

Research on the Role of ESG in the Green Transformation of Enterprises under the Dual Carbon Goals

-- Taking Lenovo Group as an Example

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Abstract

Under the dual carbon goal, green transformation has become a necessary way for enterprises to achieve sustainable development, and the ESG concept that fits with it has also won new development opportunities. The ESG system evaluates the sustainability of corporate development from the perspectives of environment, society and corporate governance, covering multiple non-financial influencing factors that need to be considered in the process of realizing corporate benefits, and is an important reference mechanism for companies to implement the dual carbon goals. This paper takes ESG as the deep-level motivation of enterprise transformation, and takes Lenovo Group as a research case. Based on the dual-carbon perspective, this paper deeply analyzes the mechanism of ESG's role in promoting green transformation of enterprises, and sorts out the benefits and existing problems brought by ESG construction to enterprises. On this basis, we put forward suggestions that we should strengthen the leading role of ESG government, clarify the core position of corporate governance, and focus on the practicality of evaluation indicators, in order to inspire other companies to use the ESG evaluation system to achieve green transformation.

Keywords

Carbon Neutral; Carbon Peaks; ESG; Green Transition.

1. Introduction

In recent years, due to the increasingly serious climate problems caused by excessive global greenhouse gas emissions, a global economic and social systemic transformation has gradually unfolded, and the economic development model with the theme of net zero emissions and carbon reduction has attracted much attention. With the introduction and deepening of China's dual carbon goals, various green transformation practices have been carried out across the country, and "carbon peaking and carbon neutrality" has become an inevitable requirement for building a community of life between man and nature and achieving high-quality economic and social development. Under the dual-carbon goal, the whole society must firmly grasp the opportunities brought by the green transition and form a strong synergy to promote sustainable development. Among them, the ESG concept, which has something in common with my country's dual-carbon goal and sustainable development strategy, has been mentioned as a crucial position and has been widely used in all stages of production and operation of enterprises. Using the ESG evaluation system for green transformation can enhance the green competitiveness of enterprises and expand new space for enterprises to adapt to the new development pattern of "dual circulation".

As a leader in domestic ESG practice, Lenovo Group takes "dual carbon" as its strategic goal, conducts ESG reports with reference to international information disclosure standards, fully integrates ESG concepts into the company's overall operation process, and empowers upstream

and downstream industries. , product transportation, scrap management, energy consumption of production bases, environmental performance of suppliers and many other aspects to implement the ESG concept, in order to achieve scientific carbon reduction in the entire supply chain. Lenovo Group's ESG practice has set a new benchmark for corporate governance, providing an important value reference for other companies to use ESG to achieve green transformation.

At present, the research on ESG and corporate green transformation is very extensive, but the specific research on the role of the ESG evaluation system on the green transformation mechanism and path of enterprises is still insufficient, and there is still a lot of room for improvement in domestic ESG practice. In view of this, this paper selects Lenovo Group, a pioneer enterprise in domestic ESG practice, as a research case to explore the road of high-quality development of enterprises under the dual-carbon goal, providing valuable management inspiration for future enterprises to use ESG for green transformation, and also for domestic ESG development. Suggestions and suggestions.

2. Literature Review and Hypothesis Presentation

2.1. Dual Carbon Goals and ESG Evaluation System

In the future, the idea of carbon neutrality will be the biggest driving force for China's economic growth (Jin Yong, 2021). The proposal of the dual carbon goal has raised my country's green development to a new level. Under this goal, China's social and economic system needs systematic changes (Zhuang Guiyang, 2021). With the practice of the dual carbon goal, the ESG system has more room for development, and the excellent ESG rating has gradually become one of the criteria for judging whether a company is worth investing in. More and more researchers and analysts have formed a comprehensive evaluation of their economic, environmental and social performance by examining corporate financial information and ESG performance (Li Wen and Gu Xinke, 2021). Based on the specific connotation of ESG, in China, which is led by national policies and implemented by relevant institutions, the promotion and development of ESG is particularly rapid and has broad prospects (Zhao Xueyan, 2021).

