Using Big Data Technology to Analyze the Development Direction of Internal Audit

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Abstract. At present, the world is stepping into the era of big data. Big data is also changing our lives and influencing our way of life and work imperceptibly. Enterprises are also gradually influenced and changed in this era of big data. Internal audit is one of the key components of enterprise value chain management. In the era of big data, the past management concepts and methods have been unable to meet the needs of today’s era. Therefore, the reform of internal audit is imperative. Firstly, this article analyzes the development direction of auditing under the use of big data technology. Then, some questions were raised. Finally, some suggestions were made.

Keywords: Big Data, Internal Audit, Development Direction

1. Introduction

With the rapid development of China’s social economy, information technology has become an indispensable technology in the development of all walks of life, which is changing people's production mode. Big data technology has transformed internal audit from paperless office to mobile office. With the rapid development of information technology, various information facilities have consolidated the foundation of the era of big data. Therefore, enterprises put forward new requirements for information technology and management level. As an important management link and means of enterprises, especially large enterprises, internal audit must keep pace with the times. We should actively adapt to the big data environment in order to improve the efficiency of internal audit. Through modern information technology, we can reduce the labor force, which will reduce the internal accounting costs of enterprises. By capturing all kinds of risk information and value points in the vast amount of internal and external data, [1]we will achieve risk-oriented and value-added audit, which will bring more economic benefits to enterprises.

2. Development direction of audit in big data era

2.1. Information integration

The construction of auditing informatization should be standardized and uniformly designed, which
creates the basic conditions for auditing to obtain large data and carry out large data analysis. Information integration not only benefits the objective factors of internal audit inspection, but also provides favorable conditions for the development of audit analysis towards subjectivity, collectivity and trend. Information integration can solve the barriers between audit information and enterprise information, which will solve the situation of audit system division. [2] By actively playing the role of mutual cooperation and sharing of audit-related information, we can prevent the phenomenon of isolated audit information.

2.2. Intelligent analysis

The storage and analysis technology of big data is a new type of audit technology, which promotes the reform of audit. Through modern information technology, internal audit institutions can continuously expand the sources of information, which will gather more intuitive, more original structured and unstructured data of internal and external audit-related information. By building dynamic service "resource pool" through cloud computing, [3] we can carry out remote massive data audit analysis. Through the analysis technology of big data, we can improve the function of audit analysis. The development direction of risk audit analysis is relationship analysis, trend analysis, potential analysis, etc.

2.3. Strategic application

Audit informationization under big data environment is not only a tool of internal audit work, but also an extension of ideological strategy to improve the operation of the organization. PricewaterhouseCoopers predicts that the auditing department will have three major responsibilities in the future, including continuous auditing, management auditing and anti-fraud auditing. We should pay attention to the risk of organizing business activities. Through the continuous audit of risk management, we can change the mode of internal audit management. Massive information integration and strong intelligent analysis ability are the development direction of internal audit management mode in the future. [4] Internal business financial data collection has broken the information barrier. Big data technology provides quality assurance for the trend and forecast of business activities. Internal audit institutions should comply with audit testing and risk assessment, which is the planning of audit projects. Through risk audit analysis, we can judge the effectiveness of enterprise risk management, which provides suggestions for risk prevention and response. Therefore, the internal audit organization has changed from the role of control and supervision to a strategic partner of management.

3. Problems of internal audit in big data environment

A total of 1000 questionnaires were issued, and 961 questionnaires were valid, with an effective rate of 96.1%. The specific analysis is as follows.

3.1. Increased risk of quality control

Large data technology can filter and analyze huge amounts of information, which increases the depth and breadth of data. Therefore, information risk will gradually increase. Big data technology has affected the informatization of various subsystems in the organization, which has changed the operating environment of internal audit informatization. [5] Therefore, the risk factors change accordingly. The
original security early warning system of internal audit may not be able to meet the characteristics of large data generation, transmission, and application. With the complexity, relevance and comprehensiveness of various risks arising from large data, we must build and improve the security early warning system, which lays a safe, reliable, compliance and confidentiality foundation for the operation of the internal audit big data information platform. According to the survey results, the main problems are the poor safety early warning system and internal control system, accounting for 72.6% and 66.3% respectively, details are shown in Figure 1.

![Figure 1. Increased risk of quality control](image)

### 3.2. Unsolidified internal audit system

At present, the phenomenon of "information island" has not been completely eliminated in the transmission and sharing of data information, which seriously hinders the construction and construction of large data information platform for internal audit. Therefore, the internal audit of big data is facing some difficulties. It is urgent to reconstruct the audit process. It is very important to connect the subsystems into a unified whole. [6]Data collection, information resources, transmission, collation, analysis and other processes are smoothly implemented throughout the system, which will play a cornerstone role in internal audit. According to the results of the survey, the most important problem is that the audit process and software system are not updated, accounting for A and B respectively, as shown in Figure 2.

![Figure 2. Unsolidified internal audit system](image)

### 4. The strategy of internal audit integrating into big data age

#### 4.1. Create a cloud audit platform with large data processing ability
The key problem hindering the development of the big data era is the mobility and accessibility of data. We should build a cloud audit platform with the help of enterprise information department, which will give strong support to all kinds of audit business and management. The audit data section of cloud audit platform should have the following functions, such as real-time acquisition, efficient management, comprehensive sharing and flexible search. In the audit application section, we should have the functions of automatic continuous monitoring and intelligent data analysis of various information resources. In the aspect of audit management, it should have the functions of intelligent management of audit steps, expert improvement basis and result sharing. Through the information department, we can build a cloud audit platform with high efficiency and large data processing ability, which is a powerful support for internal audit work of enterprises. By helping auditors audit, we can make the audit results more accurate and reliable.

4.2. Building a data-driven internal audit system

In the establishment of auditing model system, we should take the idea of information business management as the basis. Through the establishment and improvement of large data processing, analysis and application of audit methods, we can constantly learn and absorb advanced and excellent audit concepts, models and tools. At the same time, we can gradually abandon the relational, solidified data analysis work. By constantly adding data analysis tools, we can screen out valuable data, which will prevent and control risks and risk-inducing factors. With the establishment of internal audit technology and method system, we can realize that internal audit work has a system to follow, which will more standardize the internal audit work.

4.3. Establishment of internal audit system guided by information

With the help of information system, we can set up a lot of audit planning work, such as formulation and adjustment of control, allocation and processing of audit resources, monitoring of audit links and so on. Through the intellectualized overall adjustment and dynamic adjustment, we can accurately and reliably manage and control enterprise risks. Through the construction and improvement of information guidance, the internal audit operation system will be able to reasonably and effectively improve the efficiency of internal audit, which will be conducive to improving the quality and level of the overall internal audit of enterprises. If there is no such system, the enterprises will not be able to carry out the corresponding audit work in real time and effectively. At the same time, enterprises will not be able to provide valuable audit recommendations in real time, and the role of audit will not be fully played. Therefore, it is imperative to establish an information-guided internal audit system.

5. Conclusion

Internal audit in big data environment is not a simple task, it involves a wide range of content. Therefore, we must attach great importance to it and should not be neglected. Systematic and scientific management is an important guarantee for internal audit. When implementing internal audits, big data technology should be fully utilized to integrate business information. Through the efficient data analysis of science and technology, we can deal with the internal problems of enterprises. We should control the basic process in order to optimize the allocation of resources. Through the establishment of a sound internal audit system, we will develop a sound enterprise risk assessment system, which will meet the production and operation needs of enterprises. By determining the direction of scientific development, we will...
maximize the benefits of production and operation of enterprises.

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