INSTITUTO
UNIVERSITÁRIO
DE LISBOA

Research on business model optimization of Company A under the background of dual carbon

Junjie Liu

Master in Applied Management

Supervisor:
Professor Doctor Ulpan Tokkozhina, Invited Assistant Professor,
ISCTE-IUL

October 2024

BUSINESS SCHOOL

Department of Marketing, Operations and General Management

Research on business model optimization of Company A under the background of dual carbon

Junjie Liu

Master in Applied Management

Supervisor:
Professor Doctor Ulpan Tokkozhina, Invited Assistant Professor,
ISCTE-IUL

October 2024

Acknowledgements

Here, I would like to take this opportunity to express my deep gratitude to all the people who have given me support and help in the process of studying ISCTE master of Applied Management.

First of all, I would like to thank my project instructor, Professor Ulpan Tokkozhina. Your professional guidance and detailed feedback help me make continuous progress in my research. Although I encountered some difficulties in writing my project, your patience and support enabled me to overcome the challenges and successfully complete the research.

At the same time, I would like to thank my classmates in particular. The year I spent with you was full of unforgettable times. Our cooperation and discussion not only helped me grow academically, but also inspired me personally. Your support and friendship are my most precious wealth in this journey.

In addition, I would also like to thank all the professors and staff of ISCTE for their great help in the curriculum and academic resources. This has provided a solid foundation for my research and also benefited me a lot from my study.

Finally, I would like to express my most sincere thanks to my family and friends. You have given me unconditional support and encouragement in my academic career, which makes me full of confidence and motivation. Without your support, I cannot successfully complete this journey.

Thanks again to all those who have helped me. Your support has prepared me for the challenges in the future.

ABSTRACT

The high-speed development of the economy is bound to be inseparable from the demand for energy. As a company based on the coal industry and high energy consumption industry, the industrial cluster and business model are facing the crisis of transformation, and the sustainable development potential of enterprises is limited. By using existing resources to optimize and upgrade the industrial structure and business model, the road of sustainable development of enterprises can be smoothly promoted by turning crisis into opportunity.

This paper takes Company A as a case to analyze the implementation of Company A's business model in the context of dual carbon. Firstly, the meaning of relevant theories and concepts are described. Then it analyzes the current situation of the company's business environment, and expounds the company's basic situation, existing problems and business environment. Secondly, PESTEL and Porter's five forces model are used to analyze and study the external environment of a company's business model optimization, and the external environment support for business model optimization is proposed. Then it puts forward the relevant measures and methods of a company's business model optimization. Finally, conclusions are drawn and the future development prospects are put forward. This plays a very important role and significance in improving the optimization effect of Company A's business model.

Keywords: Double carbon target, business model, coal operation, corporate responsibility

JEL Classification: L00

RESUMO

O rápido desenvolvimento econômico está intrinsecamente ligado à demanda por energia. Para a Empresa A, que se concentra na indústria de carvão e em setores de alto consumo energético, tanto o grupo industrial quanto o modelo de negócios enfrentam uma crise de transformação. O potencial de desenvolvimento sustentável da empresa é limitado. No entanto, ao otimizar e atualizar a estrutura industrial e o modelo de negócios utilizando os recursos existentes, é possível transformar a crise em oportunidade e promover o caminho do desenvolvimento sustentável da empresa.

Este estudo utiliza a Empresa A como um caso para analisar a implementação do modelo de negócios da empresa no contexto de duplo carbono. Primeiramente, são explicados os conceitos e teorias relevantes. Em seguida, analisa-se o ambiente operacional atual da empresa, descrevendo a situação básica, os problemas existentes e o ambiente de operação. Além disso, são utilizados os modelos PESTEL e as cinco forças de Porter para analisar e estudar o ambiente externo de otimização do modelo de negócios da Empresa A, propondo suporte ambiental externo para essa otimização. Posteriormente, são sugeridas medidas e métodos para a otimização do modelo de negócios da Empresa A. Por fim, o texto é resumido e são apresentadas perspectivas de desenvolvimento futuro. Isso é de extrema importância e significado para a melhoria da eficácia da otimização do modelo de negócios da Empresa A.

Palavras-Chave: Metas de duplo carbono， modelo de negócios， operação de carvão; responsabilidade corporativa

JEL Classification: L00

Table of Contents

List of Tables

List of Figures

1. Introduction

As global warming progresses and the number of foggy days increases, humans have discovered that the Earth's environment, upon which they depend for survival, has been severely damaged. Countries around the world, while developing their economies, have begun to prioritize environmental protection, vigorously developing low-carbon economies and shouldering their social responsibilities. The energy structure of "rich coal, less gas, and lack of oil" determines China's energy demand dominated by coal, which is the most abundant resource in China. As the basic energy source for social production and life, coal plays a vital role in ensuring people's livelihood, and has always occupied a dominant position in the production and consumption structure of primary energy. However, there is a certain contradiction between the continuous promotion of supply-side structural reform and the implementation of carbon peak and carbon neutrality and social responsibility, focusing on resolving the two paths of overcapacity and high-quality development of the coal industry, and the excessive growth of energy demand in the economic and social sectors. It is urgent to improve the quality of supply, promote the strategic adjustment of industrial structure, and achieve industrial optimization and upgrading. From the perspective of the development trend of the coal industry and the national positioning of the coal industry, achieving carbon peak and carbon neutrality not only requires adjustments in the coal supply structure, but more importantly, it requires the construction of a new pattern for the development of the coal industry, ensuring the bottom line of energy security, promoting the upgrading and transformation of the coal industry, supporting the development of new energy and new material projects, maintaining the safety of the industrial chain, promoting the clean and efficient use of coal, reducing carbon emissions, and maintaining ecological environmental security. However, new energy needs to completely replace fossil energy dominated by coal, and coal will continue to play a role in providing a backup for a long time under the current energy situation. Given the current low level of reliability of new energy sources, promoting efficient and clean utilization of coal, controlling coal consumption growth through green and low-carbon production and efficient and clean utilization will be the strategic development direction of the Chinese government. Accelerating intelligent production in mining areas, improving coal production efficiency, reducing energy consumption during production processes, promoting coal washing procedures, and improving coal quality and coal combustion efficiency will be key strategies for the Chinese government.

The "dual carbon" and "dual control" are important tasks for the current and future. The Chinese government has also emphasized in many meetings that promoting carbon peak and carbon neutrality is a realistic measure to implement the new development concept, and that we should adhere to the green and low-carbon mode in both production and living fields.

In the context of "dual carbon", coal enterprises will transform from traditional production mode to clean, efficient and low-carbon business model, which will ultimately be implemented in new energy projects and new material projects. For investors and business managers, it is necessary to evaluate the target enterprise value and business model. The research results have very important theoretical significance for future scholars to learn and enrich the theoretical circle on the optimization of business models in the context of dual carbon. How to scientifically ensure that decisions are correctly implemented is a key link in the life cycle of enterprise transformation projects and optimizing business models. On the one hand, it is beneficial to the future investment business development and internal management of the company itself. On the other hand, it can also provide relevant reference suggestions for other coal enterprises and even other industry enterprises when conducting cross-industry and cross-domain investment projects. It has important practical significance for the decision-making management of coal enterprise transformation projects.

With the downturn of the coal industry market, various problems in the coal circulation and logistics industry have gradually emerged, and enterprises have fallen into disorderly competition, exposing many problems in the logistics process; The problem of insufficient funds has existed for a long time, and a considerable number of coal logistics enterprises cannot guarantee the perfection and smoothness of the capital chain. The enterprises cannot follow the market development trend and withdraw from the competition stage in the context of the coal market downturn. The logistics industry under company A has not been spared. The previous rapid development pursuit and trade model that only focused on revenue scale have gradually caused operational difficulties, such as a single business model, low profit margins, and huge capital risks due to the occupation of funds. The existence of these problems is not conducive to the development of large-scale coal enterprises, but also brings favourable conditions for transformation and development and innovation of business models. Therefore, through understanding the current business model of company A in the context of dual carbon, conducting detailed research on the internal and macro environments, and combining with the actual situation of company A, we can identify the problems existing in the current business development and propose optimization measures and paths for company A's business model.

The rest of this project is arranged as follows: Chapter 1: describes the research background and significance, research objectives, research content and methods of this topic, and leads to the research content of this topic.

Chapter 2： describes the relevant research results of domestic and foreign experts and scholars on the business model and development of coal enterprises, which provides a reference for the study of the business model optimization of company a and a direction for

this study.

Chapter 3: describes the methods and writing ideas used in the writing process of this paper. Through CNKI to find the literature, stow analysis, PESTEL analysis and Porter's five forces model are selected as the analysis tools of this study.

Chapter 4: describes the basic situation, business mode and business model of company a, puts forward the problems and difficulties existing in the current business process, and analyses the internal and external environment of the company through SWOT analysis.

Chapter 5: describes the methods used in the analysis, analyses the current macro environment with PESTEL analysis tool, and analyses the current competitive environment of the company with Porter's five forces model.

Chapter 6: expounds the suggestions of business model optimization, puts forward the development vision of the company, designs the business model optimization, and plans the implementation path of strategic transformation, and makes a comparative analysis of the planned business model and the traditional business model.

Chapter 7: summarizes the research results of business model optimization of Company A, put forward the implementation suggestions of business model optimization, and elaborate the problems and deficiencies in the research process.

2. Literature Review

2.1 Research on the concept of business model

Hutahayan and Wahyono (2019) believed that if a company wants to achieve long-term stable and positive development, it should break the original business model through experimentation, openness, and active innovation. However, blindly repairing, adapting, and adjusting some business models that are not suitable for the company's development will limit the sustainable development potential of the enterprise.

Miller et al. (2020) believed that the nature of business models is strongly related to the practicality of enterprises, their development capabilities, and innovation. In today's volatile world situation, how to maintain the innovation of business models is one of the key factors for enterprises to succeed.

Bashir et al. (2020) demonstrated the importance of business models for enterprises by analyzing and studying the triggering factors, presumption factors, obstacles, business model dimensions, and influencing factors of results in the development process of enterprises. He also demonstrated the importance of business model innovation for the sustainable development of enterprises through multiple dimensions and perspectives.

Von and Zhao (2020) studied the importance of business models in the process industry, emphasizing that business model design and innovation are closely related to stakeholders in the business. He also proposed the relationship between technological innovation and business models, as well as the process and results of business model innovation. In the development process, companies should not only focus on shaping the value chain of the enterprise, but should also consider shaping a business model that can maintain long-term vitality and ensure the core competitiveness of the enterprise.

Zhao (2021) believed that information is crucial for business model innovation. In the context of the digital age, barriers between industries and between enterprises are constantly being broken. To maintain its core competitiveness and prevent it from being surpassed by competitors and eliminated by the times, an enterprise must embrace digital tools and methods to better create value for the enterprise. Enterprises can obtain information and data through informatization for analysis and timely grasp of the latest developments. They can also use big data and informatization technology to predict market trends, customer needs, and market competitor dynamics, and make advance arrangements. This can not only improve the management capabilities of enterprises, but also promote business model innovation. Therefore, digitalization and informatization are crucial for enterprises.

Barros et al. (2022) proposed a business model for circular economy in enterprises. Global climate warming and the environment on which human beings rely for survival are

being wantonly destroyed. Maintaining the concept of sustainable development of energy conservation and environmental protection is the cornerstone of long-term development for enterprises. The circular economy advocates the recycling of materials, finished products, and recyclable waste for secondary processing and value creation. This not only reduces the waste of resources and reduces costs and efficiency for enterprises, but also reduces the pollution caused by the disposal of recyclable waste to the environment. Although the circular economy model is good, it still needs the support of governments, enterprises and people around the world to maximize its value.

Torbacki (2024) believed that the concept of business model is based on strategic management, industrial economics, and corporate practices. In the past three decades, the birth and development of the Internet has greatly increased the attention paid to the concept of business model, but it has not become a research focus in the field of management. At present, more and more enterprises are blocked in their development and trying to transform, and research related to business models is gradually emerging.

Nanond (2024) believes that the business model is a combination of value creation and system theory. It refers to the integration of internal and external factors that enable the operation of an enterprise in order to maximize customer value, forming a complete and efficient operating system with unique core competitiveness. This system can meet customer needs and achieve customer value through the best implementation form, thereby achieving the goal of sustained profitability.

Zhang and Gao (2024) believed that a business model is a system architecture that includes both strategic ideas and institutional arrangements, with the aim of helping companies create higher value. They believe that the connotation of business model can be analyzed from four aspects: first, creating value; Second, integrate more values together; Third, optimize and coordinate the relationship between all stakeholders; Fourth, there are several elements that are both interconnected and maintain their independence.

