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# ESG Performance and Competitive Advantage Construction for the Development of Enterprise Transformation—A Case Study of Sany Heavy Industry Co., Ltd.

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**Abstract**

Against the backdrop of escalating global environmental and social challenges, enterprises are increasingly recognizing the pivotal role of Environmental, Social, and Governance (ESG) factors in their long-term competitive advantage. This paper employs a methodology combining literature review and case analysis to delve into how ESG performance acts as a catalyst for competitive advantage construction amid enterprise transformation, with a particular emphasis on the optimization of internal management and governance structures. The research reveals that by actively enhancing ESG performance, enterprises not only bolster their reputation and brand image but also steer themselves towards more sustainable and responsible business models. This shift is not merely a response to external environmental pressures but also a core driver of internal corporate transformation and upgrading. By integrating ESG strategies with their management practices, enterprises can cultivate distinctive competitive advantages, ultimately achieving enhanced sustainable development and overall competitiveness. The study provides theoretical and practical guidance for enterprises, aiding them in effectively integrating ESG factors into practice, thereby facilitating transformational development and competitiveness enhancement.

**Keywords:** ESG performance; competitive advantage of enterprises; enterprise transformation; competitive advantage construction

## 1. Introduction

### *1.1 Research Background*

As industrialization and modernization accelerate, environmental issues stemming from conventional production methods are becoming increasingly prominent, alongside escalating global challenges, drawing attention to global sustainability concepts.

The Chinese government is proactive in addressing these challenges, encouraging Chinese enterprises to disclose Environmental, Social, and Governance (ESG) reports to promote innovation and green development. The pursuit of new quality productive forces has become an emerging development goal for enterprises, with a focus on transforming traditional industries. Meanwhile, domestic consumers are increasingly cognizant of environmental protection and social responsibility, placing higher demands on enterprises. Additionally, intensified market competition necessitates enterprises to enhance their ESG performance to gain market advantages and achieve sustainable development.

Sany Heavy Industry Co., Ltd. (hereinafter referred to as Sany Heavy Industry), a leading traditional

manufacturing enterprise in China, is actively undergoing digital transformation and transitioning to low-carbon energy to achieve green development. The remarkable enhancement of its operational capabilities is evident.

In summary, ESG performance has gradually become a crucial factor for stakeholders to ponder when evaluating a company's sustainable development capabilities. It is also a key element for companies in building their competitive advantage.

### *1.2 Literature Review*

At present, the vast majority of researchers on the ESG performance of companies in China are excellent Chinese academics, not corporate staff. The study of ESG performance is more about using model calculations to confirm one's own opinions

Judging from the research of past scholars (Du et al., 2024; Fan & Tang, 2023; Li et al., 2021; Wang, 2021). ESG performance is the external embodiment of the internal governance of enterprises, which can promote enterprise innovation and sustainable development, improve the strength of enterprises in all aspects, promote the energy transformation of manufacturing enterprises, and reduce certain corporate expenses, so as to promote high-quality development and modern development. In China, the research on ESG to promote corporate innovation and thus promote performance is relatively well-established (Du et al., 2024; Fan & Tang, 2023; Li et al., 2021; Wang, 2021). However, the manufacturing industry has not been specifically researched and analyzed, and the problems encountered by enterprises in fact have been ignored. The innovation of this paper is to discuss the integration of ESG performance into the daily management of enterprises at the practical level, taking into account the development environment of enterprises and promoting the sustainable development of society. The author believes that research should be based on the current situation of the specific enterprise and hope to have a positive effect on the enterprise. Based on the shortcomings of the previous view, the author believes that the following questions are raised: First, the use of clean energy is indispensable to achieve carbon emission goals, but the development and use costs of clean energy are still problems, and technology needs to be innovated and developed urgently. Second, energy coordination still needs to be strengthened, and the fluctuating output of clean energy needs to be coordinated with fossil fuels. Thirdly, we can only understand the ESG performance of enterprises, and measures such as managing carbon assets and risks still need to be improved, and the research direction is not comprehensive enough, and the problems that can be solved are limited. Finally, the current disclosure is mainly made by large enterprises, and small and medium-sized enterprises are temporarily unable to disclose due to practical reasons, and the main reason for the performance improvement may be the reduction in energy expenditure costs. Most consumers lag behind in their consumption concepts and rarely consider the ESG performance of enterprises, especially in the middle-aged and middle-income consumer groups, which have the highest proportion.