2.2. Green Transformation of Enterprises

With the continuous advancement of the carbon neutrality goal of peak carbon, low-carbon green development has become a general trend in various industries in China. A green economy is an "affordable economy" built through environmentally friendly technologies and cleaner production (Pearce et al., 1989). Correspondingly, green transformation is the process of improving production and manufacturing by green-upgrading actual technologies through environmental regulation, innovative investment, etc. (Shi and Li, 2019). In terms of model construction, starting from the three evaluation dimensions of environmental protection, resource utilization, and competitiveness improvement, a hierarchical system of green transformation development evaluation can be better constructed (Xiao Hongwei et al., 2013); in terms of green transformation process, for enterprise management, Leaders can unleash the green creativity of employees through green intrinsic motivation and green extrinsic motivation (Qamaruddin Maitlo et al., 2020); in terms of technological reform, the path dependence of technological change will affect the diffusion of green technology and the development of a circular economy model by corporate innovation ecology. Make a positive impact (HOTTE K, 2020).

2.3. ESG Empowers Green Transformation of Enterprises

As a tool to promote green finance, ESG will be increasingly integrated with the green development of enterprises (Zhang Chenghui, 2021). Enterprises should actively follow the green index based on ESG indicator information (Zhang Lin and Zhao Haitao, 2019). The latest

PRI report shows that ESG information can generate alpha opportunities, and in emerging markets, the effect of ESG factors in creating alpha in Chinese stocks is more pronounced. However, in the process of ESG-enabled green transformation of enterprises, cooperation from multiple parties is even more necessary. The ESG system is a systematic project involving regulators, third-party research institutions, ESG investment companies, financial institutions, investors and other parties (Zang Ningning, 2021).

To sum up, the existing literature mainly focuses on the mode, behavior, and driving factors of corporate green transformation. However, due to the dynamic nature of domestic ESG system construction and the complexity of corporate green transformation, it is necessary to conduct more and more in-depth research. Further discussion and analysis on the use of ESG systems for green transformation of enterprises.

3. Case Study of Lenovo Group

3.1. Overview of Lenovo Group

Founded in 1984, Lenovo Group is an international technology company with diversified development and innovation. It has always been committed to providing Chinese users with the latest and best technology products and promoting the development of China's information industry. As of the end of 2021, Lenovo's fiscal year 20/21 turnover has exceeded 400 billion yuan, and it has established a global R&D structure centered on three R&D bases in Beijing, China, Tokyo, and Raleigh, the United States. From the "flat-bottomed clipper" model in the early stage of development to the later "big ship structure" model, and then to the current "fleet structure" model, the degree of regularization of internal management and control of Lenovo Group has been continuously enhanced, and a complete R&D system has been gradually formed. Close cooperation between departments to ensure Lenovo's innovation in cutting-edge technology. Since 2007, Lenovo has continuously issued external reports to disclose its actions and achievements in environmental, social responsibility and corporate governance, and practice social responsibility with a long-term approach. As a pioneer and leader in domestic ESG practice, Lenovo Group uses the digital model to use the ESG evaluation system as an indicator to measure performance, and empowers the entire industry chain to gradually achieve sustainable development.

3.2. Model Analysis of Lenovo Group's Green Transformation under the ESG System

3.2.1. Environment

Lenovo Group uses digital and intelligent equipment to scientifically analyze factors that have a significant impact on the environment, and continues to track and evaluate environmental indicators of relevant factors, integrating them into the performance evaluation of the entire industry chain. Lenovo is taking a scientific approach, through short-term, medium-term and long-term goals, in a step-by-step and phased manner towards a "zero-carbon future".