2.2 Research on business model innovation

Siedhoff (2019) discussed how to achieve transformational innovation through business model innovation. In the ever-changing market environment and severe global competition, enterprises should plan their industry positioning based on their own reasonable business models and value creation, follow the trend of the times, effectively use digital tools to analyse industry trends, innovate based on their original business models, and create unique business models that belong to the enterprise, so as to promote innovation and development.

Li and Shen (2019) studied that rural and remote areas and economically underdeveloped regions in developing countries face major challenges in achieving the dual

goals of economic growth and decarbonization. One of the main factors restricting the economic growth of developing countries is the lack of stable energy supply for economic development, which is constrained by the insufficient supply of traditional energy sources and the lack of sufficient financial resources to pay for domestic energy consumption. To break the dilemma of energy shortage, we should break the traditional thinking logic and business model, combine the local and regional environment, natural conditions and effectively utilized resources, promote the available opportunities of new energy, clean energy, renewable energy and distributed energy, and take multiple measures to ensure the stable supply of energy, so as to drive the stable economic growth of developing countries.

Marzec (2019) studied the business model of innovative start-ups in the face of globalization challenges. With the advancement of technology and the rapid development of the economy, the difficulties and challenges faced by enterprises in the process of transformation and development are gradually becoming more complex. To maintain rapid, healthy and stable development, enterprises must adapt to the changes of the times and adjust and optimize their business models in a timely manner. Through innovative business models, we maximize the advantages of enterprises and help them stand out from many competitors.

Taran et al. (2021) studied the influencing factors of the business model innovation process. In the preparation stage of business model innovation, it is necessary to collect, organize, and analyze the impact of internal and external environments on the enterprise, identify possible opportunities and challenges, and provide sufficient theoretical and practical foundations for the transformation of the enterprise; When undergoing business model transformation, enterprises should ensure sufficient resource allocation to aid in the transformation and development of the enterprise, ensuring a smooth innovation process; During the transformation process, the management team should adjust management methods in a timely manner based on the progress of business model innovation to ensure that business model innovation matches the business strategy of the enterprise and provide management support for the transformation process.

Geissdoerfer et al. (2022) proposed the driving factors and obstacles of circular business model innovation. The innovation of circular business model is based on reducing the excessive consumption, waste, and unrestrained emissions of resources in the production process of enterprises, optimizing from the perspective of economic performance and sustainable development, integrating circular economy into the innovation process of enterprise business model, and providing development space for energy conservation, environmental protection, and sustainable development of enterprises. At the same time, the circular business model can also create benefits for enterprises by achieving cost reduction and efficiency improvement.

Espinosa et al. (2023) studied the logical relationship between business model innovation and the sharing economy. The sharing economy model, as a relatively active business model innovation in recent years, has been favored by the market by expanding the audience customer base on the basis of traditional business models to spread the operating costs and risks of enterprises. The sharing economy is not only leading the trend of new business models, but also challenging traditional business models. Traditional business models should draw on the sharing economy model appropriately, and maintain their core competitiveness through digitalization, informatization, and entrepreneurial model innovation.

Meng (2024) found that this behavior of enterprises is based on the basic value chain when conducting research on business model innovation. It is necessary to change the three value chains of customers, channels, and suppliers, but the ways of change are different. In the process of reform and innovation, enterprises should first grasp the meaning of business model, understand which business model is most suitable for them, and also clarify the steps to implement the reform of business model.

Song and Zhang (2024) believed that the implementation of various reforms is not an accidental phenomenon, but even innovations that occur by chance can produce unexpected results. To achieve greater success, enterprises must actively expand the scope of reform, recognize the value of innovation, and adopt specific means to innovate, so that the business model can be continuously improved, and maintain an advantage in market competition to achieve the most ideal business model.

2.3 Research on the Development of Coal Enterprises under the "Dual Carbon" Background

Pan (2021) studied the path of building a green development system for Chinese coal enterprises. According to the national guiding policies, coal enterprises should break the routine, actively build business models that are in line with their own carbon transformation, and upgrade high-energy consumption, high-pollution and backward equipment. The problems of management confusion and backward technology can be solved by improving digitalization, informatization and intelligence, and building a broad road for the green development and sustainable development of coal enterprises, guiding China's coal enterprises to achieve carbon transformation.

Wang et al. (2022) studied the impact of China's coal consumption on the implementation of the dual carbon target policy. As the world's largest coal consumer, China has always been the world's largest carbon emitter. Since China proposed the goal of carbon peak and carbon neutrality, the government has made great contributions to energy structure adjustment and energy supply business model innovation. For coal enterprises, how to

optimize business models and management strategies under the background of carbon peak and carbon neutrality, through improving energy utilization, enhancing equipment efficiency, reducing energy consumption, and increasing the use of environmental protection equipment and carbon capture infrastructure, are all key factors for coal enterprises to win in the implementation process of carbon peak and carbon neutrality policies.

Jin (2022) studied the standardized development path of Chinese coal enterprises in the context of dual carbon. Coal accounts for half of China's energy consumption. To achieve a green, healthy and rapid transformation of coal enterprises, it requires not only the joint efforts of all sectors of society, but also the government's introduction of corresponding laws as institutional guarantees to guide coal enterprises on how to steadily achieve the goal of green transformation.

Da (2022) studied the impact of carbon trading on the coal supply chain. Research indicates that coal, as one of China's primary energy sources, is distributed across numerous industries related to the coal sector. For China to achieve carbon neutrality, it needs to consider not only energy conservation and emission reduction factors, but also the feasibility of carbon capture and carbon trading. The carbon emissions of high-carbon and low-carbon industries complement each other, and gradually reducing investment and scale in high-carbon industries while encouraging investment and development in low-carbon industries is a multi-pronged approach to help achieve the dual carbon goals.

Yu (2023) studied the implementation path of using coal mining areas as carbon sequestration. Coal has also played a significant role in the historical process of China for nearly a thousand years. After long-term mining and excavation, there are many abandoned mines, work areas, and coal mining areas in various provinces of China's major coal-producing areas. These are abandoned or abandoned resources. Although these areas can no longer produce coal, abandoned mines can be used as storage sites for capturing carbon dioxide. This not only can bring the value of abandoned mines into play, but also can reduce the cost of carbon storage and the cost of backfilling and treating the mines. This is a very worthwhile move for coal companies or similar mining companies to learn from.

Pan (2023) evaluated the development of China's coal industry using indicator evaluation methods, pointing out that the level of green development in China's coal industry has fluctuated and increased year by year, and the overall trend of green development in the coal industry is positive, but clean production and efficient utilization of resources have not yet been fully achieved.

Pan and Yan (2024) believe that in order to achieve China's "dual carbon" goal, traditional coal enterprises should develop a path of high-quality development; Elaborated how traditional enterprises achieve the transformation of traditional energy; He believes that the experience of traditional enterprises is to adjust the industrial structure, cultivate new

economic growth points, achieve transformation of the traditional coal industry in a low-carbon context, and build a sustainable development path for the coordinated development of low-carbon and green energy.

Qiao (2024) explored how to achieve green and intelligent development of coal enterprises under the background of the established "dual carbon" goal. They proposed measures such as improving clean technology of coal enterprises, comprehensively carrying out mine governance, and introducing Internet technology.

Zhao (2024) discussed the new development path of coal enterprises. He believed that coal enterprises should adhere to the path of research and innovation under the current background of "carbon neutrality and carbon peak", and should achieve technological and equipment upgrades in the short term, and realize green mining and cost reduction under the guidance of intelligence; In the medium term, we should carry out model innovation, develop low-carbon technology, and avoid risks; In the long run, it is necessary to adjust the industrial structure, deploy new industries and energy, and achieve sustainable development of coal enterprises.

Xue (2024) conducted research on the green development model of coal enterprises from different levels of macro, meso, and micro, and proposed innovative coal development paths, including the compatible development of clean production and resource recycling economy, the construction of ecological industrial parks, and the creation of low-carbon economic models.

2.4 Research Review

Through analysis of the current research situation, it can be seen that the academic research on business models mainly focuses on the concept and constituent elements of business models as well as innovation research. As for coal enterprises, it mainly focuses on green development, energy conservation and emission reduction, as well as the direction of carbon peak policy guidance. Generally speaking, from a conceptual perspective, business models are always in the process of optimization and iteration. As time goes on, the optimization results of business models will become more and more perfect. Initially, the formation of a business model is only for profit, and later more elements will be gradually incorporated to form a powerful management system, which can become an important tool to bring strong competitiveness to the enterprise. Through research and study of these documents, it can provide more references and argumentation for the optimization research of A company's business model.

3. Methodology

3.1 Literature review method

By using tools such as China National Knowledge Infrastructure（CNKI） to retrieve literature on strategic transformation of business models, and by summarizing existing theories, this research provides a basic theoretical framework and method for research on the strategic transformation of Company A. Then, in the study of strategic transformation, A company was selected as a case study.

3.2 Methodology

Under the background of "double carbon", based on the actual situation of Company A, SWOT analysis, PESTEL model and Porter five forces model were used for comprehensive analysis to help identify the opportunities and challenges of enterprises in low-carbon transformation.

First, SWOT analysis is used to assess the internal strengths and weaknesses of company a, as well as external opportunities and threats. The advantages may include technological innovation ability and market share, while the disadvantages may be high energy consumption and high pollution. Opportunities lie in policy support and green technology development, while threats come from market competition and environmental regulations.

Secondly, PESTEL model analyzes the macro environmental factors. Political factors include the government's environmental protection policies and carbon neutrality goals; Economic factors involve fluctuations in energy prices and changes in market demand; Social factors emphasize the improvement of public awareness of environmental protection; Technical factors focus on the progress of clean energy technology; Environmental factors involve the impact of climate change; Legal factors include environmental protection regulations and requirements of carbon trading market.

Finally, Porter's five forces model is used to evaluate the competitive situation of the industry. The bargaining power of suppliers, the bargaining power of buyers, the threat of potential entrants, the threat of substitutes and the strength of industrial competitors all affect the strategic choice of company A.

3.3 Case analysis method

Based on the operation data, financial reports and other relevant materials provided by Company A, the analysis of the relevant business data and business model of Company A

can analyse the actual situation and current situation of the enterprise, and provide the basis for the optimization of the business model.

4. Information Analysis

4.1 Basic information of Company A

4.1.1 Introduction to Company A

Company A was found in the 1970s and is a large state-owned enterprise mainly responsible for coal washing and coal trading. The company mainly engages in wholesale and retail as well as import and export business of bulk commodities such as coal, coke, steel, and iron ore. Relying on its own advantages in coal business, it actively expands non-coal business and forms a business model that focuses on coal professional logistics and radiates to surrounding industries. Company A is a well-known energy company in China and has been listed as one of the key energy enterprises by the National Development and Reform Commission for many times. It currently has more than 15,000 employees. After years of accumulation, the company's customers are basically domestic leading enterprises, with a wide range of business coverage. Since its establishment, Company A has adhered to the low-carbon goal as a business development requirement, and strives to respond to the national dual carbon goal implementation requirements by reducing carbon emissions. Company A's business is based on coal trading, and its coal products and services also cover the upstream of the supply chain, such as coal exploration and mining, as well as the downstream of the supply chain, including coal transportation and processing. It plays an important role in the supply chain. Based on market orientation, A company has not only maximized its economic benefits in the context of the dual carbon goals over the years, but also taken into account reducing carbon emissions to the environment, forming a new pattern of diversified development with coal as the main business and non-coal businesses. However, with the current slowdown in economic development, the operating efficiency of Company A has also shown a decline over the years.

4.1.2 Company A's industrial layout and planning

After the national release of the dual carbon targets, Company A also received the implementation opinions on the dual carbon targets issued by the National Development and Reform Commission and local development and reform commissions, requiring Company A to strictly implement the plan proposed by the state to reduce carbon emissions. In this context, Company A actively prepares for the company's low-carbon emission planning team to optimize the industrial layout. However, according to the current business model of Company A, it cannot be implemented in one step. Therefore, it is necessary to develop a transitional energy source in a timely manner to help the company temporarily alleviate the pressure brought by the goal of carbon reduction. On the basis of ensuring steady growth in

company revenue and profits, it is necessary to gradually move towards a low-carbon goal. The restricted government has not yet issued specific implementation rules and specific planning schemes for carbon neutrality. Although Company A's industrial layout and planning focus on clean energy, new energy, and renewable energy, it is still waiting to see further introduction and clarification of national policies.