Improving ESG performance and developing new quality productivity is to meet the needs of social development and get rid of the problems brought about by the traditional economic model. Some machinery manufacturing enterprises in recent years in the production and operation of the situation continued to decline, they urgently need to change, at the same time have the social responsibility of protecting the environment. There is also a reason why the Chinese government proposes to develop new quality productive forces, seeking to break the situation and help enterprises achieve sustainable development, improve the economic level, meet the needs of enterprises and market demand, and promote the global circulation of economic factors (Bhandari et al., 2022; Iliescu & Voicu, 2021; Liang et al., 2022; Mohammad & Wasiuzzaman, 2021; Xu, 2024).

### *1.3 Research Objective*

As global environmental and social issues become increasingly prominent, enterprises are gradually realizing the critical role of ESG factors in their long-term competitiveness. More and more traditional manufacturing enterprises are seizing the opportunities of the times, recognizing the need for enterprise transformation through ESG performance to enhance their competitiveness on a global scale. ESG performance not only matters to a company's reputation and brand image but also serves as the core driver for enterprise transformation and development. A multitude of enterprises have already begun exploring avenues for transitioning towards more sustainable and responsible business models by improving their ESG performance. This transformation not only requires addressing external environmental pressures but also entails optimizing internal management and governance structures. Therefore, delving into how ESG performance promotes corporate transformational competitive advantage, along with a case study of Sany Heavy Industry, holds remarkable theoretical significance and practical value in advancing sustainable development and the overall competitiveness of enterprises.

## 2. Theoretical Analysis

### *2.1 ESG Performance and Competitive Advantage Construction for the Development of Enterprise Transformation*

#### 2.1.1 How ESG Performance Promotes Enterprise Transformation

##### 2.1.1.1 Aligning with the Consumer Mindset for Transformation

Since the signing of the global climate change agreement by multiple countries in 2016, there has been increased emphasis on green environmental issues, leading to a growth in sales for products associated with these concerns. After conducting an extensive survey among a broad range of consumers, and subsequent to conducting thorough professional research and analysis, the researchers ultimately discovered that consumers are willing to pay a maximum premium of no more than 5% for environmentally friendly products (Wu et al., 2020). In other words, consumers show a preference for green products within a certain price range, highlighting how ESG-driven transformations align well with the consumer preferences of the wider population.

##### 2.1.1.2 Driving Digitalization in Enterprises

The essence of ESG lies in the comprehensive consideration of environmental, social, and governance factors throughout the corporate operational management process, aiming to reduce negative external impacts. To adapt to today's rapidly changing market, people are increasingly integrating digital elements and technologies into their daily research and investigations. This lays a solid technological foundation for enterprise digitalization. Moreover, ESG demands full transparency in the corporate operational process, reducing information asymmetry between enterprises and external stakeholders, which fulfills the necessary backdrop for digital transformation (Chen & Wang, 2024). In summary, digital transformation can optimize internal and external resource allocation and enhance sustainable development capabilities, while favorable ESG performance can drive enterprises towards digital transformation.

##### 2.1.1.3 Enhancing Industry Competitiveness of Enterprises

With the increasing global emphasis on sustainable development, major investment institutions worldwide have established their own ESG rating standards and investment strategies. Many multinational corporations prioritize partnerships with innovative enterprises that have higher ESG ratings. For enterprises to further their development and truly enter the international market, ESG-driven transformation is an indispensable path (Chen & Hao, 2024).