In terms of energy conservation and emission reduction, Lenovo leverages its advantages as a green and low-carbon pioneer to develop a comprehensive layout. While promoting green upgrades in product design, manufacturing, and packaging, it also drives partners in various industries to accelerate transformation through low-carbon solutions. The low-temperature solder paste process enables Lenovo to reduce carbon dioxide emissions by about 6,000 tons per year, which has become the "key key" to solve the "three highs" problems of the electronic product manufacturing industry; the warm water cooling technology reduces Lenovo's overall PUE value to below 1.1, which is lower than the domestic average PUE The value of 1.69 is also lower than the PUE value required by "East Numbers and West Calculations" for eastern and western nodes, which has pushed low-carbon energy saving a big step forward. In addition,

Lenovo has always been committed to exporting services and solutions to empower the low-carbon transformation and upgrading of the real economy through the complete technical architecture of "device-edge-cloud-network-intelligence".

3.2.2. Society

Customer first, integrity and win-win, entrepreneurship and innovation are the main contents of Lenovo's corporate culture. Lenovo implements the core values of diversity and inclusiveness on a global scale, and regards the step-by-step talent training and development as the source of maintaining team vitality. In 2020, Lenovo's global inclusive training completion rate reached 92%. Projects such as the "Lenovo Yixuetang" public welfare project, the "Beautiful Holiday" college students' warm public welfare tour, the Lenovo Future Center, and the "Lianmeng Seeing Plan" have benefited the people's livelihood and demonstrated Lenovo's sense of responsibility and social responsibility. At the same time, within the group, Lenovo promises to provide equal employment opportunities, fully attract diverse talents, and enhances a diverse and inclusive environment within the enterprise by promoting the "Product Diversity Office" to participate in R&D and other measures.

3.2.3. Corporate Governance

Lenovo Group has built a systematic and complete ESG management framework, and established different levels of implementation and supervision agencies to promote the Group's ESG projects through regular assessment of ESG risks and relevant countermeasures. The Lenovo ESG Executive Supervision Committee is responsible for strategic guidance related to ESG work, and to coordinate and promote the company's overall ESG work. In addition, Lenovo sets supplier management goals in multiple dimensions such as product scrap management, supplier environmental performance, and greenhouse gas emissions during transportation every year. While applying green technologies to itself, Lenovo drives the upstream and downstream of the group's supply chain to jointly achieve green transformation and upgrading.

3.3. SWOT Analysis of Lenovo Group's Green Transformation with ESG

3.3.1. Strengths

Corporate culture is the driving force for enterprises to achieve green transformation and obtain the effect of circular economy. As a global company, under the vision of "intelligence, for every possibility", Lenovo is moving towards the goal of green and low-carbon, and applies scientific corporate culture to the long-term development process of the company. Lenovo's entrepreneurial spirit, values and corporate image have greatly inspired employees and established a great brand advantage for Lenovo. At the same time, Lenovo Group attaches great importance to the development of innovation, especially responsible innovation. Lenovo's ESG practice includes a complete governance structure, from packaging, products to global manufacturing footprint, ESG goals are fully integrated into it.

3.3.2. Weaknesses

In the past few years, Lenovo's operations have focused more on service than research and development. However, placing too much emphasis on services will inevitably lead to shortcomings in Lenovo's research and development, resulting in insufficient accumulation of the Group's technology. Therefore, Lenovo has gradually started digital transformation in recent years. However, data centers are recognized as high-energy-consuming industries, and relevant environmental indicators will directly affect the efficiency of Lenovo's green transformation. As Lenovo's ESG practice has gradually achieved results, its intelligent construction will further improve the economic and social benefits of the enterprise, but this process still faces the difficulty of improving the energy efficiency of data centers and the dilemma of building green IT basic computing power.