4.1.3 Current business operation status

a. Business development

In recent years, Company A has mainly focused on coal trading as its main business in its business development, and has gradually derived multiple industries from the supply chain, such as trading in bulk commodities such as coke, iron ore, and steel. Meanwhile, Company A mainly sources its coal resources from the production areas and has signed long-term cooperation contracts with suppliers to obtain key business resources. In daily business development, most of the coal, coke and steel are mainly traded domestically, while most of the iron ore is purchased through foreign trade imports. In sales, most of the sales are concentrated, supplemented by decentralized sales. At the same time, the Company Also enhances the value of its business through coal product processing, thereby gaining more economic benefits. At present, the procurement of coal resources mainly meets the energy development needs of industrial enterprises such as steel, coking, and cement in surrounding areas. Company A exports some of its coke products overseas, while some of its steel trade is implemented through holding funds, resulting in relatively stable economic benefits.

b. Business situation

In recent years, under the background of "dual carbon", the demand for clean energy has further increased, while the demand for traditional energy has slowed down. Therefore, the pressure faced by Company A in developing its traditional business is also relatively large. However, the company is also actively carrying out strategic transformation, such as extending to non-coal businesses such as ore, coke, steel, etc., and is also trying to make diversified development layouts, and has achieved initial results. Especially with the current economic environment slowing down, the demand for major commodity markets has further decreased, leading to a downward trend in profits for Company A over the years. On the one hand, the company is facing rising operating costs and a significant decline in profits under the background of carbon neutrality and decarbonization. It will be in a loss state during 2022 and 2023, while other profitable businesses are also in a low-level operation state. On the other hand, with the current global positive response to low-carbon emission targets, the traditional coal market has shown a downturn in development, causing difficulties for

companies related to coal products. This has increased the size of A Company's accounts receivable, which is prone to bad debt problems and poses certain difficulties and challenges for A Company's business development. The operating conditions of Company A in the past three years and the revenue of each variety can be reflected in the following table.

Table 4.1: Major Financial Data of Company A in the Past Three Years

Unit: 100,000 yuan

Project	2021	2022	2023
Total assets	39808	57433	76309
Total liabilities	28721	35974	53813
Operating income	130600	166500	209200
Net profit	212	-1628	-963

Data source: Internal operating data of Company A

Table 4.2: Cumulative Performance of Company A's Major Businesses in the Last Three Years

Unit: 100,000 tons, 100,000 yuan

No.	Variety	Number	Income	Cost	Gross Profit
1	Coal	337	303636. 46	301383. 36	2253. 09
2	Coking coal	35.31	51696. 59	51668. 26	28. 33
3	Steels	18.4	82661.99	82160. 78	501.21
4	Iron ore	100.5	51045. 82	52892. 66	-1846. 84
Total		491.21	489040. 86	488105. 06	935. 79

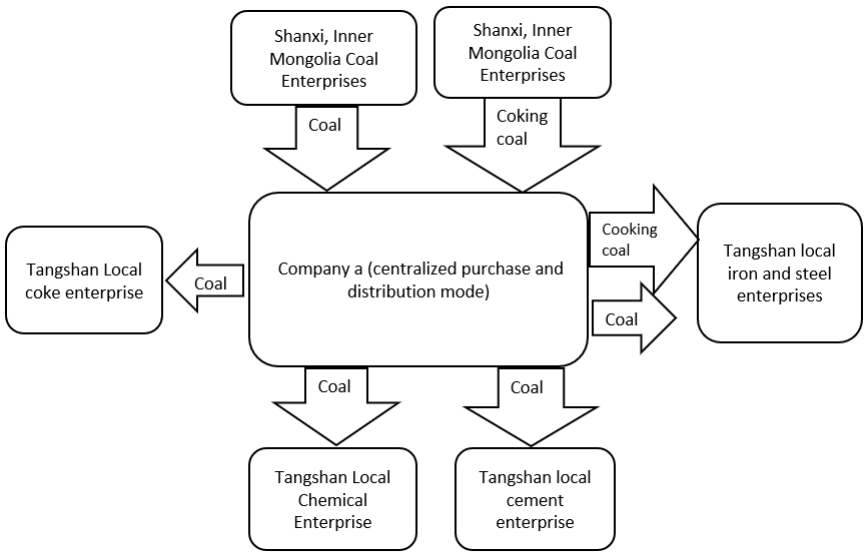
Data source: Internal operating data of Company A

4.2 Analysis of the current business model of Company A

4.2.1 Centralized procurement and distribution model

Currently, Company A is implementing traditional coal business operations through a centralized procurement and distribution model, which involves spot trading as the primary form of transaction. The company mainly focuses on coal and coke products, and conducts centralized procurement of resources from the main coal producing areas in Shanxi and Inner Mongolia, while also selling to steel and other coal energy demand enterprises around the company. Through this centralized procurement and distribution model, Company A can gain scale advantages in procurement and enhance its bargaining power as a supplier. At the same time, it can bring high economic benefits through distribution.

Figure 4.1 Centralized procurement and distribution model of Company A

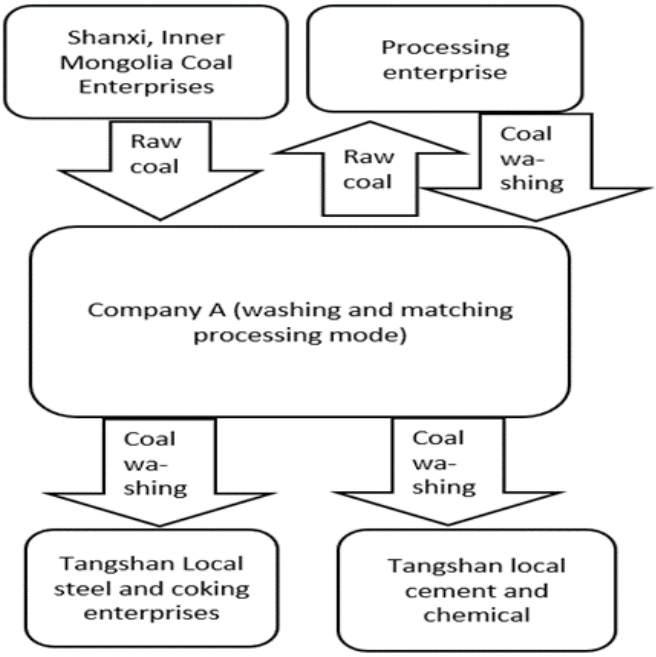


Source：the author（2024）

4.2.2 Processing mode of coal washing and blending

The processing mode of washing and blending coal is also one of the main business models for the daily operations of Company A. Company A cooperates with other enterprises to jointly build coal washing and processing, and raw coal for finished products is washed. At the same time, production is organized according to market demand, with Company A responsible for sales. By increasing the added value of procurement resources and value-added services (providing information for buyers of washed coal, processing and recycling of coal washing waste residue), profit gains can be increased.

Figure 4.2 Washing and processing mode of Company A

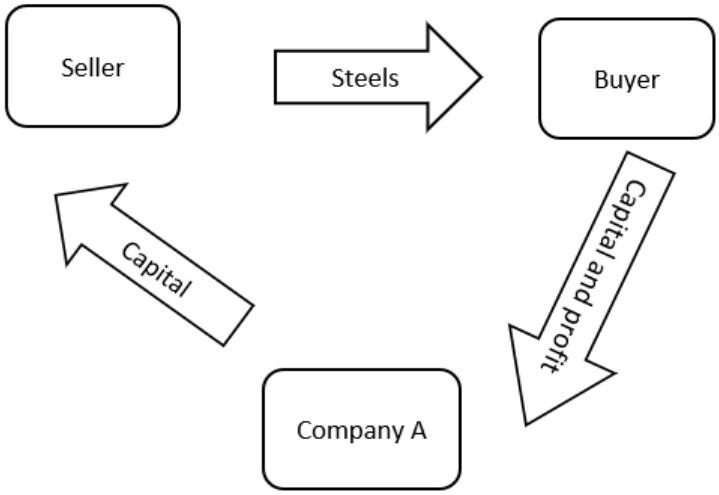


Source：the author（2024）

4.2.3 Financing pallet model

Company A joined the trade chain in the form of supply chain advances to obtain fixed income, with an annual rate of return of about 10%-15%. For example, coal or coke products are the main products, without price risk. In the financing tray mode of Company A, the seller is mainly the coal or coke production enterprise to borrow funds from Company A, while the buyer is mainly the demander of coal or coke, such as large-scale thermal power plants, steel plants and large-scale chemical enterprises with state-owned background. Business with these enterprises not only has relatively low risk, but also can bring rich returns to Company A.

Figure 4.3 Financing Pallet Model of Company A

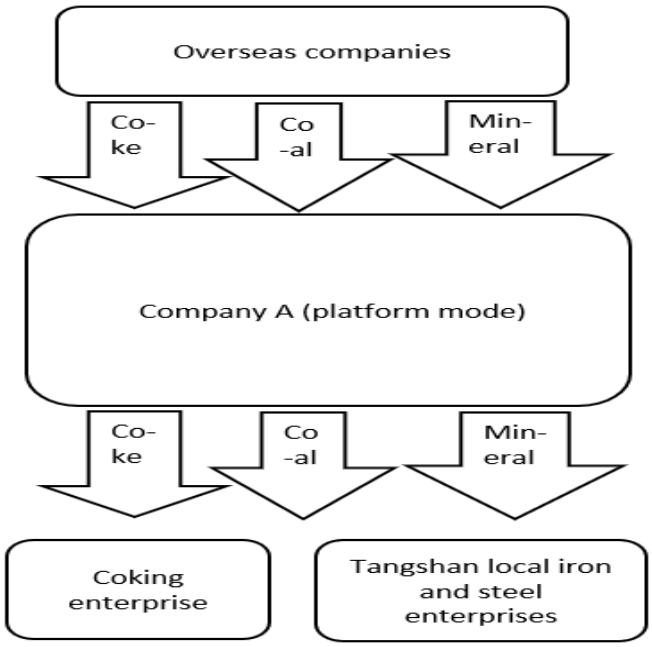


Source：the author（2024）

4.2.4 Trade platform model

Cooperate with domestic and overseas companies to carry out import and export trade, import ore and coal, and export coke. The business is dominated by overseas companies, and Company A only acts as a platform company, so there is no way for it to directly participate in the business transactions of other enterprises on the entire trading platform, resulting in Company A being more of an information consultant for the trading platform, thus reflecting the value of the enterprise.

Figure 4.4 Business and Trade Platform Mode of Company A



Source：the author（2024）

4.3 Problems in current business model

4.3.1 Increased development pressure under the background of "dual carbon" target

The problems faced by the application of A Company's business model at present show that the innovation is not enough, especially in the context of the dual carbon goal, and the daily business development pressure is relatively large. At present, the country is vigorously promoting the implementation of clean energy, which has brought great difficulties and challenges to traditional businesses. In recent years, the requirements of the state and government departments for carbon emissions and energy conservation and emission reduction have been increasing, especially the strategic measures implemented by the state to reduce the emission of pollutants and the new ecological policies to reduce carbon emissions have become increasingly strict in implementation. This has led to some high-demand coal energy enterprises being affected in production and even having to stop work, which has brought great difficulties and challenges to the procurement and sales of coal products for Company A. Under the low-carbon emission and high-pressure state, the market demand for traditional coal and its derivatives is continuously decreasing, which poses certain difficulties for the business development of Company A, especially for the current business model. This requires Company A to optimize and transform its business model under the background of the "dual carbon" goal, so as to better promote the development of the enterprise.

4.3.2 Single business model and poor profitability

Currently, under the background of the "dual carbon" goal, the implementation of A Company's business model presents a problem of relatively single business, resulting in poor profitability and low ability to fight risks. Although Company A currently has four different business models to conduct business, the products faced by these business models are traditional products, especially under the high pressure of carbon emissions, which can easily lead to the inapplicability of some traditional business models. Moreover, with the continuous upgrading of Internet information technology, the trading environment in various markets is becoming increasingly transparent, and the traditional business model of Company A will lose its own advantages and living space. Therefore, this is also the main reason for the declining profits of Company A year by year and the unsatisfactory business development under the background of the "dual carbon" goal. Over the years, due to the increased requirements for carbon emissions from government departments, the coal market has experienced oversupply, leading to a downward trend in coal prices. Meanwhile, the

gradual increase in coal imports in recent years has also caused some pressure on the local coal market. In particular, the imported coal is of good quality and low price, which can easily lead to a significant impact on the company's business. Moreover, Company A is currently implementing more based on the traditional coal industry, without actively exploring new business models, so it cannot cope with the adverse effects brought by the "dual carbon" goal in a short time. Moreover, due to the impact of national environmental protection policies, companies will allocate more funds to the treatment of pollutants, which reduces corporate profits and affects the normal operation of businesses and enterprises.