##### 2.1.1.4 Ensuring a Stable Funding Supply Chain

Favorable ESG performance enhances an enterprise's brand value and reputation, attracting numerous partnerships and ensuring the development of a diversified supply chain model. This reduces the risks associated with increased concentration in the supply chain, such as decreased bargaining power and heightened vulnerability in business operations. Additionally, ESG underscores the importance of supply chain management, including selecting suppliers that meet ESG standards to ensure the sustainability of the supply chain (Zhang et al., 2024).

##### 2.1.1.5 Aligning with the Requirements of Government Development and the Times

The Central Committee of the Communist Party of China has long advocated the concept of new development, emphasizing the promotion of high-quality development and accelerating the deep integration of the digital economy and the real economy, as outlined in the *Report to the 20th National Congress of the Communist Party of China*. Subsequently, there has been vigorous promotion of the "peak carbon emissions and carbon neutrality" strategy, which imposes clear requirements on enterprises for green and innovative transformation. To support enterprise transformation, the government has formulated various support policies, such as tax relief for enterprises undergoing ESG transformation. Additionally, the establishment of a green financial system, including the provision of green credit and green securities, among other financial products, ensures ample financial support for enterprise transformation (Qian et al., 2023).

#### 2.1.2 Significance of ESG Performance on Internal Management of Enterprises

##### 2.1.2.1 Enhancing Enterprise Efficiency

A strong ESG performance signifies that a company places greater emphasis on its employees' working environment and compensation benefits, allocating substantial funds towards employee welfare. This fosters a sense of belonging among employees and boosts their motivation. Furthermore, ESG mandates transparency in company information, subjecting the company to oversight by its employees. This streamlines operational

processes, thereby enhancing the overall production efficiency of an enterprise.

2.1.2.2 Reinforcing the Operational Stability of the Enterprise

ESG performance strengthens the connection between the enterprise and its stakeholders. The board of directors, operating at an informal level, can utilize ESG to oversee the enterprise's operations. The chairman of the board, acting as the delegate of the board, may be motivated by self-interest to maximize organizational strategic goals, potentially leading to significant strategic development errors (Liu et al., 2024). However, the board of directors tends to prioritize the enterprise's future prospects, which can counteract the chairman's unilateral decision-making. By extensively researching market trends and the future direction of the industry, monitoring the enterprise's ESG performance, and providing timely and scientifically guided direction, the board of directors ensures the enterprise's stability.

*2.2 Challenges in ESG Performance Guiding Enterprise Transformation*

2.2.1 Analysis of Operating Costs Guided by ESG

2.2.1.1 Uneven Allocation of Internal Resources

ESG performance requires enterprises to prioritize employee interests, actively undertake social responsibilities, and increase transparency. This indicates that enterprises need to invest significant additional resources, such as funds and manpower, in ESG practices. However, in situations where internal resources are limited within the company, this inevitably leads to a reduction in research funds for technological upgrades and industrial transformation. Consequently, it may hinder the enhancement of the efficiency of green entrepreneurship within the enterprise (Wang, 2019). Enterprises must strike a balance, ensuring both a sense of belonging among all employees and maintaining the momentum of research and development in green technologies.

2.2.1.2 Prolonged Transformation Period and High Capital Requirements

The transformation guided by ESG necessitates enterprises to embark on the path of green and sustainable development, aiming to minimize carbon emissions during production processes and ensure environmentally friendly treatment of waste materials. This requires enterprises to invest significant time and capital in technological upgrades and the recruitment of relevant research talents. However, core technologies such as green energy and batteries pose considerable challenges and uncertainties. The initial investment is substantial, and the profit cycle is prolonged, placing significant demands on the company's funding supply chain. As a result, it becomes challenging for SMEs to achieve ESG-guided transformation.

