

Enterprise Environmental Cost Control Based on Value Chain

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ABSTRACT. *The theory of environmental cost control and the theory of value chain form a fit between strategic thinking and value-added purposes. Enterprise environmental cost control based on value chain includes internal cost chain environmental cost control and external value chain environmental cost control. Eco-friendly design concept, green procurement model, clean production strategy and green marketing strategy constitute the environmental cost control of the internal value chain of the enterprise; The environmental cost control analysis of the upstream supplier and downstream purchase customer is the environmental cost control of the external value chain of the enterprise.*

KEYWORDS: *Environmental cost; cost control; value chain.*

1.The combination of environmental cost control theory and value chain theory

(1)Overview of Environmental Cost Control Theory

Environmental costs can be understood from two perspectives. From the perspective of theoretical research, the document of the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting states: "Environmental costs refer to the environmentally responsible principles that are used to manage the environmental impact of corporate activities or The cost of the measures required to be taken, as well as other costs incurred by the company in implementing environmental goals and requirements." From the perspective of business management, it is the organization as an organization, in the process of sustainable development, due to economic activities or other activities. The cost of natural resource consumption, the cost of degrading ecological resources, and the cost of control measures taken to manage the environmental impact of corporate activities.

The above definition is guided by the concept of sustainable development, with the core responsibility of the company as the center, and the cost of the environmental impact of the enterprise and the expenditure of preventive measures are included in the enterprise environmental cost accounting. The goal of

environmental cost control is to manage the activities of the enterprise. The impact and the requirements to be met by the implementation of environmental objectives.

The traditional theory of corporate environmental cost control. From the perspective of the overall strategic management of the enterprise, the traditional environmental cost control theory focuses on cost accounting, focusing on the analysis of financial statements and cost statements, while the main purpose of environmental cost management is to save within a certain range. Reduce the cost to a lesser extent, but lack attention.

The problems arising from the environmental cost control of traditional enterprises in China can be analyzed from the macro and micro levels. At the macro level, if the government's supervision is not strong, governments at all levels pay less attention to environmental pollution issues; lack of relevant laws and regulations to ensure the smooth implementation of environmental cost control, resulting in poor controllability at the accounting level; The theoretical study of environmental cost control is inconsistent with the actual needs of enterprises, making the actual operation of environmental cost accounting random. At the micro level, for example, most enterprises lack a unified thinking and strategic vision in management; they have a terminal governance idea and the environmental cost control method is backward.

(2) Value chain theory

The meaning of value chain theory. Professor Michael Porter pointed out in the famous book "Competitive Strategy": The value chain is a combination of various activities of a company in a specific industry, and it is represented by a collection of value creation activities. These activities are divided into two categories: "basic activities" and "assisted activities". "Basic activities" include internal logistics, operations production, external logistics, marketing and services, etc. "Auxiliary activities" include enterprise infrastructure, human resource management, technology development and procurement. The value chain lists total value, value activity, and profit. Value activities are the material and technologically distinct activities that companies engage in. They are the cornerstone of companies creating products that are valuable to buyers. Profit is the difference between the total value and the total cost of engaging in various activities.

The application of value chain theory in modern enterprises. Chinese scholar Yan Dawu proposed that the application of modern enterprise to value chain theory should be constructed from two aspects: time and space.

The specific contents of the enterprise cost management model based on value chain are as follows: First, use the vertical value chain analysis method and the horizontal value chain analysis method to set the target cost; second, conduct internal value chain analysis and implement operation cost control; third, prepare cost accounting Report; Fourth, performance appraisal and continuous improvement, optimizing the value chain. This paper will draw on the viewpoint of Prof. Da Dawu to analyze the enterprise environmental cost control model based on value chain theory.

(3)The point of convergence between environmental cost control theory and value chain theory

Analysis of the convergence of environmental cost control theory and value chain theory. ① Strategic and intellectual fit. Managed on a value chain basis, the vision can be extended to the supplier, and then extended to the purchaser to the end customer. This value chain-based management better coordinates the relationship between the company and upstream and downstream enterprises, enabling them to achieve long-term strategic development. Corporate environmental cost control is based on a sustainable development strategy and is part of strategic cost management. Both analyze the problem from a strategic perspective. ②Value-added purpose fit. An important step in the process of value chain analysis is to identify the value-added activities and non-value-added activities of enterprises, and then eliminate the value-added activities and increase the value of enterprises. The environmental cost control of enterprises is also based on the value-added of enterprise value, and the two form a fit.