4.3.3 Lack of core technology and passive business development

The current application of A Company's business model also shows a problem of not having a strong grasp of core technologies, so there is insufficient restriction on partners in daily business development. Especially in the implementation of the coal washing and blending business of Company A. Company A is more responsible for providing raw coal for washing and coal blending, as well as providing demand standards, while the partner provides the technology for washing and blending coal. However, the core technology and processes are controlled by the collaborators, so due to limitations in technology and equipment, most of the costs are controlled by the collaborators, which inevitably increases the processing costs of Company A. Company A can only ensure that its corporate profits meet the target by increasing sales prices, which also has a negative impact on the sales of coal products of Company A. At the same time, due to the energy conservation and emission reduction requirements of the environmental protection department, it is difficult to achieve full-load production by reducing the processing volume in order to reduce carbon emissions. This also results in insufficient product output for Company A, reducing its market share and thus affecting its economic efficiency.

4.3.4 Large accounts receivable and high trade risks

Currently, the business model implemented by Company A under the background of the "dual carbon" goal is still facing increasing trade risks. Firstly, in recent years, the scale of accounts receivable of Company A has been continuously increasing, which has brought certain difficulties and challenges to the company's working capital. Moreover, the company's trade risks are constantly increasing, and related enterprises such as steel in the supply chain also have strategic business adjustments to reduce overcapacity, resulting in unsatisfactory operating efficiency for partners and even bankruptcy. This has led to a significant risk in the management of accounts receivable for Company A. Although in the actual business development, Company A strengthened the management of accounts

receivable, and some bad debts were won in legal proceedings, it still faced many problems in actual implementation. Many accounts receivable could not be fully recovered and could not be paid back within the specified time. This has brought many difficulties to the management of enterprise cash flow. Secondly, in daily business transactions, a lot of funds are used to upgrade the product procurement in the upstream of the supply chain, which results in the occupation of a lot of working capital of the enterprise and makes it difficult to control the downstream partners, thus bringing many operational risks. Thirdly, with the implementation of carbon emission targets and government environmental protection regulations, Company A will invest a lot of costs to reduce carbon emissions, which will inevitably bring higher costs to the enterprise. It affects the normal operation and development benefits of the enterprise.

5. Analysis of the external environment of A company's operation

5.1 PESTEL analysis

5.1.1 Political environment

Carbon neutrality requires the gradual realization of zero carbon emissions in the energy system, which is actually the pursuit of green and low-carbon development goals in the energy transformation and the promotion of the reconstruction of the domestic energy system. The 20th National Congress of the Communist Party of China also proposed to gradually realize clean and low-carbon utilization of energy, further clarifying the target direction of domestic energy transformation. In particular, General Secretary Xi Jinping promised to achieve carbon peak and carbon neutrality in 2020, and then the General Secretary has repeatedly emphasized the realization of the "dual carbon" goal on some important occasions and conferences, and clarified the measures and requirements for promoting the "dual carbon" work in China. The State Council has also formulated a plan to make overall arrangements and systematic planning for the promotion of carbon peak by local governments across the country, and proposed specific targets, namely that China's energy consumption per unit of GDP will decrease by at least 13.5% in 2025 compared to 2020, and the total carbon dioxide emissions will decrease by at least 18% year on year; China aims to achieve a 20% share of non-fossil energy in its energy consumption by 2025; By 2030, the energy consumption per unit of GDP in China will have decreased by at least 65% compared to 2005, with 25% of energy consumption coming from non-fossil energy sources. The installed capacity of solar and wind energy in China will exceed 1.2 billion kilowatts; In 2060, 80% of energy consumption will come from non-fossil energy sources. The major conferences and documents on energy strategy in recent years are shown in the table below.

Table 5.1 Major Conferences and Documents' Representation of Energy Strategy

No.	Time	Meetings/documents	Formulation
1	2007	China's national plan for coping with climate change	For the first time, the strategic objectives and policy measures to deal with climate change were systematically put forward.
2	2012	Report of the 18th CPC National Congress	Promotion of the revolution in energy production and consumption, control the total amount of energy consumption, strengthen energy conservation and consumption reduction, support the development of energy-saving and low-carbon industries and new and renewable energy, and ensure national energy security.
3	2014	The sixth meeting of the central leading group for finance and Economics	Promotion of the revolution of energy consumption and curb irrational energy consumption: promote the revolution of energy supply and establish a diversified supply system; Promote energy technology revolution and drive industrial upgrading; Promote the revolution of energy system and open up the fast lane of energy development; Strengthen international cooperation in energy in an all-round way to achieve energy security under open conditions.
4	2014	Strategic action plan for energy development (2014-2020)	Adhere to the strategic policy of "saving, cleaning and safety", and accelerate the construction of a clean, efficient, safe and sustainable modern energy system.
5	2016	Energy production and consumption revolution strategy (2016-2030)	Adhere to the strategic orientation of safety first, saving first, green and low-carbon, and active innovation, comprehensively realize the strategic transformation of China's energy and build a modern energy system.
6	2016	Opinions of the Central Committee of the Communist Party of China and the	The strategic goal of accelerating green and low-carbon development is put forward, and the relevant policy direction is set.

		State Council on accelerating the construction of a green, low-carbon and circular economic development system	
7	2021	The report of the 19th CPC National Congress	Promotion of the revolution in energy production and consumption, and build a clean, low-carbon, safe and efficient energy system.
8	2020	The Fifth Plenary Session of the 19th CPC Central Committee	Promotion of clean, low-carbon, efficient and safe use of energy
9	2021	The ninth meeting of the central financial and Economic Commission	Bring carbon peaking and carbon neutralization into the overall layout of ecological civilization construction
10	2021	The "14th five-year plan" and the outline of long-term objectives for 2035	China has defined the strategic goals of reaching a carbon peak by 2030 and achieving carbon neutrality by 2060.
11	2021	Carbon peak and carbon neutral action plan (2021-2025)	The action steps and policy measures for carbon peaking and carbon neutralization were refined.
12	2021	Carbon peak and carbon neutral action plan (2021-2025)	Promotion of carbon emission reduction through the carbon trading market mechanism.
13	2024	Implementation plan for carbon peak and carbon neutralization (2024)	The specific implementation steps and policy measures of carbon peaking and carbon neutralization were further refined.

Source：the author（2024）

5.1.2 Economic environment

a. Economic growth slows down

The 20th National Congress of the Communist Party of China, based on the reality of economic development, pointed out that China's economy has shifted from a stage of high-speed growth to a stage of high-quality development, which has three typical characteristics. The first is the transition of growth rate, from high-speed growth to medium-high growth. From 1979 to 2012, China's economy grew at an average annual rate of 9.9%; In recent years, it has remained at around 5%. If we still try to maintain the previous high-speed growth and do not pay attention to quality and efficiency, either the speed will not increase or it will increase in the short term but then fall back, causing significant ups and downs. When we calculate the total account after the period, the actual growth rate is actually low. Second, structural transformation, entering a stage of high-quality development, no longer relying mainly on the quantity of factor inputs to drive growth as in the past. If in the past it was mainly about "spreading out", in the future it will mainly be about "taking the next step", shifting from mainly low-end industries to high-end industries. Third, the transformation of driving forces, from the dominance of traditional driving forces to the rise of new driving forces, relies more on the improvement of labor quality, technological progress, and total factor productivity.

b. Coal consumption is increasing year by year

Coal is the most important energy source consumed in China. According to the data released by the National Bureau of Statistics, the proportion of coal consumption in the total energy consumption has exceeded 50% in the past five years. And the total coal consumption is increasing year by year. At present, coal is still the "ballast stone" of China's energy supply.

Table 5.2 Coal Consumption in the Last Five Years

	2019	**2020**	**2021**	**2022**	**2023**
Total coal consumption (100 million tons)	40.3	39.7	39.5	39.1	39.2
Proportion of coal consumption in total energy consumption	59.1%	57.5%	56.9%	56.1%	56.3%

Source：data from the historical annual report of Company A

5.1.3 Social and cultural environment

With the development of society and the enhancement of people's awareness of environmental protection, the call for environmental protection is increasingly rising, and the requirements for coal quality are also increasing. Building an ecological civilization has become the main theme of development. The State Council clearly proposed in the 2023 Government Work Report that "we should use non-renewable resources scientifically and rationally, focus on encouraging energy-saving production methods, encourage the development of sustainable economic types, advocate the concept of conservation-oriented living, make it a lifestyle that the whole society pursues together, and accelerate the pace of building a conservation-oriented society.". As people's requirements for the ecological environment are getting higher and higher, coal enterprises will pollute the surrounding water sources and destroy the land resources during the coal production process. This has put coal resource exploitation under great pressure. In addition, coal is a non-renewable resource, and even though China has abundant coal reserves, it will still face the situation of resource depletion in the future. Based on this situation, for Company A, which mainly engages in coal mining and sales, improving its production capacity, improving product production technology, and promoting the coal processing industry to become more green and low-carbon may make the living space of coal enterprises broader. Therefore, it is necessary for Company A to explore new development paths, broaden business ideas, focus on clean mining, improve the efficiency of coal recycling and utilization, and diversify its development to achieve green and sustainable development.

5.1.4 Technical environment

The technological innovation system in the coal industry has been continuously improved and perfected, and the development capacity based on technological innovation has been greatly enhanced. Green mining technologies such as backfill mining, water-preserved mining, coal and gas co-mining, and pillar-free mining have been widely applied, and the utilization rate of coal resources has been greatly improved. In 2023, the raw coal washing rate will reach 74 1%, an increase of 8.2 percentage points compared to 2015. The comprehensive utilization rate of mine water, the comprehensive utilization and disposal rate of coal gangue, and the utilization rate of underground gas extraction reached 78.7%, 72.2%, and 44.8% respectively .

In the process of large-scale mechanized coal mining, the automation rate of large-scale coal mining enterprises in China has exceeded 90%, and that of medium-sized coal mining enterprises is basically above 60%. With the increasing maturity of fully mechanized mining technology and roadway tunnelling technology, the efficiency of mines has been further improved; After years of research and development, the heavy coal separation technology

has made positive progress and been widely promoted and applied, updating the traditional coal washing process. At the same time, flotation technology is becoming more and more advanced, effectively improving the recovery rate of clean coal and flotation effect. At present, the self-developed coal washing technology and equipment in China can meet the construction needs of large-scale coal processing enterprises.

5.1.5 Environment

Since the 20th CPC National Congress, the Party Central Committee has put forward new development concepts and required local governments to implement green concepts in economic and social development. It has issued a series of regulations, policies and implementation opinions on ecological civilization construction, and China's ecological environment has been improved to some extent. Since the 14th Five-Year Plan, China's energy intensity has decreased by 11.35%. However, due to the high proportion of the secondary industry in the current domestic industrial structure, the existing energy system has low energy efficiency and high dependence on coal energy. Although China's energy intensity has declined, it is still 1.5 times the world average. Coal emissions account for 71.7% of energy system emissions, which is clearly not in line with the characteristics of high-quality economic development. The industrial structure of B province, where Company A is located, relies heavily on energy, and the task of controlling carbon emissions is very heavy. During the 14th Five-Year Plan period, the state requires that the carbon emission intensity of Province B should be reduced by at least 17% compared to the 13th Five-Year Plan period, but Province B did not complete the established carbon emission task indicators during the period from 2021 to 2023. According to statistics, the energy consumption per 10,000 yuan of GDP in Province B in 2020 reached 2.02 tons of standard coal, while the domestic average level was 0.49 tons, indicating that the energy consumption level in Province B significantly exceeded the average level and was the highest in the country.

Table 5.3 Main objectives of the three-year action plan for dual control of energy consumption in province B

Target year	Energy consumption per unit GDP	Energy consumption per unit of industrial added value	Cumulative energy savings
2024	About 3.3% lower than that in 2023	Decreased by about 3.9%	About 1million tons of standard coal
2025	About 6.5% lower than that in 2024	Decreased by about 7.7%	About 5million tons of standard coal
2026	About 9.6% lower than	Decreased by about 11.3%	About 9million tons of

	that in 2025		standard coal

Source: data from the energy department of province B

5.1.6 Legal environment

Currently, multiple domestic government departments have jurisdiction over the coal chemical industry. In addition to the National Development and Reform Commission, the State Administration of Work Safety, and the National Energy Administration, the Ministry of Emergency Management, the Ministry of Natural Resources, and the Ministry of Ecology and Environment also have responsibilities for regulating the development of the coal chemical industry. Meanwhile, the coal chemical industry has also established self-regulatory organizations such as the coking industry association to strengthen self-management. At the same time, domestic regulations such as the Environmental Protection Law, the Law on the Prevention and Control of Atmospheric Pollution, and the Clean Production Promotion Law have also put forward specific requirements for the production of the coal chemical industry. These coal chemical enterprises are required to strictly implement relevant legal provisions in their operations. In addition, the Ministry of Industry and Information Technology, the Ministry of Emergency Management and other departments have also issued and formulated many administrative regulations such as the Regulations on Safety Production License and the Regulations on the Safety Management of Hazardous Chemicals in order to strengthen the supervision and management of the coal chemical industry. It can be seen that a legal system for the supervision and management of the coal chemical industry has been established in China, with multiple departments participating. The production and operation of coal chemical enterprises are subject to strong supervision and constraints by laws and regulations.