2.2.2 Challenges in Implementing Various ESG Strategies

2.2.2.1 Inadequate Market Supervision Capability for ESG by the Government

Currently, there is no standardized ESG theoretical framework globally, and the requirements and regulations are still in a relatively rudimentary stage. Within this framework, the lack of development in ESG investment risk monitoring frameworks and regulatory technologies creates opportunities for "greenwashing" (Wang, 2024). For instance, Chinese government departments only regulate companies that are subject to mandatory disclosure, lacking oversight over third-party institution assessment reports. This lack of regulation results in uncontrolled ESG conditions in the market, leading many companies to engage in deception, exaggerating their own industrial green production status. This behavior severely damages the reputation of Chinese companies worldwide.

2.2.2.2 Lack of Unified Standards and Guidelines for ESG Strategies

At present, there is no universally accepted ESG evaluation standard or theoretical guidance worldwide, leading to different requirements in different countries. This presents a challenge for enterprises amidst the implementation of ESG strategies. For example, China's ESG information disclosure system exhibits varying disclosure patterns across different dimensions, primarily emphasizing voluntary disclosure with mandatory disclosure as a secondary approach. This approach may lead to different emphases on information disclosure in different sectors, objectively downplaying or concealing certain aspects of the actual situation, resulting in disparities in the quality and accuracy of information disclosure.

2.2.2.3 Challenges of the Free-Riding Phenomenon

The "free-riding" phenomenon refers to the act of gaining recognition by utilizing the achievements of others without making any prior investment, essentially plagiarizing the efforts of others. This constitutes an erroneous competitive approach, where some companies acquire market share without bearing any costs, disrupting the market's self-regulation and potentially causing market failure (Zhao, 2023). Over time, pioneers in ESG may gradually lose their enthusiasm and drive, leading to a weakening or even dissipation of the overall innovation

vitality in the environment.

2.2.2.4 Conflicts with Existing Stakeholders

ESG performance requires thorough transparency of company information and acceptance of supervision and scrutiny from all employees. Furthermore, ESG transformation demands that companies focus on long-term sustainable development, while the actual controllers of companies prioritize short-term gains. The contradictory nature of these ideologies is bound to conjure up numerous issues. Additionally, ESG-guided transformation will steer companies towards a path of low-carbon and low-pollution development, posing significant challenges to traditional high-energy-consuming enterprises. This may lead to mass layoffs and disrupt social order and stability.

## 3. ESG and Transformation Strategy of Sany Heavy Industry

### *3.1 Enterprise Background and ESG Rating*

Under the influence of the economic environment, many enterprises find themselves at the forefront of transformation and development. With the slowdown in the national economic growth rate, achieving high-quality development has become a new goal for economic growth. Alongside the continuous maturity of digital technology, it provides assistance for enterprises' digital transformation and achieving high-quality development. Among them, Sany Heavy Industry's transformation and upgrading serve as a significant case study.

As is well known, construction machinery is a crucial industry in China , closely related to economic development, and plays a vital role in stabilizing the economy, ensuring employment, and promoting growth. Sany Heavy Industry, as one of China's leading construction machinery manufacturers, continually explores the path of digital transformation amid the backdrop of industrial upgrading and intensified market competition. It actively promotes digital transformation to enhance production efficiency, reduce costs, and provide better products and services to customers, thus securing its position among the Fortune Global 500 companies. Sany Heavy Industry has achieved certain results in its transformation, which can serve as a successful case study for analysis and provide valuable insights for other enterprises (Yu, 2024). Despite encountering numerous difficulties during its transformation journey, Sany Heavy Industry's successful transformation is a testament to its industrial prowess.