3.3.3. Opportunities

The "dual carbon" goal is a testimony to my country's sustainable development and a powerful driving force for the green transformation of my country's enterprises. The Chinese government has made a commitment to strive to achieve carbon peak by 2030 and carbon neutrality by 2060, demonstrating to the world the responsibility of a major country. Faced with the current trend, Lenovo Group is actively carrying out green and low-carbon transformation, and strives to strengthen the construction of corporate ESG, so that the ESG system can play its due role in the process of corporate green transformation and help achieve the dual-carbon goal. As a leader in the domestic ESG field, Lenovo has successively released two new ESG reports, clearly showing the outside world the achievements of Lenovo in green practice, and revealing to the society the effect of the current corporate green transformation and its low-carbon performance. It provides a reference for the high-quality development of Chinese enterprises.

3.3.4. Threats

At present, the positioning of international brands has begun to gradually shift, and the mid-to-low-end market has been tapped. In addition, due to the increase in price fluctuations of spare parts such as memory and the labor shortage in the Yangtze River Delta and Pearl River Delta, labor costs have risen. The original low-cost competition of domestic PC manufacturers The advantage has weakened, and the price advantage of Lenovo Group is no longer significant. At the same time, with the emergence of a large number of emerging brand computer manufacturers such as Huawei and Xiaomi, Lenovo is facing a huge threat in terms of business competition and brand advantages. In the face of strong opponents, it is not easy for Lenovo Group to produce products that can win market share while focusing on green and low carbon. Issues such as capital and technology will become difficult.

In addition, the development of the ESG system in China is still in its infancy, and a relatively unified and easy-to-reference standard has not yet been formed. At the same time, many companies do not pay enough attention to the quality and content of ESG disclosure, which brings certain challenges to Lenovo's green transformation practice in empowering companies in the supply chain. There may be inconsistent corporate evaluation standards and conflicting corporate development strategies. threaten.

4. The Benefits and Problems of Esg's Role in the Green Transformation of Enterprises

4.1. The Benefits of ESG's Role in the Green Transformation of Enterprises

4.1.1. Economic Benefits

For investors, the ESG system provides a comprehensive and unified framework from a practical point of view, helping investors to explore long-term investment opportunities, avoid potential risks, and push back the sustainable growth of enterprises and the stability of medium and long-term investment. For enterprises, ESG information disclosure helps to supervise the production and operation activities of enterprises, and encourages enterprises to pay more attention to social responsibility, employee welfare, environmental protection, etc. in addition to creating profits.

4.1.2. Social Value

The ESG system can help enterprises to digitize social value, pursue the unification of social value and economic benefits, and promote enterprises to take a green, low-carbon and high-quality development path. The case enterprise Lenovo Group in this paper uses ESG to drive upstream and downstream enterprises in the industrial chain to carry out energy-saving and environmental protection transformation, realize the green development of the entire

industrial system, and become a benchmark for enterprises with a sense of social responsibility under the ESG system.

4.2. Problems Existing in the Application of ESG in Enterprise Green Transformation

4.2.1. Companies do Not have a Deep Understanding of ESG

Compared with developed countries, sustainable investment in my country is in its infancy, and the sustainable investment concept of the public, especially institutional investors, lags behind. According to the survey results of the "China Responsible Investment Annual Report", nearly 90% of the respondents do not understand responsible investment, and nearly half of the respondents have not even heard of the relevant concepts of "responsible investment" and "ESG". The level of awareness of ESG is still at a low level; at the same time, most market entities also lack accurate awareness of ESG. The quality of corporate ESG information disclosure is uneven, and even many companies' perception of ESG remains at "doing ESG is doing charity".

4.2.2. Defects in ESG-related Regulation

Although my country has issued guiding documents to encourage companies to disclose business environment and social responsibility information, it has not yet established specific regulations for the ESG system. The ESG-related information of listed companies is mainly voluntary disclosure, and there is a lack of a unified framework, which brings great difficulties to the establishment of the rating system, and cannot satisfy market investors for a better disclosure system and a more credible ESG rating. demands of the system.