5.2 Analysis of the Porter's Five Forces Model

5.2.1 Threat of potential entrants

Coal chemical industry is a resource, technology and capital-intensive industry, and the investment in large-scale modern coal chemical projects often reaches tens of billions of yuan. High-tech and modern coal chemical industry uses advanced technology to produce clean energy that replaces traditional petrochemical products, and has high requirements for technical equipment, production technology, and skilled technical workers. High policy barriers. In recent years, with the in-depth implementation of the Party Central Committee's efforts to fight pollution prevention and control, all regions and departments are required to deeply adjust the industrial structure, take measures to strengthen the supervision and management of high-energy-consuming and high-emission projects, implement green

concepts into the optimization and adjustment of industrial structure, provide policy and institutional support for the development of green industries, and provide policy and institutional support for the development of green industries. In the context of increasingly severe resource and environmental constraints and the "dual carbon" background, traditional energy enterprises with high energy consumption, high water consumption, and low utilization rate of industrial solid waste have become key control targets in various regions. All regions are very strict in project approval and environmental impact assessment, and the threshold for access is getting higher and higher. Therefore, the threat of potential entrants to Company A is not significant.

5.2.2 Threat of Substitutes

On the one hand, current coal chemical products can replace petrochemical products to a certain extent in the market, which determines the competition between the two in the energy market. Research shows that if the crude oil price remains at $45-65 per barrel, coal chemical products can maintain a break-even point. However, once the crude oil price rises to $70-85 per barrel, coal chemical products will have a significant price advantage in the energy market. The current international oil price is rising continuously, and has soared to 90 US dollars per barrel. Based on the current crude oil price, there is little threat of substitutes. However, if the international oil price remains low, petrochemical industry will replace coal chemical industry, and coal chemical enterprises will be unprofitable. On the other hand, the long-term development direction of the coal chemical industry is mainly low-carbon, high-efficiency and clean, which is consistent with the development direction of new energy. With the rise of the new energy industry, it will definitely pose a threat to traditional energy companies in the future.

5.2.3 Supplier's bargaining power

The main raw material for the coal chemical industry of Company A is coal. In recent years, due to the prominent contradiction between coal supply and demand, coal was once in great shortage, causing the price of coal to rise to 2587.5 yuan/ton. However, Company A is located in an area rich in coal resources. While extending the coal chemical industry chain, the company is also actively making arrangements at the source to achieve cost optimization. With the gradual increase in production capacity in the future, the company's coal production capacity is expected to reach 8.1 million tons, with production close to capacity, basically meeting self-sufficiency and having the ability to integrate backward. In addition, Company A currently has stable cooperative relationships with multiple domestic coal suppliers, and can determine whether to use long-term agreement prices in procurement based on market coal

supply and demand conditions. Therefore, the supplier's bargaining power is relatively weak.

5.2.4 Buyer's bargaining power

The downstream of coal chemical industry involves multiple industry fields, and coal chemical industry can provide raw materials for the production of medicine, heavy and light industry and other industry fields. At this time, the supply and demand situation of the coal chemical product market determines the bargaining power of the buyer in the transaction. In recent years, the production capacity of olefins has increased rapidly, and the supply of ethylene has exceeded demand. The supply and demand of propylene are relatively balanced, and the bargaining power of buyers is strong. The production capacity of polyolefin is insufficient, especially the high dependence on imports of high-end products, and the bargaining power of buyers is weak. Coking products are completely determined by upstream coal and downstream steel companies, and companies have little bargaining power.

5.2.5 Analysis of industry competitors

The coal chemical industry has evolved from the coal industry, and currently, large and medium-sized state-owned enterprises in China are the main suppliers of coal. At present, as the domestic government gradually increases production restrictions on coal-fired power generation, these coal enterprises should gradually develop coal chemical business to achieve better development. However, domestic private enterprises can only obtain very limited coal resources, and most of them rely on different channels to purchase from outside. This results in weaker risk resistance ability in the coal market and more serious product homogeneity problems. Therefore, Company A needs to pay attention to product differentiation and diversification, and realize business model strategic transformation as soon as possible to occupy a favorable position in the fierce competitive market.

5.3 SWOT analysis of Company A

Through the SWOT analysis of Company A, we can better evaluate the comprehensive development environment of the enterprise. We can also conduct a holistic analysis from the aspects of opportunities, threats, strengths, and weaknesses, which can help Company A recognize the current situation and find a powerful business model transformation strategy, providing strong guidance for the next stage of strategic development.

5.3.1 Strengths

a. Strong brand reputation

Company A has a long history of operating in the coal industry and has a high reputation in the national coal industry. Its business also involves traditional coal, equipment manufacturing, and coal derivatives. Company A's business development is based on traditional coal as a foundation for diversified development, and has a strong brand awareness in the industry. Moreover, the company has a high credit rating and has won numerous praises in the industry, laying an effective foundation for the business development of the enterprise.

b. Good development resources

Currently, Company A has good development resources in its business development. First, in the face of the increasing carbon emission standards, Company A has also actively transformed its internal structure and is constantly moving towards the development direction of new energy business. Company A is also constantly innovating in the development of traditional businesses, which can better achieve diversified development of the enterprise. The enterprise faces relatively abundant resources and has obvious advantages in coal resource financing, which can provide a strong backing for the business development of Company A. Secondly, in the past two years, Company A has also been actively building two large coal storage bases, which will provide strong support for the future strategic transformation and development of the industry. Third, Company A has a relatively stable customer base. Especially in the business development over the years, Company A has accumulated a rich customer base, and has formed stable strategic partnerships both upstream and downstream in the supply chain, which can lay important prerequisites and foundations for the innovative development of the enterprise business model.

5.3.2 Weaknesses

a. Narrow product structure

Although Company A currently has more development resources, its main business products are relatively narrow. At present, most of the company's products are mainly direct sales of raw coal, which is highly substitutable. Moreover, Company A has few deep processing products of coal, especially the production of refined and high value-added products, which has caused major problems in the development of the company's business. Moreover, Company A has certain lag in the construction of clean coal projects and technological research and development, which is lower than the industry average. This leads to a relatively single main product line and inability to achieve expected goals under the dual carbon background. Meanwhile, Company A lacks other independent main businesses and new clean energy industries. Although Company A has been undergoing a business model

transformation over the years, the pace of the transformation has not been satisfactory, and it cannot meet the requirements for new coal resource products in the context of dual carbon.

b. The industrial structure is not reasonable

At present, Company A also has problems such as an unsatisfactory industrial structure in its business development. Company A mainly sells coal, which is also its main business, but it is very dependent on the economic development situation and the implementation of government policies. Especially in the context of dual carbon, government departments have strengthened their control over environmental protection and carbon emissions. Due to this macroeconomic impact, the traditional business of Company A has been greatly impacted. At the same time, the development of projects to increase the added value of coal is still in the exploratory stage. During the implementation of the clean energy strategy, the investment in human, material and financial resources is significantly lower than that of competitors, and the sense of crisis and urgency is low. This is also one of the main disadvantages faced by Company A.

c. The operation system model is difficult to adapt to market development

Currently, there are still some problems in the implementation of the operating system of Company A. Firstly, due to the aging of the company's development system and mechanisms, the internal management functions are bloated and there are overlapping responsibilities, making it difficult to adapt to the needs of the market economy. Secondly, in the operation of enterprises, there are relatively few supporting businesses, and there is a strong dependence on traditional key customers. Meanwhile, in terms of the business chain of raw coal washing, although it is relatively stable, the funds occupied are very high, which will inevitably affect the cash flow of the enterprise. Thirdly, the business model of Company A is also single, and the pace of diversified development is slow. Especially in the context of dual carbon, the implementation of diversified development to create new clean energy is one of the key points of enterprise transformation. However, at present, Company A still faces difficulties in diversifying its operations, which are still limited to traditional coal products. Although some businesses have been carried out in coke, steel, iron ore, mine equipment, etc., the scale is small, the stability and continuity are poor, and the development quality is not high enough.

5.3.3 Opportunities

a. The market prospect of new energy industry is huge

At present, the country's economic development has shifted from high-speed growth to high-quality development. During the 14th Five-Year Plan period, the state will continue to increase support for the development of green industries, and has proposed that carbon

emissions should strive to reach a peak by 2030 and achieve carbon neutrality by 2060. Therefore, in the future development, new energy will be the main opportunity faced by Company A. Moreover, the current market competition is not fierce. If Company A can seize this opportunity and actively promote the innovation and transformation of business models, it will gradually transition from traditional coal business to new energy products, which will also bring new opportunities for the business development of Company A.

b. The state supports the upgrading of production technology and equipment

In the implementation of policies to promote environmental protection and reduce carbon emissions, the country is also constantly promoting industrial upgrading and technological transformation among enterprises, and has invested a lot of resources, which can effectively promote the high-quality development of Company A and continue to promote industrial upgrading. The state provides financial subsidies to enterprises that actively respond to policies, so when Company A updates its outdated technology and production equipment, it can reduce the cost of purchasing equipment on its own with the strong subsidies from the state. Thus, it will continuously promote A company to better improve production efficiency and reduce operating costs, thereby promoting the effective development of the enterprise and driving the optimization of business models. At the same time, in this process, with the change and upgrading of technology, it can also drive the high-quality development of the output of coal products of Company A, and also better help Company A to transition from traditional business to clean energy.

At the same time, in the context of the implementation of the dual carbon goals, it can better promote Company A to strengthen its recognition of the mainstream of new energy and seize the main position. Thus, a new business development model complementary to traditional energy sources can be constructed. It can not only further consolidate the basic position of traditional coal, but also participate in the development of new energy projects. As a basic industry, coal has relatively strong self-protection capabilities. At the same time, through technological improvement and industrial upgrading, it can help companies revitalize existing assets, improve industrial collaboration efficiency, and maximize overall corporate profits.

c. Continuously improve innovation ability

Currently, under the background of the "dual carbon" goal, it can further promote the continuous improvement of A company's coal technology innovation ability. In particular, the national policy direction clearly indicates that the role of the state as a scientific and technological innovation organization should be brought into play, and the key direction of the innovative development of new green energy should also be clarified. In this process, Company A can seize the opportunity to actively cooperate with research universities and government departments, and continuously provide a foundation for the improvement of the

industrial system and the innovation of clean energy products for Company A, thus providing a foundation for the realization of green coal and low carbon emissions, and also further highlighting the ability to share technology and enhance the innovation ability of Company A.

5.3.4 Threats

a. The growth rate of coal product demand slows down

At present, Company A mainly focuses on coal products in its current business model. However, under the influence of the "dual carbon" goal, the demand for coal products in society will further decrease. In 2023, China's coal consumption increased by 4.6% compared with the previous year, while coal accounted for 56% of the energy consumption structure, down 0.8 percentage points year on year. These data reflect that the demand for new energy in China's economic development is constantly increasing, while the demand for traditional coal products will decrease, which will lead to a gradual decrease in the share of coal in the energy market, bringing certain difficulties and challenges to the business development of Company A.

b. The implementation of energy conservation, emission reduction and environmental protection policies is becoming increasingly strict

In the context of the dual carbon targets, the implementation of energy conservation, emission reduction, and environmental protection policies will continue to be strengthened, which puts higher demands on the coal production and transportation management of Company A. At the same time, the government departments have included energy conservation, emission reduction and environmental protection as key projects, and have introduced corresponding measures to eliminate some high-energy-consuming and high-emission enterprises. The difficulty of obtaining licenses for new businesses and projects will continue to increase, which will further increase the difficulty of developing coal resources for enterprise A. Meanwhile, in order to strictly control the emission of automobile exhaust and reduce air pollution, the China Railway Corporation has also formulated a three-year action plan for transportation, which aims to increase railway freight volume and reduce highway freight volume, which poses difficulties and challenges for the sales of coal derivative products.

c. Facing the dual pressure of cost and price competition

Under the background of the dual carbon targets, Company A will face the dual pressures of cost and price competition. Amidst the declining trend of the traditional coal market, Company A will face more brutal competition and cost pressures brought about by its industrial upgrading. It will also bear the cost increase of coal consumption total and intensity control, ecological environment management in mining areas, air pollution prevention and

control. Moreover, factors such as imported coal and the release of high-quality production capacity in the region have created a dual pressure of rigid increases in coal manufacturing costs and market price competition. At the same time, Company A is also facing policy threats. Especially in the face of environmental pressure, as a traditional energy company, A company will be accompanied by industrial adjustments and layout of national strategic policies, and there will be an increase in operating costs in order to reduce low-carbon emissions for downstream customers and enhance the competitiveness of its own products. At the same time, it will also face the threat of shrinking industry demand and vicious competition from competitors.