2.Enterprise Environmental Cost Control Based on Internal Value Chain

The internal value chain operation of an enterprise is the main activity and supporting activities for producing valuable products or services for customers within the enterprise. As mentioned above, the company's internal value activities include internal logistics, production operations, external logistics, market development and sales activities, and service delivery. It can be grouped into four phases, namely, the R&D phase, the procurement phase, and the production phase. And marketing stage.

(1)Environmental cost control analysis during the research and development phase

Traditional R&D design concept. The traditional R&D design concept of the enterprise meets the needs of customers and solves the difficulties of customers. It rarely takes into account the production of subsequent auxiliary products and the loss of resources and energy after the products enter the social environment and the pollution caused by the products themselves

Eco-friendly design concept. The R&D design phase is the beginning of environmental cost control in the internal value chain of the enterprise, and it is the key to environmental cost control. The focus of enterprise R&D design should be on designing products that balance the environmental costs of the enterprise with the overall social environment and the economic interests of the enterprise; it can also provide a good start for environmental cost management in the future stages of the internal value chain, and Can carry out the integration planning of the entire chain. The company's new eco-friendly design concept mainly includes the following aspects: ①Reduce the use of energy resources and improve the efficiency of use. Environmentally friendly product design can reduce the consumption rate of raw materials and improve the efficiency of raw materials. ②Improve the production

skill level of the products. The eco-friendly design concept continually improves production technology to reduce the environmental impact of business operations. The main measures include reducing the rate of auxiliary materials and energy resources, and minimizing the rate of waste discharge. ③Extend the life cycle of the product. The life cycle of the product can be extended by taking measures such as delaying the time when the product enters the waste disposal stage, improving the utilization efficiency of the product, and delaying the time for the user to purchase the substitute product. ④Optimize and upgrade the product recycling system. When the consumer completes the consumption purpose of the product, it enters the recycling process. Optimization of the product recycling system refers to the recycling and recycling of product parts with reusable value and environmentally friendly disposal of waste.

(2)Environmental cost control analysis during the procurement phase

Traditional procurement model. The purpose of the company's procurement of materials is to meet the needs of the company's product production and internal consumption. Under the traditional procurement method, the purchasing department will focus on whether the purchased materials can meet the needs of product production to the greatest extent, and whether the price of purchased materials can be accepted by enterprises.

The shortcomings of traditional enterprise procurement mode in environmental cost regulation are as follows:① Material procurement and material management are self-contained, lacking supervision and coordination between each other, and there is no unified regulation and standard constraints on environmental cost control. ② The procurement department has poor coordination with upstream suppliers, and rarely involves activities such as business information sharing. ③ For the environmental cost problems arising in the procurement process, no prior monitoring is performed, but the method of post-event control is adopted.

Green procurement model. The green procurement model mainly includes the following contents: (1) The procurement department and the product R&D and design department, the production department and the marketing department carry out deeper exchanges and cooperation; (2) Reduce the proportion of procurement of raw materials that are complicated in the procurement process and have serious pollution to the ecological environment. (3) Improve the recycling rate of purchased raw materials, thereby reducing the recurring purchase cost of recyclable raw materials and components; (4) Strengthening the prior control of raw materials and resource procurement, thereby reducing the environmental cost of environmental management at the end of the enterprise.

The green procurement model is often regarded as a procurement model with high cost and expenditure. However, from the perspective of strategic planning, the company adopts a green procurement strategy suitable for its own situation in the procurement stage, which can help enterprises to plan the environmental cost of the entire value chain. Expenditure, so that it is reduced to a minimum within a reasonable range.

(3) Environmental cost control analysis in the production stage

Traditional production methods. China's current use of "high mining, low utilization, high emissions" extensive production methods, which not only caused huge waste of resources, energy and environmental pollution, but also directly affect and constrain the sustained and healthy development of the economy.