The rating standards for ESG reports should establish a relevant guideline system, clearly explain the calculation methods of related variables in the reports, and require reasonable assurances to enhance the comparability and credibility of the reports. This, in turn, will impact financial institutions and external investors, bolstering overall market confidence and indirectly improving hidden indicators such as price-to-earnings ratios (Zhang & Wang, 2024). ESG performance can promote enterprise transformation and upgrading, primarily through encouraging innovation and alleviating financing constraints. Good ESG performance can enhance corporate innovation, exhibiting an "incentive effect," which can increase investment efficiency and reduce corporate risks, demonstrating an "insurance effect" (Zeng et al., 2023). At the 2023 The Beijing News-Seashell Finance Summit themed "ESG Leading the Green Era, Towards a Sustainable Future," jointly hosted by Seashell Finance and Qianlong Net, the list of "Seashell Finance ESG Vanguard Listed Companies" was released, with 24 companies selected. Sany Heavy Industry was honored with the title of "Seashell Finance A-share Private Listed Company ESG Vanguard." On June 29, 2023, in Hangzhou, it was officially announced that Sany Heavy Industry Co., Ltd. had a high-quality development index of 49639.93 and was awarded the World ESG High-Quality 5A rating. It also ranked 255th in the 9th edition of the 2023 China Top 500 Enterprises. This indicates that the successful digital transformation of Sany Heavy Industry has elevated its ESG performance.

### *3.2 Strategies and Challenges for Enterprise Transformation*

Sany Heavy Industry has comprehensively considered and implemented strategies for digital transformation from multiple aspects. Efforts and practices in setting strategic goals, constructing technological infrastructure, data governance and analysis, optimizing business processes, innovating products and services, cultivating talents and team building, risk assessment and safety management, as well as cooperation and ecosystem construction, have driven the successful digital transformation of Sany Heavy Industry and its future sustainable development.

Sany Heavy Industry defines "transformation and upgrading" as its strategic goal, which includes three dimensions: transformation of core business, market transformation, and profitability transformation (Wang, 2021). Sany Heavy Industry revolves around technological innovation, upgrading its core areas to achieve technological leadership by increasing research and development investment, driving technological innovation,

and enhancing product performance and quality. Additionally, Sany Heavy Industry actively collaborates with universities and research institutions, introducing advanced technologies and nurturing professional talents to provide strong support for continuous innovation. Furthermore, Sany Heavy Industry pays attention to the development trends of digitization and intelligence, promoting the deep integration of the industrial Internet with the construction machinery industry to offer users smarter and more efficient products and services. Sany Heavy Industry actively expands its overseas markets to enhance its brand's international influence. Sany Heavy Industry also highlights environmental development, in an attempt to implement a sustainable development strategy by adopting environmentally friendly materials and production processes, reducing product energy consumption and emissions, and promoting green manufacturing.

Enterprise transformation and upgrading often encounter many difficulties, with strategic planning, resource allocation, organizational structure, and other aspects playing crucial roles. Sany Heavy Industry also faces many challenges, including the backdrop of industry adjustments, the lack of successful case references, and the pains of business adjustments. Albeit with these challenges, it persists in its path of digital transformation, leading many enterprises towards internationalization.

### *3.3 Specific Analysis of Enterprise Transformation*

Sany Heavy Industry stands as a pioneering enterprise in the manufacturing realm, recognized as the inaugural "Global Lighthouse Factory" in digital transformation. Employing a diverse array of cutting-edge technologies such as the Internet of Things (IoT), cloud computing, and big data, the enterprise navigates the continuous evolution of its manufacturing services in response to internal and external environmental shifts (Zhou et al., 2023). Following a strategic logic path encompassing boundary identification, crossing strategy, crossing capability, and transformation performance, Sany Heavy Industry's digital transformation unfolds across multiple fronts. In marketing, the integration of a comprehensive online platform and Customer Relationship Management (CRM) system ensures seamless customer information management and precision marketing, elevating customer service standards. Furthermore, in manufacturing, Sany Heavy Industry optimizes processes through automation technologies, introducing automated assembly lines and precision machining to enhance efficiency and reliability while embracing data-driven intelligence based on automation. Additionally, the establishment of an intelligent flexible supply chain, facilitated by the Factory Control Center (FCC), enables end-to-end data-driven processes (by quickly decomposing orders into each flexible production line, each device, and each worker) from order to delivery, underpinned by intelligent production management for traceable and information-based operations.