5.3.5 Comprehensive analysis

Through SWOT analysis, a more comprehensive understanding of the favourable and hindering factors related to the development of the enterprise can be obtained in the context of the dual carbon goals. By matching strengths, weaknesses, opportunities, and threats, effective evaluation strategies can be found for A Company to optimize its business model and implement strategic transformation. The evaluation results are shown below.

Table 5.4 Analysis of SWOT Elements in the Internal and External Environment of Company A

	Favorable factors	**Obstacles**
Internal environment	**S-Strengths**	**W-Weaknesses**
	1. Corporate brand reputation	1. Constraints of state-owned system and mechanism
	2. Strong support for transformation and reform	2. Single trade mode and poor anti risk ability
	3. Undertaking the business of two major projects	3. There are many problems left over from history and the operation cost is high
	4. Stable customer base	4. Lack of collaboration and support from peer companies
	5. Location advantage	5. Lack of professional talents
External environment	**O-Opportunities**	**T-Threat**
	1. Macroeconomic stability and improvement will drive the innovative development and reform of the industry.	1. Policy threats, environmental protection, finance, supply side reform, etc.
	2. New opportunities brought by regional economy to the industry	2. Competition in the same industry

	3. New technologies improve the efficiency of traditional industries and reduce costs.	3. Changes in the consumer market have increased costs

Source：the author（2024）

From the four key elements listed in the table above, Company A will encounter many factors that hinder its development in the future, but also has a certain number of favourable factors, forming an analysis matrix as shown in Table 3.4. Based on the current development situation and market trends of Company A, we should choose the SO strategy, but also consider the WO strategy as an alternative strategy. This means that Company A should boldly innovate, which is an important path to achieve its own growth. In the practice of innovation, it should also realize that corporate reform requires social responsibility, and through innovative practices, it should accurately position itself and form relative and comparative advantages. In the specific practice process, we should also grasp the crisis in time and resist risks in an effective way. In addition, we should also identify our own shortcomings and gaps, and make the best of our strengths and avoid our weaknesses.

Table 5.5 SWOT Analysis Matrix of Company A

	S Strengths	**W Weaknesses**
	1. Corporate brand reputation	1. Constraints of state-owned system and mechanism
	2. Strong support for transformation and reform	2. Single trade mode and poor anti risk ability
	3. Undertaking the business of two major projects	3. There are many problems left over from history, and the operation cost is high
	4. Stable customer base	4. Lack of collaboration and support from peer companies
	5. Location advantage	5. Lack of professional talents
O Opportunities	**SO Strategy (give full play to advantages and take advantage of opportunities)**	**WO Strategy (take advantage of opportunities and overcome disadvantages)**
1. Macroeconomic stability and improvement will drive the innovative development and reform of the industry.	1. With the help of the stable development of the macro environment, actively promote the transformation and development, and seek the support of enterprises	1. Seize the new opportunity of economic development and deepen the reform of system and mechanism

2. New opportunities brought by regional economy to the industry	2. Relying on the development of regional economy, stabilize the existing customer group	2. Take advantage of regional economic development, seek diversified development and improve the ability to resist risks
3. New technologies improve the efficiency of traditional industries and reduce costs.	3. Use new technologies to reduce operating costs and improve revenue	3. Strive for more support, solve the remaining problems and increase collaboration
		4. Strengthen team building and cultivate professional talents
T Threat	**ST Strategy (giving full play to advantages and avoiding risks)**	**WT Strategy (eliminating disadvantages and avoiding risks)**
1. Policy threats, environmental protection, finance, supply side reform, etc.	1. Make use of brand advantages, continue to maintain existing stable customers and consolidate market position	1. Avoid unfavorable factors in the industry, adjust the business direction and seek a stable business model
2. Competition in the same industry	2. Strict internal management to reduce operating costs	2. Strive for support from superior companies to solve problems left over by development and history.
3. Changes in the consumer market have increased costs	3. Actively develop e-commerce to deal with the impact of the same industry	3. Strengthen staff team construction

Source：the author（2024）

6. Analysis of the optimization of A company's business model in the context of dual carbon

6.1 Proposal of "mission, vision, strategic objectives" under the "dual carbon" goal

6.1.1 Mission

In the context of the "dual carbon" goal, the corporate mission of Company A needs to adapt to the requirements of national economic restructuring and enterprise energy transformation and upgrading, follow the development concept of "innovation, coordination, green, openness, and sharing", and also adhere to the goal of environmental protection and development to propose a mission, thus reflecting the essence of corporate survival.

6.1.2 Vision

The vision is the core belief and future development prospects of an enterprise. Under the background of the dual carbon goals, the vision of Company A should also follow the national goals of carbon peak and carbon neutrality. Especially in the process of promoting the benefits of safe development and developing new energy, we should also continuously improve the synergistic effects of economic, social, and ecological benefits, and strive to reduce carbon emissions from both the enterprise itself and society

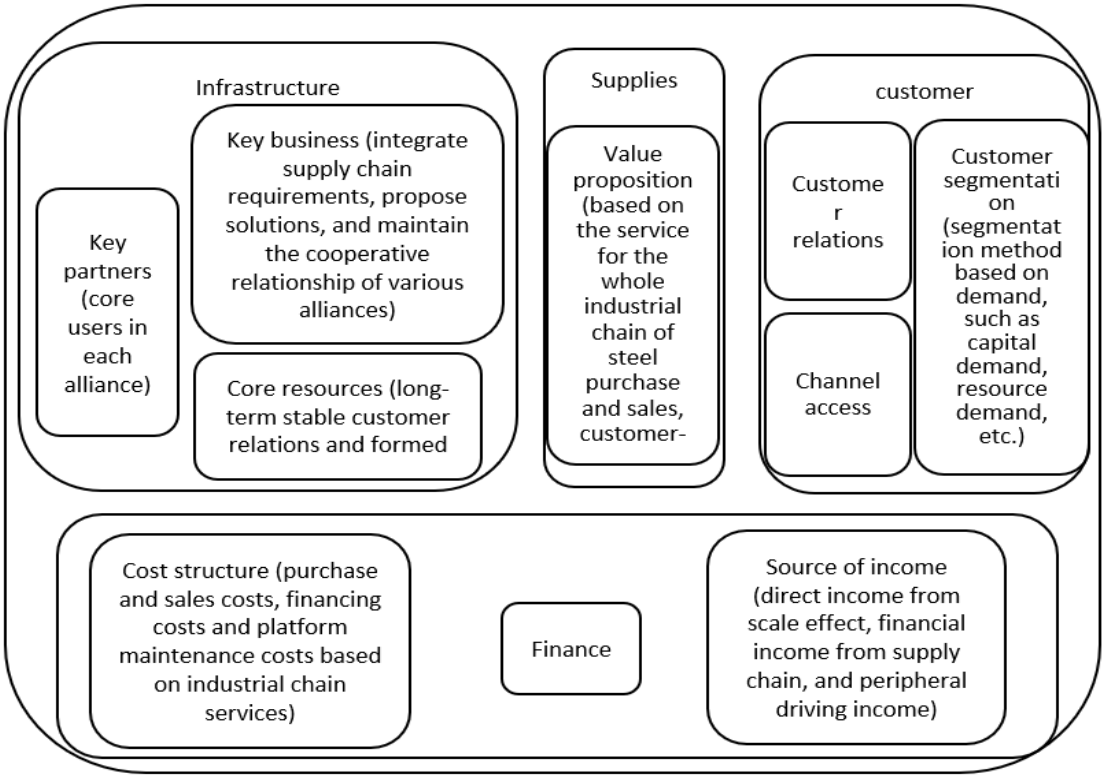
6.1.3 Strategic objectives

In the formulation of strategic objectives, Company A should promote the high-quality, green and diversified development of the coal industry. In the development of traditional coal industry, the concept of reducing carbon emissions should also be highlighted to achieve the coordinated development of the industry and strive to achieve the carbon emission targets proposed by the country under the background of dual carbon.

6.2 Optimized design of business model

At present, A company is facing relatively high pressure on carbon emissions and environmental protection, and the situation is quite severe. In this process, it is necessary to optimize and adjust traditional business models to meet the requirements of future industrial development. Moreover, it is also necessary to optimize from the aspects of product output, customers, own resources, infrastructure, and finance. This is also the main direction for the transformation and optimization of new business models.

Figure 6.1: The new business model canvas of Company A

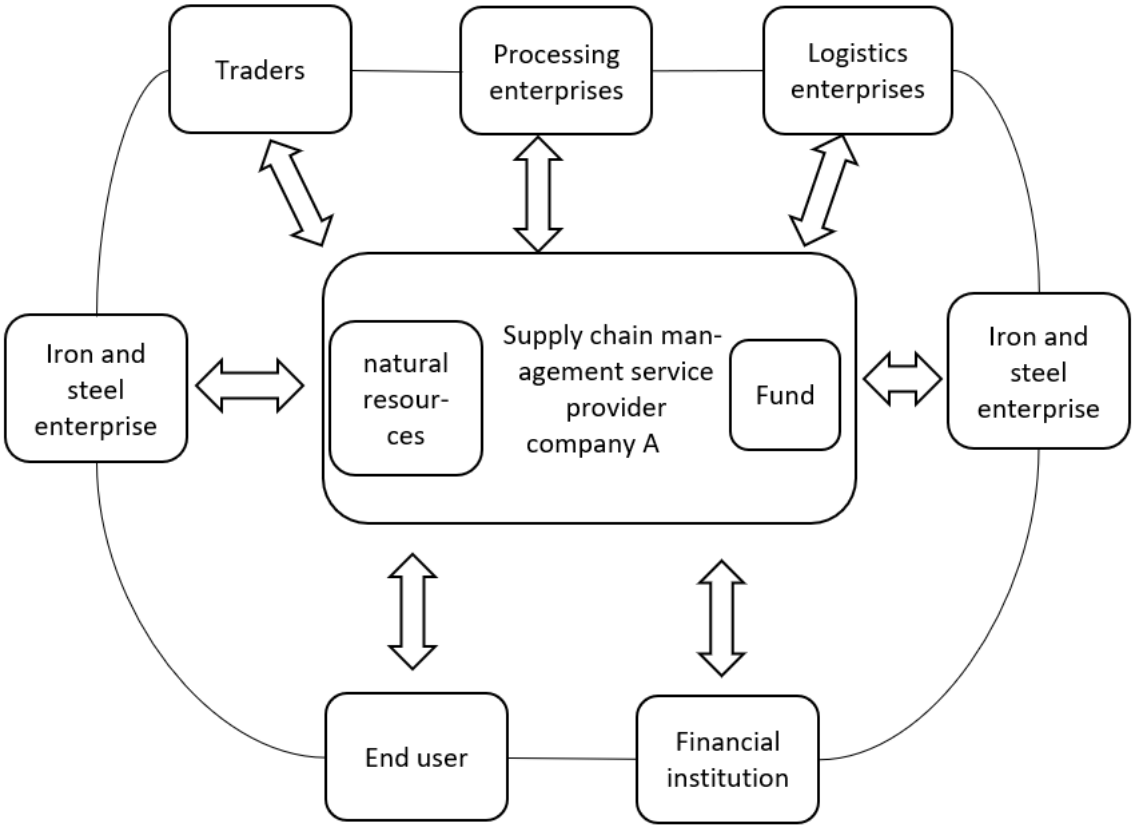


Source: author (2024)

6.2.1 Overview of new business models

At present, Company A should position itself as a supply chain management service provider in the optimization of its new business model. In the context of the "dual carbon" goal, we strive to optimize our business development structure, actively develop green new energy, and at the same time, we also take steel enterprises as the main direction of development, meet the needs of various customers upstream and downstream in the supply chain, and form strategic alliances on the supply chain with resources and capital as the link, so that the industrial development of Company A can better adapt to the new pattern of low-carbon social development.