Clean production strategy. Cleaner production strategies can help increase the conversion of raw materials into products, increase the recycling rate of waste and reduce the emission of environmental pollutants within a certain range. The clean production strategy includes the following three aspects: ① Improve the product production framework. Reasonable use of raw materials and energy required for production, reducing unnecessary consumption; the harm to users caused by the product after being put into use and the pollution of the ecological environment can be reduced to a minimum level that can be controlled. ② Adopt advanced production technology. Enterprises need to improve the production technology level of their products, eliminate obsolete equipment, and improve the utilization rate of raw materials and resources as much as possible in every stage of the production stage, and minimize the environmental damage caused by emissions in this stage. ③ A closed loop that achieves production. Enterprises need to recycle raw materials and resources, so that these materials can be returned to the production operations of enterprises after special procedures, thus forming a closed loop of production and reducing the level of waste emissions to the bottom.

(4) Environmental cost control analysis in the marketing stage

Traditional marketing methods. At present, most of China's marketing methods are still focused on stimulating consumers' shopping needs, and the main marketing strategy is to stimulate consumers to increase the number of purchased products.

Green marketing strategy. The green marketing strategy refers to the enterprise's marketing process of protecting the ecological environment, reducing waste emissions, and efficiently utilizing resources and energy while meeting customer requirements and obtaining sufficient economic benefits, so as to achieve sustainable development of enterprises and society. The following is a combination of the "4P" theory in marketing to analyze the green marketing strategy of the enterprise: ① Producing green and environmentally friendly products. The production of environmentally friendly products should follow the ecological concept of the R&D design stage. The production should be in accordance with the clean production process, while constantly innovating the production techniques and equipment to meet the international standards of green products. ② Formulate the appropriate price for green products. The consumer groups of environmentally-friendly green products should be ordinary mass consumers. In order to stimulate the enthusiasm of more consumers, companies should make the positioning of products more beautiful, cheap, and pollution-free. ③ Develop unique marketing channels for green products. When exploring the sales channels of green products, it is necessary to consider the eco-environmental awareness of the sales enterprises in the downstream value chain, and choose to establish cooperative relationships with

downstream sales enterprises with strong social responsibility and high consumer recognition.④ Promote green product promotion activities. The focus of green product promotion activities should be on disseminating the green environmental protection concept contained in the products, establishing the image of the company's concern for environmental protection, and satisfying consumers' demand for environmentally friendly and pollution-free products, so as to increase the market share of the products.

3.Enterprise Environmental Cost Control Based on External Value Chain

The external value chain of an enterprise refers to the value activities of external actors that are closely related to the enterprise, including the supplier value chain (also known as the upstream value chain) and the purchase customer value chain (also known as the downstream value chain).

(1)Analysis of Environmental Cost Control in the Upstream Value Chain

Upstream value chain. Through the procurement activities, the company realizes the connection between the internal value chain and the upstream suppliers in the external value chain. Upstream suppliers provide enterprises with materials such as raw materials, resources and energy, as well as goods packaging and transportation services.

The quality, price and environmental standards of the raw materials exported by the suppliers in the upstream value chain to the enterprise have an important impact on the accumulation of environmental costs of the enterprise; at the same time, the product development level, production process level and equipment of the supplier The degree of renewal and the environmental protection concept of the company will also have an important impact on the environmental cost of the enterprise. Therefore, the choice of upstream suppliers is an effective management tool for enterprises to regulate environmental costs and reduce environmental hazards.

Upstream value chain environmental cost control measures. ① Rate upstream suppliers to create classified files. The upstream suppliers will be scored and classified according to the standards of their product technology research and development, production process level, equipment replacement level, and enterprise development potential. Product technology research and development level includes new technology research and development rate, green environmental technology research and development investment status; enterprise development potential includes supplier market share in the same industry, enterprise's strategic planning for green product production, and the company's own economic benefits. By using these indicators to rank suppliers, different strategies are adopted for different levels of suppliers, giving different degrees of attention. ② Conducting technical exchanges with upstream suppliers to achieve mutual benefits. The supplier is the provider of the raw materials needed for the production of the product. The enterprise is the designer of the product and the executor of the production.

Therefore, the company cooperates with the upstream supplier on the production of the product, which helps the enterprise to plan the product as a whole. Design, coordinating environmental costs from a global perspective.