In conclusion, Sany Heavy Industry has effectively transformed its business operations through digitalization, resulting in improved profitability and enhanced ESG performance. This transformation not only strengthens its competitive edge but also sets an example for other enterprises to embrace digitalization and maintain their competitiveness. However, it's crucial to note that funding is key to achieving corporate transformation and upgrading. Enhancing ESG performance also demands substantial financial support. The attainment of a robust ESG performance by enterprises garners increased social capital and fosters a favorable corporate reputation, propelling their transformation and engendering a virtuous cycle. Sany Heavy Industry's success in digital transformation and its consequent positive ESG performance alleviate financing constraints, thereby fostering further enterprise transformation and forming a virtuous cycle. Consequently, the company continues to progress and thrive.

## 4. Suggestions on Enterprise ESG Performance and Future Development of Enterprise Transformation

### *4.1 Current State of the Enterprise*

Sany Heavy Industry, boasting significant strides in ESG, is the only enterprise in the engineering machinery industry selected as a constituent of the CSI A50 Index. The enterprise not only intensifies its efforts in environmental protection to promote green development but also actively constructs lighthouse factories, focusing on capacity expansion while prioritizing energy conservation and emission reduction, showcasing a strong environmental consciousness and sense of responsibility. In light of social responsibility, Sany Heavy Industry not only strives to enhance customer value but also actively attends to employee welfare and engages in social welfare activities, demonstrating its comprehensive and in-depth commitment to social responsibility. Regarding corporate governance, Sany Heavy Industry continuously enhances its governance structure, improves governance standards, and strengthens communication with investors, providing robust support for the company's stable development.

Sany Heavy Industry has demonstrated remarkable green production capabilities in the field of ESG construction. The enterprise places great emphasis on optimizing product design and actively adopts environmentally friendly

materials and electrification technologies, significantly reducing energy consumption and emissions. In the production process, Sany Heavy Industry has successfully achieved automation, informatization, and intelligence with advanced processes and equipment, not only enhancing production efficiency but also reducing energy consumption and pollutant emissions.

By constructing lighthouse factories and extensively applying digitalization and intelligent technologies, Sany Heavy Industry has elevated its green production to new heights. Moreover, the company has established a comprehensive energy management and carbon monitoring system to ensure low-carbon and efficient production processes. In waste disposal and resource recycling, Sany Heavy Industry has also made significant achievements, maximizing the utilization of resources.

These innovative measures collectively contribute to Sany Heavy Industry's achievement of green production goals and make positive and far-reaching contributions to the industry's sustainable development.

*4.2 Examination of ESG Performance at Sany Heavy Industry to Facilitate Transformational Development*

Sany Heavy Industry's inclusion in the CSI A50 Index sample is attributable to its ESG initiatives and enterprise transformation development. Recent reports from Sany Heavy Industry reveal significant challenges faced amid fierce competition, adverse pandemic conditions, and cyclical fluctuations in the mechanical manufacturing industry. However, these challenges were overcome, largely due to the success of initial transformational experiments. We can draw upon the following experiences from Sany Heavy Industry's transformation.

Firstly, enhancing the level of new quality productive forces matters a lot. Situated in a strongly cyclical industry, Sany Heavy Industry effectively tackled cyclical fluctuations by fully leveraging flexible automated production, artificial intelligence, and scaled industrial IoTs. Advanced manufacturing systems coupled with a high-caliber research and development team, adept at and daring in innovation, led to the optimization of product portfolios, greatly enhancing supply chain flexibility and sustainability. This resulted in significant improvements in factory productivity, substantial reduction in manufacturing costs, lowered energy consumption, and heightened product quality and green production levels.