Figure 6.2 Overview of the new business model of Company A



Source：author (2024)

6.2.2 Forming a value model that serves the entire supply and marketing industry chain of steel enterprises

In the context of the "dual carbon" goal, A company's new business model needs to form a value chain model that serves the entire supply and marketing industry chain of steel companies. This can highly integrate steel company customers with A company itself, forming a strategic partnership to provide comprehensive product resource services. At the same time, it is also necessary to derive value-added services such as providing customers with peripheral logistics distribution and processing, and to focus on multiple business models and systems such as supply, marketing, transportation, and financing for steel companies and their surrounding industry customers, breaking away from traditional business development relying on information asymmetry. Through optimized business models, the Internet plus model can also address the issue of traditional business losses under the impact of the Internet model. Moreover, Company A should also strengthen its partnership with steel enterprise customers, integrate resources, and actively transform traditional coal products with high energy consumption to clean energy products, thereby reducing carbon emissions from steel enterprises. At the same time, steel enterprise customers should also be actively integrated into the supply chain of Company A, and

financing services and other related online low-carbon businesses can also be provided, so that the industrial chain can develop in a mutually integrated manner, which can reduce environmental carbon emissions. Moreover, from the perspective of the industrial chain, the procurement, sales, processing, and distribution services implemented under the new business model can achieve transformation and upgrading. In particular, A company can serve as a resource platform to form a core driving model based on steel enterprises, thereby meeting the individual needs of customers. Providing customers with new clean energy that can meet the requirements of government departments in terms of carbon emissions in the areas of centralized procurement, purchase and sales, transportation, and storage, thereby enhancing overall competitiveness and reducing overall carbon emissions.

6.2.3 Forming a strategic alliance to achieve an ecological sharing operation model

For Company A, it is difficult to achieve real-time supply of resources and funds in the supply chain by relying on its own strength. Therefore, in this process, it is necessary to form strategic alliances upstream and downstream in the supply chain to achieve an ecological sharing operation model, thereby achieving a good situation of platform aggregation and multi-point win-win. This transformed business model should also be implemented in the dimension of reducing carbon emissions, which can be implemented in three aspects. First, Company A should form a strategic alliance with coal raw material suppliers and steel companies to ensure resource supply and sales, thereby achieving strong stability. Secondly, we should strengthen the integration of new clean products, and achieve the standard of carbon emissions in energy consumption when providing clean energy products for the downstream of the supply chain. At the same time, it can also achieve a good consumer alliance. Third, strengthen the financial alliance. Company A should also strengthen its integration with banking and financial institutions to ensure sufficient liquidity in daily business development, thereby forming a platform with a value chain that provides good corporate services and financial management for various enterprises in the industry and supply chain, creating a low-carbon shared ecosystem. so as to create a strategic partnership and leverage the advantages of the community to improve the efficiency of enterprises in the supply chain

6.2.4 Forming a multi-channel profit model combining direct and indirect benefits

Under the background of "dual carbon", Company A should actively turn to green energy for transformation, which can also break the poor profitability of traditional business models. At

the same time, we should also take the needs of customers as the goal of enterprise development, in order to optimize service capabilities and quality, so as to gain customer recognition and bring more economic profits to Company A.

a. Benefits from scale effect

In cooperation with resource-based coal and steel enterprises, we can form a scale effect through centralized procurement, and also form a dealer industry alliance with other coal enterprises in the industry to gain more bargaining power, thereby obtaining more desirable monopoly resources, while also reducing costs and realizing economies of scale benefits.

b. Supply chain finance income

After the transformation of its business model, Company A can rely on the real economy and obtain lower-cost financing through financial means. At the same time, it can also better reduce financial costs and obtain considerable economic benefits. First, Company A can leverage its domestic and overseas business and channel advantages to target the current differences in financing costs between domestic and overseas, and rely on its physical business and accounts receivable to secure loans. At the same time, it is also possible to obtain lower-cost funds through financial means such as long-term letters of credit, thereby meeting the low-cost financing needs of enterprises. Secondly, leverage the good reputation of the enterprise to obtain more credit loans and achieve higher profitability. Thirdly, through the Internet platform, it can provide financial services for more small and medium-sized enterprises, which is also an important direction for enterprises to achieve low-carbon emissions and business transformation in the future, and can also drive the development of emerging industries to boost the efficiency of enterprises.

c. The driving benefits of the surrounding industries

Company A relies on the coal industry as its core resource and expands into surrounding industries to meet customers' demand for related funds. First, while actively meeting customer demand for resources, Company A should also provide more logistics needs for customers, and also need to strengthen resource integration and use scale effects to reduce marginal costs. Secondly, the service charges of enterprises can be continuously improved through the influence of e-commerce service platforms. Thirdly, we should give full play to the functions of the two newly-built reserve bases of the company, realize the benefits in warehousing and processing, and thus improve the economic efficiency of the enterprise.

6.3 Implementation path of strategic transformation of Company A under the "dual carbon" goal

6.3.1 Development of Renewable Energy

Currently, A company is also making strategic transformation towards clean energy in its business model innovation, and building renewable energy. Especially in the context of the "dual carbon" goal, wind and light and other renewable energy sources are the main directions for future development. So for A company, which has traditionally focused on coal, it should try to enter these non-petrochemical energy industries and occupy new energy responsibilities. Moreover, the substitution and substitution frequency between coal and renewable energy are very strong. By trying to build renewable energy forms, it can provide new ideas for the innovative development of the company's business model. Moreover, in the construction of renewable energy, it can also meet the policy requirements of national energy security and sustainable economic development. Currently, Company A has certain modern advantages in the construction of renewable energy, which will become an important prerequisite for the transformation and development of its business model. In the context of the "dual carbon" goal, Company A should also use traditional coal resources to better create some clean energy and wash open coal products, so as to enter the main position of new energy and play its core advantages. For example, in promoting coal power generation, we should also actively integrate solar and wind power generation, build a multi-functional complementary clean energy system, and achieve a new high in the strategic development of enterprises.

6.3.2 Expand the enterprise ecological chain

At present, under the background of the dual carbon goals, Company A should also actively expand new ecological chains. Stable clean energy demand is an external requirement for the sustainable development of A company. Reducing carbon emissions is the core requirement for government departments to implement the dual carbon goals. Companies should adhere to the concept of "sustainable development" and achieve intelligent production through upgrading and improving coal processing technology. At the same time, it can also reduce carbon emissions from the Company And the upstream and downstream supply chain, reduce environmental pollution, and achieve green procurement and circulation. At the same time, the company should also enhance the value of its products in the processing of coal products, reduce environmental pollution, and improve energy efficiency. Only through this approach can we better achieve the healthy development of the environment, meet the requirements of reducing pre-carbon emissions, and allow enterprises to better move towards an environmentally friendly and low-carbon development in the construction of the ecological chain. At the same time, the Company Also needs to increase environmental protection in business development and increase the market share of clean energy. At the same time, it is also necessary to connect with local ecological environment associations to

minimize the ecological costs of enterprises in their development, reduce carbon emissions, and enhance environmental protection efforts.

6.3.3 Expanding the development of coal-fired power industry

At present, under the background of the dual carbon goals, Company A should also continue to expand and develop the coal power industry. Electricity and coal are the main energy industries and economic foundations of the country, and are one of the main ways to achieve carbon emissions. Therefore, in the process, Company A should continuously improve the energy utilization rate of its products in the coming period in accordance with the dual carbon targets proposed by government departments. Although most of China's electricity currently comes from thermal power generation, it will rely on traditional coal supply. Company A should also implement transformation in the new business model, such as entering the clean energy field such as wind power generation. This can not only reduce carbon emissions, but also promote the continuous optimization of business models. Moreover, before selling coal products, Company A should also prepare for dust removal, desulfurization, denitrification and other related processes in advance to avoid the emission of toxic substances into the atmosphere during coal combustion, reduce the pollution of smoke, sulfur dioxide, and nitrogen oxides in the atmosphere, and properly treat wastewater and waste residue, so that the products of the enterprise can minimize the damage to the environment.

6.3.4 Strengthen the coal washing and processing industry

Currently, A company is optimizing its business model and also strengthening the technological improvement of coal washing and processing, which is also one of the main measures to reduce carbon emissions. Company A should take the deep processing of raw coal washing as the starting point to strengthen the pre-control of carbon emissions. In the processing and production of coal products, many by-products are produced, such as large amounts of coal slime, coal gangue, and coal-associated minerals. If these substances are not effectively treated and recycled, they will cause significant pollution to the atmosphere and the ecological environment. Therefore, in this process, Company A should also continuously strengthen the deep processing of coal-fired power products and minimize the risks associated with diversified development. Moreover, it is necessary to strengthen the management of coal washing and processing industry, starting from the raw materials used in deep processing, to avoid excessive investment in pollution prevention and control equipment by downstream enterprises in the supply chain, so as to achieve high efficiency and energy conservation, and also reduce overall carbon emissions on the supply chain. Moreover, Company A also needs to learn new technologies and introduce new equipment

to continuously improve the efficiency of coal washing processes, strengthen the recycling and treatment of toxic substances, and better remove impurities from coal products through such forms to achieve environmental protection.

6.4 Comparative analysis of new business models and traditional business models

At present, through the optimization of business model, Company A cannot only effectively reduce carbon emissions, but also better meet the dual carbon goals proposed by the country, which is more in line with the concept of energy conservation and emission reduction. The following table can reflect the comparison between traditional business models and transformed business models based on the background of dual carbon. It can be seen that the new business model can further reduce carbon emissions, which is more friendly to the environment and development. It strives to reach the peak of carbon dioxide emissions by 2030 and achieve net zero carbon dioxide emissions by 2060.

Moreover, after optimizing the business model, it can be seen that the new business model can not only be close to the market and customers, but also better enhance the core competitiveness and corporate efficiency of Company A, further drive the reduction of carbon emissions in the enterprise and the industry as a whole, and lay the foundation for effectively creating an industrial ecological chain, achieving carbon emission reduction, and improving the effectiveness of environmental control objectives.

Table 6.1 Comparison of elements of old and new business models of Company A

Elements	New business model	Traditional business model
Value proposition	Focus on customers and meet customers' needs	Shoulder the responsibilities of state-owned enterprises, ensure the maintenance and appreciation of state-owned capital, and shoulder social responsibilities
Customer segmentation	Demand based segmentation methods, such as resource demand, capital demand, solution demand, etc	According to the segmentation of industry sectors, there are five sectors, including coal, steel, coke, ore and other bulk commodities
Channel access	Deliver value proposition through service and solution	Provide products and funds
Customer relations	Comprehensive long-term cooperative alliance relationship	Trading relationship
Core	Stable cooperative relationship and	State owned enterprise background,

resources	alliance with customers	financing ability, stable resources
Key business	Integrate the needs of users in the supply chain and propose solutions	Coal and steel business
Key partners	Core customers in various alliances	Large coal, steel and trading enterprises
Source of income	Direct income, supply chain financial income and peripheral driving income based on scale effect	Profits from business and capital injection from superior companies
Cost structure	Purchase and sales costs, financing costs and platform maintenance costs based on industrial chain services	Purchase and sale costs, management costs and operating expenses of trading business

Source: author (2024)

7. Conclusions

In recent years, with the introduction of the national dual carbon target, various enterprises have also responded to the call of national policies to reduce carbon emissions. However, traditional coal enterprises will face many difficulties and challenges. They must strengthen the innovation and improvement of business models, and constantly optimize them in combination with market development needs and future industry development trends. Only through such forms can coal enterprises grasp and seize the opportunity of transformation, break away from traditional businesses, and achieve industrial innovation and development. At the same time, under the background of the dual carbon goals, coal enterprises should also constantly optimize and adjust their business models to achieve strategic transformation in the fields of clean energy and low carbon emissions. Only in this way can they continuously promote the improvement of enterprise development efficiency and drive the green development of the industrial chain to achieve the expected goals.

Through research, it has been concluded that the business model currently implemented by Company A under the background of the dual carbon goals is difficult to meet market demand, especially the goal of "striving to achieve carbon peak before 2030 and carbon neutrality before 2060" proposed by the Chinese government. Therefore, through analysing the problems and deficiencies in the implementation of Company A's business model, as well as the internal and external environment, corresponding measures and implementation approaches for optimizing the business model are proposed, which can promote the strategic transformation of Company A to achieve practical results.

As a path for future research, the depth of problem analysis needs to be further improved, and there is still room for improvement in grasping and understanding the market competition situation.