Enterprises can establish cooperative business relationships with upstream suppliers that work closely with themselves, and negotiate their own requirements for quality, quality and environmental compliance with upstream suppliers. At the same time, jointly develop technologies to control environmental costs of products. method. This is conducive to achieving a win-win situation for suppliers and manufacturers. On the one hand, suppliers can purposely produce and provide the products customers need, efficiently meet the needs of customers, reduce unnecessary production costs, and achieve both economic and social benefits. On the other hand, companies can accurately obtain the raw materials they need and regulate environmental costs from the initial stage of production, while reducing the environmental costs required for end-of-pipe treatment due to waste discharge, and establishing a green image of the company's products.

(2) Analysis of environmental cost control in downstream value chain

Downstream value chain. Through marketing activities, enterprises realize the connection between the internal value chain of the enterprise and the downstream purchase customers in the external value chain. Downstream purchase customers mainly include dealers and consumers. Cooperation with downstream purchase customers is not only related to the positioning of enterprise products in the minds of consumers, but also related to the recycling and recycling of waste resources in the process of product use and consumption.

The downstream purchase customers of the external value chain mainly affect the environmental cost of the enterprise through the following two aspects: First, the customers in the downstream value chain purchase the enterprise products, but the responsibility for the disposal of the waste generated after the end of the product's service life usually needs to be produced by the product. The enterprise bears, so the environmental cost generated downstream of the value chain becomes one of the components of the overall environmental cost of the enterprise. Second, the role of the downstream value chain in the economic benefits of enterprises also affects the regulation of corporate environmental costs. If the company can effectively recycle the waste generated in the downstream of the value chain and re-invest the waste into the production process, it can achieve a closed loop of production, thereby reducing the environmental cost of the enterprise. This not only protects the ecological environment benefits, but also increases the economic benefits of the enterprise. Therefore, the choice of downstream purchase customers is the key to the successful implementation of the green marketing strategy and the overall optimization of the value chain.

Downstream value chain environmental cost control measures. (1) Dealer link. The products of the enterprise must first pass through the dealer link in order to reach the consumers. Compared with production companies, dealers are closer to consumers and better understand the needs of consumers. Today, with the concept of green consumption becoming more and more popular, companies need dealers to

provide advice and guidance on how to understand green products and consumers' acceptance of environmentally friendly products. On the other hand, enterprises can use The dealer's customer network simplifies the corporate waste recycling process and increases waste recycling rates, thereby significantly reducing environmental costs. (2) Consumer links. The purchase and use of consumers is the ultimate goal of the company's production and sales activities. A clear understanding of consumer needs, especially for environmentally friendly products, can help companies develop and produce green products that are really needed in the market, accurately measure environmental costs, and properly implement waste recycling. Enterprises can take the following measures when conducting environmental cost control in the consumer sector: First, classify consumers according to consumers' demand for green environmental protection, and use this as a basis to produce environmentally friendly products for different customer groups; Establish information communication and collaboration mechanisms, and closely connect with consumers, providing a platform for understanding consumer demand, improving waste recycling and refining environmental costs.

References:

- [1] Y.G. Chen (1998). The first international guide to environmental accounting and reporting -the 15th meeting of the Intergovernmental Working Group of Experts on International Accounting and Reporting Standards. Accounting Research, vol. 5.
- [2] Y.P Xu, H.Q Jiang (2006). Accounting and control of environmental costs of manufacturing enterprises, ijing: Tsinghua University Press.
- [3] Y.H Chen, S.M Li (2009). Discussion on environmental accounting and its costs and benefits . Taxation and Economy, no ,pp.63.
- [4] M. Porter (1997). Competitive advantage. Beijing: Huaxia Publishing House.
- [5] Y Chang (2010). Research on Environmental Cost Control of Jiangxi Enterprises ——Based on Value Chain Theory Analysis. Business Accounting, vol. 15, no.2, pp.12-19.
- [6] W.H Xiao (2010). Constructing a resource and environmental price system to promote the long-term development of circular economy. Journal of Guizhou College of Finance and Economics, no. pp. 46.
- [7] C Li (2007). System improvement and technological innovation: the guarantee of green management in Chinese enterprises. Financial Theory and Practice, no. 4, pp. 83 - 86.