Secondly, Sany Heavy Industry has adopted a new energy industry layout, including initiatives such as "wind-solar-hydrogen storage." The relatively low cost and high quality of the new energy industry compared to traditional energy sectors have lowered the enterprise's production costs. The advancement of green technology has driven the increase in the proportion of Sany Heavy Industry's green value within the industry.

Thirdly, Sany Heavy Industry attaches emphasis on energy management and carbon monitoring. The establishment of an energy monitoring network for real-time management of carbon emissions throughout the production process ensures green, low-carbon, and efficient operations.

Lastly, Sany Heavy Industry prioritizes social benefits and internal management. Employees at Sany Heavy Industry enjoy opportunities for growth and development, while the continuous improvement of the enterprise's internal management system has somewhat mitigated financial risks. While giving back to society, the enterprise has also attracted more customers.

*4.3 Visions and Recommendations for Enterprises*

First and foremost, in light of the changing environmental landscape, enterprises like Sany Heavy Industry are confronted with increasingly stringent environmental protection standards and goals. Striking a balance between continuous investment in research & development and production technology enhancement while meeting environmental standards and achieving environmental goals poses a challenge. In terms of new energy, energy development remains imperfect, and development technologies urgently require continuous improvement. Coordinating energy structures to ensure stable and secure energy usage, as well as widespread energy supply, is essential. Initiatives such as "wind-solar-hydrogen storage" still require urgent development and expansion.

Sany Heavy Industry should adopt a forward-looking perspective to comprehensively strategize its layout, coordinate corporate fund allocation, and optimize resource distribution. Continuous adherence to the industry-university-research integration bears significance in appropriately increasing innovation expenditures and promptly assessing its own capabilities. Establishing goals, planning strategically, and guiding progress with specific focuses are imperative. Moreover, Sany Heavy Industry should thoroughly understand trends in consumer and investment markets, adapt its strategies according to local conditions and changing circumstances, and ensure the production of high-quality products in sufficient quantities. Moreover, it should reduce dependence on other industries and enhance its resilience against risks.

Furthermore, an active response to the expectations and concerns of stakeholders is essential. This includes

enhancing the capabilities of technical personnel, strengthening employee training to ensure employment and re-employment opportunities, and establishing robust partnerships to further bolster social influence.

Last but not least, with the increasing prominence of ESG principles, there is a heightened focus on enterprises' internal management mechanisms and transparency. Sany Heavy Industry needs to optimize its internal management structure, strengthen risk management, establish relatively comprehensive risk warning and response mechanisms, enhance the core cohesion of the enterprise, and ensure the security of internal data information and the stability and security of company operations.

## 5. Conclusion

To a certain extent, this paper confirms that by strengthening ESG management, enterprises can promote low-carbon and digital transformation, improve their market competitiveness, and achieve positive and greater progress in all aspects. As a new development trend indicator of Chinese enterprises, the ESG performance of enterprises should be based on the actual situation of enterprises, and should not blindly follow the trend because of the trend of the international community and China's policy support. Research on China's ESG performance is more about providing theories and establishing model ratings, and rarely takes a single company, or even a machinery manufacturing enterprise in China that urgently needs to adjust its management strategy. However, the research on Sany Heavy Industry is not in-depth in this paper, and the theoretical and practical support needs to be strengthened, and there is a lack of more cases to support the views of this paper, and more data are not used to further confirm the views of this paper. Transformation of businesses is necessary now. In the future, we will delve into corporate practice and explore how to better develop a company's ESG aspects from more aspects, hoping to help revitalize the industry in China and even the world.

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**Authors contributions**

Qiqi Wang was responsible for determining the topic, proofreading and revising the full text, and was also responsible for writing the introduction and the last part of the article. Zhaozhen Song and Yingyue Kang wrote chapters 2 and 3, respectively.All authors read and approved the final manuscript. Every author contributed equally to the study.

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