Analysis of Environment Accounting in the Context of Big Data

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Abstract. The production and operation of enterprises create wealth for themselves, but the consumption of resources in the operation of enterprises also brings pressure to the natural environment. It is an inevitable choice for enterprises to improve their core competitiveness and adapt to the future economic environment more quickly by integrating environmental protection into their strategic planning, management activities and accounting system. The implementation of environment accounting has become the trend of economic development in the future. This paper analyzes environment accounting under the background of big data, by using the method of SWOT analysis. The article holds the opinion that the strengthening of environmental awareness of enterprises and the public and the increasingly perfect laws and regulations have laid a good foundation for the development of environment accounting. Under the rapid development of information technology, some problems of environment accounting, disclosure of environmental information and the increase of operating cost in the short term are also exposed. Finally, this paper puts forward some suggestions on the development of environment accounting at the present stage.

1. Introduction
With the development of Internet technology and the popularity of Internet applications, the big data era followed. Economic and social development and all aspects of people's lives are affected by the Internet. The analysis and use of massive and dynamic data is possible. And every aspect of enterprise development is also influenced by the big data era, which is changing imperceptibly. Enterprise is an important link in economic and social development. While enjoying the benefits brought by the rapid economic development, enterprises should also take full account of the long-term harmonious development between enterprises and economic society. With increasing attention to environmental protection and environmental governance at the national and social levels, as well as a global consensus on sustainable development strategies, there is also growing awareness of the problems posed by environmental pollution and excessive energy consumption, and the goal of harmonious symbiosis between man and nature is imminent. The transformation of economic growth mode and the introduction of environmental protection laws and regulations put forward new requirements for the existing management mode of enterprises. More and more enterprises begin to take certain measures of environmental protection and energy protection in the process of production and operation, so as to reduce the damage of waste to the environment as much as possible. In order to meet the needs of enterprise information users, enterprises need to account for economic business and disclose accounting
information regularly. Therefore, under the new situation, how to account for the input and output of enterprise environmental protection and how to disclose environmental information to the outside world has become a problem faced by accountants in their work. Environment accounting came into being.

2. Analysis of the Institutional Background
In the period of relatively weak awareness of environmental protection, the development of extensive economy brings benefits to economic entities, but also brings some side effects, such as the excessive consumption of energy, the gradual destruction of ecological balance, the abnormal change of the earth's climate, and so on. We can not ignore the warnings of nature to mankind. The implementation of sustainable development strategy in order to reduce environmental pollution, improve the utilization rate of resources and achieve green development has become an inevitable choice to realize the long-term development of human society. In this process, enterprises bear the unshirkable responsibility for the environment. Enterprises should adjust their business methods in time to adapt to new changes. Under the guidance of sustainable development theory, the long-term development strategy of enterprises begins to reflect the concept of green economy and the consciousness of ecological environment protection. At the same time, the enterprise environmental protection action is also in progress. The integration of revenue and expenditure related to environmental protection into the accounting of business is consistent with the objectives of the sustainable development strategy. The role of environment accounting is also increasingly highlighted. With the advent of the big data era, financial data sharing became possible. This also provides a favorable guarantee for the further development of environment accounting.

Environment accounting still needs to follow the basic theory of accounting. It also needs to go through the process of recognition, measurement, recording and reporting. To a certain extent, it is a revision of traditional accounting and it is an adaptive adjustment forced by the new situation. Environment accounting is mainly measured in currency. It carries on the comprehensive accounting to the environmental assets, the expense, the benefit and so on according to the accounting procedure, in order to facilitate the appraisal enterprise environmental activity to the financial result influence. But environment accounting has broken through the scope of fund movement to assess the external effects of economic behavior and management activities on the environment. Therefore, some accounting contents of environment accounting often need to be converted into currency by some method. However, some of the conversion methods are greatly influenced by human factors, so there is still room for improvement in accuracy.

3. SWOT Analysis of Environment Accounting in the Background of Big Data
At present, environment accounting under the background of big data is a new thing, with advantages, disadvantages, but also facing threats and opportunities. Hence, it is necessary to analyze the current situation of environment accounting from a SWOT perspective.

3.1. The Advantages of Environment Accounting in the Context of Big Data
With the increase of environmental protection publicity and the introduction of environmental protection related laws and regulations, the environmental awareness of enterprises began to strengthen. Affected by the national standards and the requirements of relevant industry standards, enterprises have increased investment in the procurement and use of facilities in greening, sewage treatment and so on. This conceptual change also provides the possibility for the further popularization and development of environment accounting. And this will help to assess the environmental impact of business activities reasonably and give subsequent development and planning guidance accordingly.