References

Arif, T., Bohr, H., & Nelson, C. (2021). The Business Model Innovation Process : Preparation， Organization and Management. doi:10.4324/9781003215097

Barros, C. E. J., Silva, J. M., & Broega, A. C. (2022). Circular Business Models and Textile Waste: Riopele Case Study in Portugal. Advances in Science and Technology, 121-130. 10.4028/P-Q9QLU7

Chen, Q. (2024). Dual carbon goal driven digital strategic transformation of sporting goods manufacturing industry: dynamic mechanism, realistic bottlenecks and solutions. Journal of Jilin Institute of Physical Education (04), 1-7. doi:10.13720/j.cnki.22-1286.20240826.008

Chen, X. (2019). Research on strategic transformation risk management of s coal company (Master's thesis, Beijing Jiaotong University). https://kns.cnki.net/kcms2/article/abstract?v=KzQCREa95bGYKNXSBd0599C5-Msejtltcmyg3ecamz47tdf3aziqd6ibr_cs79x7uzkq7dry4jsadvwuduml55v8lrxlnxlnxtqorljceley5upzy_qczgea6l0vahixmrcqjjuzftaofciqci1skplg7dxexjriyftjbgg5ifwcugrrljwc0r4comfrmeaklszxl1kog0=&uniplatform=nzkpt&language=chs

Li, C., & Shen, B. (2019). Accelerating renewable energy electrification and rural economic development through innovative business models: a case study of China. Energy Policy, 280-286. doi： 10.1016/j.enpol.2018.12.009

Chen, J., Lu, & Li, X. (2024). Exploration on the reform path of agroforestry meteorology curriculum. Smart Agriculture Guide (17), 123-126. doi:10.20028/j.zhnydk.2024.17.029

Dai, Y., Liu, C., Zhou, P., Zhou, J., & Xiang, S. (2024). Application and research progress of power system energy storage technology in the context of dual carbon. Energy Storage Science and Technology (08), 2772-2774. doi: 10.19799/j.cnki.2095-4239.2024.0695

Da, B. (2021). Research on investment strategy of clean coal technology and power generation emission reduction in coal power supply chain under the background of carbon trading (Doctoral dissertation, China University of Mining and Technology). https://link.cnki.net/doi/10.27623/d.cnki.gzkyu.2021.003234 doi:10.27623/d.cnki.gzkyu.2021.003234

Espinosa, S. A. E., Delgado, B. E., & Munuela, A. J. L. (2023). Business model innovation as a response to the sharing economy. European Journal of Management and Business Economics (5), 602-619. doi: 10.1108/EJMBE-06-2022-0187

Fu, T. (2019). Thoughts on the strategic transformation of coal survey and design enterprises to engineering companies. Inner Mongolia Coal Economy (18), 65-67.

doi:10.13487/j.cnki.imce.014970

Faculty of Administrative Sciences, Brawijaya University, Malang, Indonesia & Semarang State University, Semarang, Indonesia. (2019). A review and research agenda in business model innovation. International Journal of Pharmaceutical and Healthcare Marketing (3), 264-287. 10.1108/IJPHM-12-2017-0073

Georgia, M. A., Collie, A., & Gore, S. (2019). Family Firms and Institutional Contexts：Business Models，Innovation and Competitive Advantage. doi:10.4337/9781788970181

Gu, F., Gao, C., Liu, S., & Wang, R. (2024). Research on the construction and innovation strategy of China's green and low carbon technology system under the "double carbon" goal. Business Economics (09), 167-170+174. doi:10.19905/j.cnki.syjj1982.2024.09.004

Gao, H. (2018). Research on business transformation strategy of Beijing Tongzhou District Coal Company (Master's thesis, Beijing Forestry University). https://link.cnki.net/doi/10.26949/d.cnki.gblyu.2018.000272 doi:10.26949/d.cnki.gblyu.2018.000272

Zhao, H. (2021). Research on Reconstruction and Strategy of Enterprise Business Model in the Digital Age. Economics & Management Review (6), 10.37420/J.EMR.2021.037

Jia, L. Research on the dilemma of environmental governance legalization in leather industrial parks under the goal of "double carbon". China Leather, 1-5. doi:10.13536/j.cnki.issn1001-6813.2024-009-005

Jin, Y. (2022). Ecological reform of coal law under the requirements of "green and low carbon development". Shanghai Energy Conservation (12), 1490-1494. doi:10.13770/j.cnki.issn2095-705x.2022.12.001

Kong, P., & Xiao, R. (2024). Research on the evaluation and improvement path of green business environment in Fujian Province under the goal of "double carbon" -- Based on Entropy TOPSIS and dynamic fsqca. Times Economics and Trade (08), 142-149. doi:10.19463/j.cnki.sdjm.2024.08.047

Li, M., Xu, J., Zhang, H., & Zhou, J. (2024). Spatio temporal variation of green use efficiency of cultivated land in rocky desertification area of Guangxi under the "double carbon" goal. Soil and Water Conservation Research (06), 365-374. doi:10.13869/j.cnki.rswc.2024.06.020

Li, M. (2024). Research on the high quality development path of green finance in Henan under the goal of "double carbon". Times Economic and Trade (08), 162-164. doi:10.19463/j.cnki.sdjm.2024.08.030

Li, X. (2018). Research on the development strategy of Shanxi wk coal company (Master's thesis, Changchun University of Technology). https://kns.cnki.net/kcms2/article/abstract?v=KzQCREa95bFD7SnA4XsUSButKWFdmQ

RuSWZLVZ_7FfpbbCWu79CuYqa9S59XjPUPerDAwrEk_4vG6YFrkfZ-Y7jhj8qpp4gaygdowynqgtvdwc1ibuqlu89v8qqmivbxq5fmpuv75je6sytpfg1cca6hlxmohqsdx3yrqpwpqusdc3ervusjib2vvc6xdm9k-xc8ktgnge=&uniplatform=nzkpt&language=chs

Miller, K., McAdam, M., Spieth, P., & Brady, M. (2020). Business models big and small: Review of conceptualisations and constructs and future directions for SME business model research. Journal of Business Research (prepublish), 10.1016/J.JBUSRES.2020.12.036

Bashir, M., Naqshbandi, M. M., & Farooq, R. (2020). Business model innovation: a systematic review and future research directions. International Journal of Innovation Science (4), 457-476. 10.1108/IJIS-06-2020-0081

Geissdoerfer, M., Santamaria, T., Kirchherr, J., & Pelzeter, C. (2022). Driving factors and obstacles of circular business model innovation. Business Strategy and Environment (6), 3814-3832. doi:10.1002/BSE.3339

March, P. (2019). Business model of start-up innovation organizations. Quarterly Journal of Economists and Managers (2), 161-173. doi:10.5604/01.3001.0013.2381

Meng, Z. Research on the innovation and development of enterprise business model under the background of digital economy. Mall Modernization, 2024, (21): 4-6. doi : 10.14013/j.cnki.scxdh.2024.21.045

Nanond, N., & Damien, M. (2024). Business model patterns in the 3D food printing industry. International Journal of Innovation Science (1), 77-94. 10.1108/IJIS-09-2022-0176

Niu, K., & Kang, J. (2021). Micro level business model innovation analysis of large coal enterprises. Coal Economy Research (03), 50-55. doi:10.13202/j.cnki.cer.2021.03.010

Niu, K., & Li, M. (2021). Research on business operation mode innovation of coal enterprise industry and service industry. Coal Economy Research (02), 65-69. doi:10.13202/j.cnki.cer.2021.02.011

Niu, K. (2021). Construction and implementation of the business model of the industrial sector of the coal group company. Coal Economy Research (01), 50-54. doi:10.13202/j.cnki.cer.2021.01.009

Pan, Y. (2023). Research on diversified development strategy of Gaotouyao coal mine under the background of "double carbon" goal (Master's thesis, Inner Mongolia University of Finance and Economics). doi:10.27797/d.cnki.gnmgc.2023.000026

Pan, L. (2021). Briefly describe the green development of coal enterprises under the "double carbon" strategy. Yunnan Science and Technology Management (06), 8-10. doi:10.19774/j.cnki.53-1085.2021.06.003

Pan, D., & Yan, Y. (2024). Research on Evaluation of sustainable development ability of coal enterprises under the background of "double carbon". Operation and Management (06),

138-143. doi:10.16517/j.cnki.cn12-1034/f.2024.06.013

Qiao, H. (2024). Research on the transformation path and development direction of coal enterprises under the background of "double carbon". Modern Industrial Economy and Informatization (05), 37-40. doi:10.16525/j.cnki.14-1362/n.2024.05.013

Song, J., & Zhang, K. (2024). Research on enterprise business model innovation under the current e-commerce background. Mall Modernization (21), 10-12. doi:10.14013/j.cnki.scxdh.2024.21.050

Sun, Y. (2023). Research on the development strategy of a thermal power company under the background of "double carbon" (Master's thesis, Guizhou University). doi:10.27047/d.cnki.ggudu.2023.001122

Tax, L. (2021). Research on the business model of human capital service in the coal industry. Inner Mongolia Coal Economy (08), 75-76. doi:10.13487/j.cnki.imce.019815

Von Delft, S., & Zhao, Y. (2020). Business models in process industries: Emerging trends and future research. Technovation (prepublish), 102195-. 10.1016/j.technovation.2020.102195

Torbacki, W. (2024). A Framework for Assessing Innovations, Business Models and Sustainability for Software Companies Using Hybrid Multiple-Criteria Decision-Making. Sustainability (14), 5871-5871. 10.3390/SU16145871

Wu, T. (2022). Research on business model transformation of petrochemical oil service companies under the background of "double carbon" (Master's thesis, China University of Petroleum (Beijing)). doi:10.27643/d.cnki.gsybu.2022.001844

Wang, W., Gao, X., Lin, Z., & Zhang, Y. (2022). Has China's coal consumption really peaked? Prediction and scenario analysis of China's coal consumption peaking under the dual carbon target. Frontier of Environmental Science. doi:10.3389/fenvs.2022.974763

Xu, L. (2021). Current situation of China's coal development and construction and prospects for the "14th five year plan". China Coal (03), 44-48. doi:10.19880/j.cnki.ccm.2021.03.006

Xu, L. (2022). Research on the impact of inter-bank technology M&A of Lianmei holdings on enterprise sustainable business model innovation (Master's thesis, Shandong University). doi:10.27272/d.cnki.gshdu.2022.001787

Xue, W., & Jiang, L. (2023). Management and high quality development of coal enterprises under the constraint of "double carbon". Coal Technology (07), 251-254. doi:10.13301/j.cnki.ct.2023.07.058

Yu, H. (2023). Research on the path of energy saving and carbon reduction in coal mining areas under the "double carbon" goal. Coal Economy Research (09), 47-53. doi:10.13202/j.cnki.cer.2023.09.006

Yu, X. (2022). Research on the business model of comprehensive utilization of fly ash in

China (Master's thesis, Nankai University). doi:10.27254/d.cnki.gnkau.2022.000348

Zhao, J. (2024). Analysis on the motivation and performance of Green Governance of coal enterprises under the background of "double carbon" (Master's thesis, Zhengzhou Institute of Aeronautical Industry Management). doi:10.27898/d.cnki.gzhgl.2024.000107

Zhang, H., & Gao, H. (2024). Big data capability, business model and innovation performance of logistics enterprises: Simulation Analysis Based on system dynamics. Management Review (08), 93-104. doi:10.14120/j.cnki.cn11-5057/f.2024.08.004

Zhu, X. (2015). Research on transformation and development strategy of SMCC coal power construction company (Master's thesis, Lanzhou University). https://kns.cnki.net/kcms2/article/abstract?v=KzQCREa95bGGIQGpkFsKIBd4I6eln3yjlUIK3xyZTZ22emIs833tnWigEVbIhGPAQaAAr3EH4wP4aJvXS7JHzoLlswkRZFluzk4sx6pD2Pv5-ltiywotbiglakkiwqy4txoprhyzhby1uejclzancuodtudg2fsdpnskuh0rbonokeiyuzwzzwgv1nkvbcjwvxwmunphzk=&uniplatform=nzkpt&language=chs

Zhang, C. (2021). Research on business model innovation of bulk commodity trading platform based on grounded theory (Master's thesis, Zhengzhou University). doi:10.27466/d.cnki.gzzdu.2021.000638

Zhang, X. (2022). Research on circular symbiosis business model of coal liquefaction project (Doctoral dissertation, China University of Mining and Technology (Beijing)). doi:10.27624/d.cnki.gzkbu.2022.000138

Zhu, H., & Wu, L. (2024). Research on the green transformation of Shaoxing textile enterprises enabled by digital technology under the goal of "double carbon". Business Economy (09), 119-122+127. doi:10.19905/j.cnki.syjj1982.2024.09.018