4.2.3. ESG Disclosure is Asymmetric

Under the current ESG system, many companies have a weak awareness of ESG information disclosure, and regard ESG information disclosure as a controllable cost, ignoring the consequences of the asymmetry between investors and corporate information disclosure. Many companies intentionally hide information that is unfavorable to themselves and selectively disclose information that is beneficial to themselves, resulting in serious asymmetry between the information obtained by investors and the actual information of the company. The perception of ESG is seriously biased.

4.2.4. Inconsistencies in ESG Rating Criteria

The ESG system has not yet formed a unified evaluation framework and credible rating standards, and there is a lack of detailed ESG evaluation indicators. Therefore, the ESG information disclosed by enterprises cannot be compared horizontally and vertically. In addition, the ESG evaluation indicators of different companies and even the same company in different years are often quite different, which will make it difficult for investors to accurately judge the ESG rating of the company, and also make the use and availability of ESG information low.

5. Conclusion and Recommendations of This Study

5.1. Conclusion

In today's era of intelligence, social and environmental issues are actually potential development opportunities, not just a cost item. From this perspective, the process of creatively solving environmental and social problems is the process of adding value. As a benchmark for domestic enterprise ESG development, Lenovo Group attaches great importance to the development of enterprise ESG system, and has built a relatively complete ESG framework, which not only improves economic benefits, but also increases social value. Lenovo supports the development of its core business with ESG strategy, uses digitalization and intelligence to achieve quality improvement, cost reduction and emission reduction, improves its own ESG

strategy construction and has achieved excellent results. As an emerging enterprise evaluation index, the ESG system can promote the green transformation of enterprises, break through the original economic structure, and inject new momentum into energy conservation and emission reduction.

In the context of the global transition to the "post-epidemic era", the resistance and resilience of companies with high ESG ratings to short-term extreme risks during the epidemic can leave a deeper impression on investors. Enterprises with excellent ESG performance are still continuing to generate profits, especially as the carbon peak of the real economy and the gradual development of green and low-carbon transformation, the influence of environmental factors in the capital market will become more prominent, and the practice of ESG has become a company value important chain of growth.

5.2. Suggestions

5.2.1. Strengthen the Leading Role of ESG Government

At present, the three forces of geo-economy, global supply chain, and responsible investment are accelerating the ESG of Chinese listed companies. The goal of "dual-carbon" leadership and zero-carbon competition has become more and more clear in the process of corporate green transformation.

In the practice of green transformation of enterprises with ESG concepts, the government and regulatory agencies should act as top-level leaders, update and improve policy guidelines related to ESG management concepts in a timely manner, gradually establish unified ESG information disclosure standards, and strengthen listed companies' due diligence management of ESG implementation. Participation is emphasized, and the government's function of regulating and supervising corporate environmental risks is brought into play.

5.2.2. Clarify the Core Position of Corporate Governance

As the main body of ESG practice, enterprises should further play a leading role in their green transformation process, based on their own reality, internalize ESG concepts into company virtues, use clean energy for product production, comprehensively promote the structural adjustment of energy and resources, and Carry out regional assistance according to local conditions and undertake social responsibilities. By formulating an overall solution for transformation from strategy to implementation, and deploying carbon neutrality and ESG as its own internal business, multiple benefits can be achieved.

5.2.3. Evaluation Indicators Should Focus on Practicality

In terms of ESG ratings, most institutions currently conduct ratings around three major indicators: environment, society and corporate governance. In this process, attention should be paid to providing a comprehensive and unified framework from the perspective of practical operation, evaluating the effectiveness of enterprises in implementing the concept of green development, clarifying the matters and directions that should be paid attention to in production and investment, and then guiding enterprises and the government to make effective decisions. Combining ESG qualitative and quantitative data, evaluating companies' ESG construction on an objective and realistic basis, helping companies, governments and regulatory agencies to carry out ESG practices in a more specific system framework, thus providing investors with ESG concepts. Guidelines for investment behavior.

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