The listed company is the main body that issues the related environment accounting information report. The data of environmental responsibility information disclosure evaluation report of listed companies in China show that the proportion of listed companies that issued social responsibility or environmental responsibility reports by domestic enterprises in 2018 is 56.38 %. The speed of information dissemination in the big data era is accelerating, and the efforts made in the production and
operation of enterprises in environmental protection can be displayed in the form of data and materials, and made public. On the one hand, it helps to evaluate the environmental contribution of enterprises, on the other hand, it can be better supervised by stakeholders. The work of enterprises in environmental protection will gain social attention and publicity, which can enhance the reputation of enterprises in the industry. Nowadays, the reputation of enterprises has become an important index of their comprehensive strength. Good reputation will bring opportunities for the sustainable development of enterprises.

3.2. The Disadvantages of Environment Accounting in the Context of Big Data

The first aspect is about the current research on environment accounting focuses on the theoretical level. And the research that can guide environment accounting in practice is less. The provisions of the new accounting standards provide some guidance for the implementation of environment accounting. However, there is a lack of a complete set of practical guidelines and norms on how environment accounting should be applied. The perfect environment accounting system has not yet been formed. Enterprises often handle environment related business according to their own understanding. This has also resulted in a variety of business approaches. This has resulted in lower comparability and uniformity of accounting records and reports for environmental protection operations among different enterprises. This brings inconvenience to the use of environment accounting in the daily operation and management of enterprises.

The second aspect is about environmental disclosure. As one of the main body of resource consumption, enterprises have the obligation to protect the environment, and also bear the responsibility of disclosing environment accounting information truthfully. According to the report on environmental liability disclosure of listed companies in China, in 2018, the average environmental liability disclosure score was about 33.14 for all companies that issued the relevant environmental liability reports. This figure shows that the enterprise environment accounting information disclosure is still in the development stage. But the average score for the environmental liability disclosure index of the 18 companies that published the environmental report was 68.61. This figure illustrates the overall high level of environmental disclosure for such enterprises. In addition, out of the 928 sample enterprises covered by the study, only 101 reports were examined by the third parties. That's only 10.99 % of the total. It can be seen that the credibility of disclosure remains to be improved. At the moment, environmental reports are not mandatory. Most enterprises do not adopt the model of independent environment information reporting. Most enterprises set up corresponding links in financial reports and social responsibility reports to integrate and disclose the environmental information of enterprises. Specific implementation aspects of environmental information sharing do not provide detailed specifications. This also makes the standard of environmental information disclosure lack of due standardization and reduces its operability. This will lead to a series of problems, such as inconsistent disclosure scope, too formal disclosure content, less quantitative indicators, lack of independent third-party institutions to conduct audit verification, lack of third-party review verification system, and so on. These will affect the effect and reliability of enterprise environmental information disclosure.

The third aspect is about that environment accounting involves multidisciplinary integration. When we deal with the economic business of enterprises in environment protection and other aspects, it may involve professional judgment. But the current accounting talent team generally lacks the professional background of environmental science. So when dealing with related business, there may be a professional judgment error. This is also a disadvantage in the process of popularizing the environment.

The fourth aspect is about the operating cost and liquidity of the enterprise. Enterprises, especially heavy polluting enterprises, will have a lot of behavior in their business process, which will cause environmental protection costs to increase in the short term, such as upgrading environmental protection equipment, increasing facilities, training related personnel and so on. This may have a certain impact on the liquidity of enterprises. Especially for small and medium sized enterprises, because of their late entry into the industry, their survival and development space is limited, so this kind of enterprises focus more on the development of the economy, and to some extent choose to ignore the non-mandatory environmental requirements.
3.3. The Opportunities for Environment Accounting in the Context of Big Data

With the advent of the big data era, the Internet has helped people to achieve the acquisition and sharing of massive data resources, including accounting information. The environmental protection behavior of enterprises involves all aspects of business operation. Therefore, enterprises can realize real time updating of environment accounting information in different links by establishing financial sharing service center. These are positive effects for users of environment accounting information. Under the background of big data, the way of publishing accounting information is more convenient and the timeliness is greatly enhanced. This is beneficial for information users to make effective economic decisions. At the same time, the era of change also stimulates the realization of standardization and standardized management at all levels of enterprises. At the same time, modern environmental protection technology is becoming more and more mature. This provides technical support for the environmental protection of enterprises, and this can also reduce the cost of enterprises in certain procedures. According to the above situation, in the era of big data, stakeholders' recognition of enterprises' initiative in environmental protection has increased year by year. This also provides an opportunity for the development of environment accounting.

