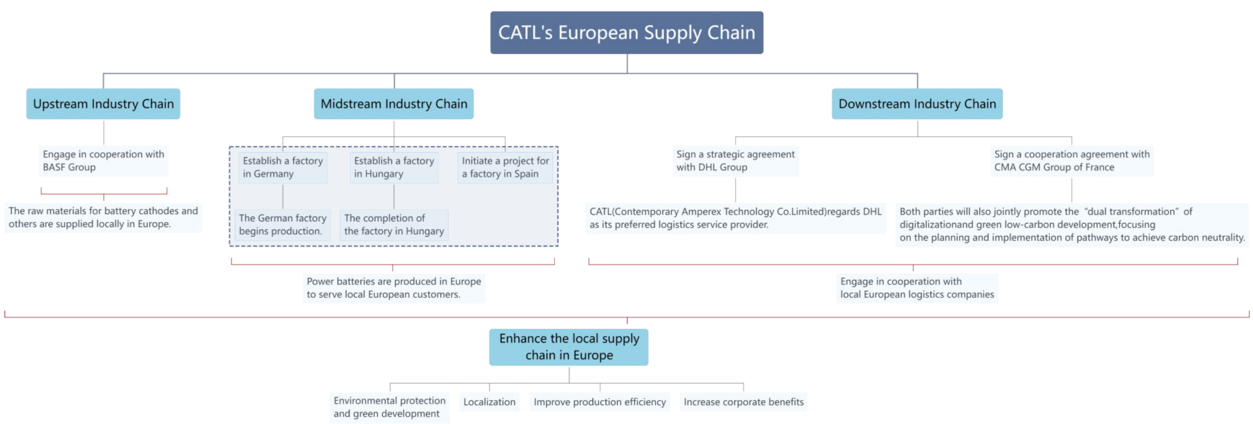

Figure 2 Ningde Times European supply chain simplification diagram

4.7 SWOT analysis

(1) Strengths (Strengths): Through global layout, technological leadership and financial soundness, Ningde Times has laid a solid foundation for overseas expansion. The advanced production lines and automation technology used in its European plants ensure the stability of product quality.

(2) Disadvantages (Weaknesses): The company may face geopolitical risks, cultural and management differences, and market competition in the process of overseas expansion.

(3) Opportunities (Opportunities): The growth of the European market, technical cooperation and licensing, and global policy support provide opportunities for Ningde Times.

(4) Threats (Threats): Competitors challenges, raw material price fluctuations and environmental regulations are the main threats that Ningde Times needs to deal with.

5 Conclusion

5.1 Research conclusions

CATLs success in its European expansion strategy hinges on its continuous investment in technological innovation, optimized supply chain management, and flexible responses to geopolitical risks and policy changes. The German plant, as the first step in its international expansion, helped establish the companys brand image and meet regulatory requirements; the Hungarian plant and the Spanish joint venture plant further solidified CATLs leading position in the European market by expanding production capacity and optimizing cost structures. Through these strategic layouts, CATL has not only enhanced its global competitiveness but also achieved sustainable development in a complex international environment.

However, CATL still faces numerous challenges in the European market. First, geopolitical risks and trade barriers pose threats to the companys international operations, especially against the backdrop of rising global protectionism. Second, the EUs Carbon Border Adjustment Mechanism increases export costs for companies, compelling them to accelerate their green and low-carbon transition. Additionally, the mandatory disclosure of ESG reports imposes higher demands on corporate compliance management, requiring more resources to be invested in environmental, social, and governance aspects.

5.2 Inspiration and Suggestions

(1) Strengthening Technological Innovation: Continuously invest in R&D to maintain a technological lead. CATLs breakthroughs in all-solid-state batteries are expected to achieve small-scale production by 2027, further enhancing its market competitiveness. Other companies should also focus on technological innovation to maintain a competitive edge in the global market.

(2) Optimize supply chain layout: Reduce logistics costs and improve supply efficiency through localized production. By establishing a localized supply chain in Europe, CATL effectively mitigates the risk of supply chain disruptions and ensures business continuity. Other companies can learn from this experience and optimize their global supply chain layout.

(3) Tackling geopolitical risks: flexibly adjust market layout to reduce reliance on a single market. CATL has diversified its political risks by setting up operations in multiple European countries, ensuring the stability of its supply chain. Other companies should also adopt similar strategies to cope with the complex international environment.

(4) Actively respond to carbon tariffs: Adapt to international market environmental requirements through green and low-carbon transitions. CATL increases investment in renewable energy and battery recycling to reduce carbon emissions, aligning with the EUs Carbon Border Adjustment Mechanism. Other companies should also accelerate their green transformation to address similar policy challenges.

(5) Emphasize ESG and Compliance Management: Actively disclose ESG reports, strengthen compliance management, and ensure lawful operations in international markets. CATL has ensured its lawful operation in the European market by enhancing compliance management. Other companies should also prioritize ESG management to enhance their international reputation and competitiveness.

5.3 Future Outlook

CATLs European expansion strategy offers valuable lessons and insights for Chinese manufacturing companies. As the global new energy market continues to grow, CATL is poised to further solidify its leadership in Europe through technological innovation, supply chain optimization, and localization strategies. At the same time, facing a complex international environment, CATL must continue to enhance risk management and flexibly adapt to policy changes to maintain its global competitiveness. By continuously adjusting its strategy, CATL is expected to gain a more advantageous position in future international competition.

By deepening its localization strategy, optimizing supply chain layout, and enhancing compliance management, CATL not only achieves sustainable development in a complex international environment but also provides a successful model for other Chinese manufacturing companies. In the future, with continuous technological advancements and further market liberalization, CATL is expected to play an even more significant role in the global new energy sector

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