3.4. The Risk of Environment Accounting in the Context of Big Data

From the strategic point of view, the environmental protection behavior of enterprises brings about good reputation, media attention and other social effects. But this kind of social effect has certain time lag, and it will not bring the benefit to the enterprise immediately. So the company's actions in environmental protection may not be effective in the short term. This may raise questions from senior managers. To some extent, this is not conducive to the implementation of environment accounting.

4. Improvement measures and optimization recommendations

In view of some problems existing in the implementation of environment accounting in enterprises at present, we can improve from the following aspects.

For the first one, further strengthen the concept of environmental protection. The enhancement of environmental awareness is the foundation of environment accounting. In particular, we should put an end to the business development model of small and medium sized enterprises which pay attention to economic benefits and ignore the environment. Under the guidance of all parties, we should strengthen the effectiveness and environmental protection of enterprise development, and establish the mode of sustainable development of enterprise and environment. At the same time, we should strengthen the publicity of environment accounting so that the employees of enterprises can really realize the importance of protecting the environment. Through training, appropriate incentives and other ways, we can enhance the professional level of financial personnel and comprehensive literacy. And this can help the implementation of enterprise environment accounting.

For the second one, in the era of big data, we should further strengthen the research on environment accounting theory on the basis of the concept of sustainable development, in order to realize the development of theory - driven practice. Specifically, financial accounting, management accounting, environment accounting can be better integrated together. Under the existing accounting system, comprehensive financial performance, environmental performance, resource consumption indicators to establish a comprehensive set of environment accounting indicators in order to facilitate a comprehensive analysis of their economic and environmental conditions. In addition, enterprises may establish management mechanisms for environmental risk reserves. Such a mechanism would allow for periodic verification of potential environmental expenditure items and provision for environment accounting risks. Its role is to deal with large potential future environmental project disposal costs, cleaning costs and unforeseen fines or environmental expenses. It can reduce the operating risk and financial risk of the enterprise, so as to promote the sustainable development and steady operation of the enterprise.

For the third one, further improve the environment accounting system. The implementation of environment accounting can help enterprises avoid possible penalties due to environmental problems,
thus reducing the operational risk. This helps to maintain a good image of the enterprise and to improve the economic and ecological benefits of the enterprise. At present, the lack of perfect environment accounting mechanism affects the promotion and implementation of enterprise environment accounting. In order to implement environment accounting in the new period, we should first improve the content of accounting, including the loss of environmental resources and the expenditure on environmental protection in the process of development. In addition, the recognition, measurement and recording of environment accounting should be clarified, and the application of information technology should be strengthened to improve the accuracy and efficiency of environment accounting. In the process of perfection, we can draw lessons from the relatively mature environment accounting mechanism from the reality, so as to realize the overall value of the environment accounting mechanism.

For the forth one, further strengthen the construction of environment accounting information disclosure mechanism. Enterprises should be encouraged to attach importance to the collection, collation and analysis of environmental information to lay the foundation for the improvement of environment accounting system. By disclosing environment accounting information to the outside world, enterprises can be better supervised and information users can find enterprises that really contribute to the environment and natural resources. And this can promote enterprises to improve the implementation level of environment accounting, thus increasing the value of enterprises. Therefore, we should combine the industry characteristics to formulate the corresponding environmental information disclosure step by step promotion strategy. To promote the public companies that have not issued the social responsibility report and the environmental information related report to raise the awareness and level of disclosure, and to clarify the disclosure form of the enterprise and the information content to be disclosed. The above measures are aimed at improving the integrity and comparability of indicators on environmental management, environmental performance and environmental information communication, and enhancing the content and readability of reports.

5. Conclusion
The implementation of environment accounting conforms to the requirements of the development of the times and is of great significance to the economic development in the world. Enterprises begin to pay attention to the impact of their own business process on the environment and pursue sustainable development. This change in concept will help the smooth implementation of environment accounting. At the same time, with the improvement of environment accounting system and environment accounting information disclosure mechanism, environment accounting will eventually have considerable development.

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