Exploring the transformation and development of enterprise internal audit in the era of big data

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ABSTRACT

With the arrival of the era of big data, computer information technology is widely used in auditing, and the traditional auditing concept and auditing technology means are thus greatly impacted and influenced. As one of the supervision and management departments, internal audit institutions need to continuously promote the digital transformation and innovation of internal audit with big data as the core in order to achieve high-quality and high-efficiency internal audit and ensure the good realization of the expected objectives of internal audit. This paper discusses the significance of internal audit transformation and innovation, analyzes the problems in the implementation of enterprise internal audit in the era of big data, and deeply explores the optimization path of enterprise internal audit in the era of big data, so as to better ensure that enterprise internal audit can adapt to the current development trend of the era of big data.

Keywords: Big Data; Internal Audit; Transformation and Innovation

1 INTRODUCTION

With the advancement of accounting informatization process, the internal audit of enterprises gradually develops in the direction of intelligence, standardization and process. How to do a good job of informationization innovation and reform of China's audit work, master and use big data technology, and achieve the goal of improving the degree of informationization of audit work by combining the audit work and the use of big data technology in a unified way, is also a high concern of China's audit staff at this stage. Therefore, it is extremely important to explore the internal auditing work of enterprises in the era of big data.

2 ANALYSIS OF THE PROBLEMS OF DIGITAL TRANSFORMATION OF INTERNAL AUDIT IN BIG DATA ENVIRONMENT

2.1 Internal audit system is not perfect

With the process of enterprise informatization and the gradual deepening of risk-oriented management concept, the traditional single business type has been difficult to meet the development needs of modern enterprises. Therefore, enterprises need to improve efficiency and effectiveness by repositioning organizational structure settings, optimizing resource allocation and performance assessment, etc [1]. In addition, enterprises also need to clarify the importance and necessity of internal audit department in the big data environment, so as to develop an internal audit system system suitable for the development of the company.

2.2 Lack of digital technical support for internal audit

In the practice of internal audit, enterprises lack the support of digital technology, which makes it difficult to find valuable reference basis from the massive data. Enterprises fail to optimize audit models and lack scientific analysis and proper storage of audit data [2]. Companies lack effective supervision of internal audits, and it is difficult to monitor the actual implementation of internal audits in each department in real time, and there is a single way to process data, so that potential risks cannot be accurately predicted.

2.3 Audit concept is relatively lagging behind

Scientific and effective audit work concept is an important prerequisite for building a reasonable audit process and implementing an effective audit model. In China, since the development stage of the audit work, have long been in the low information level stage, and scientific and effective, up-to-date audit concept is to ensure that the relevant audit units are fair and effective reasonable basis [3].

Some enterprises follow the traditional lagging audit concept, not adapt to the audit with digital characteristics. Enterprises fail to dig deeper into the value contained in the audit culture, lack positive guidance on the values of internal auditors, and fail to guide them to innovate the audit mindset. Internal auditors lack good digital thinking, and lack the flexible application of big data technology in the process of carrying out internal audit work [4]. Internal auditors lack real-time attention and comprehensive examination of the dynamic changes in the audit environment, and fail to change their own audit philosophy in a timely manner, making it difficult to scientifically analyze and effectively avoid various audit risks. Internal auditors lack problem orientation, making it difficult to grasp the focus of internal audit work; lack of value orientation, making it difficult to promote internal audit to give full play to its value role and provide assistance to achieve corporate goals; lack of risk orientation, lack of accurate grasp of audit risks and effective control.

2.4 Lack of composite internal audit talents

The establishment of internal information system is the first step of internal audit informatization, and whether this information system can play the expected role depends largely on the auditors of the operating system. At present, there are few professionals in the audit system who can adapt to the development of modern enterprise internal audit informatization, and the internal auditors of enterprises may not come from audit professions, so they do not have in-depth expertise in auditing and cannot see the essential content through the surface, and cannot make professional treatment for most of the operations, which makes the quality of internal audit a hidden problem [5]. Therefore, despite the development of big data in the current stage of economic and social development, and once the lack of composite audit work talents, it means that the road of innovation and reform of audit work information will be challenged as never before.

2.5 Lack of independence of internal audit

In the big data environment, the work content, scope and schedule of internal auditors have changed greatly, making it impossible for them to carry out various operations independently. Internal auditors' audit activities need to have good independence in order to ensure that the audit scope is broad, audit actions are not restricted, audit opinions or decisions are implemented, and audit recommendations are properly adopted [6]. Since internal audits in enterprises often do not have separate branches, they are scattered in different functional departments, do not have the ability to act independently, and are easily swayed by interests, which leads to unfair manipulation of internal audit results and failure to provide unbiased audit reports[7]. This leads to unclear key leaders of the department, unclear division of

authority, and the independence of the internal audit organization cannot be guaranteed to conduct relevant audits independently, resulting in risk-oriented internal audit not playing its proper role for company management.

3 OPTIMIZATION PATH OF DIGITAL TRANSFORMATION OF INTERNAL AUDIT UNDER BIG DATA ENVIRONMENT

3.1 Strengthen the construction of institutional system and improve data auditing standards

The first task of audit innovation in the context of big data is to continuously strengthen the system construction, use the system construction to find out the shortcomings of the audit work, and constantly improve and perfect. Secondly, the data research and analysis of auditing must be held regularly to deeply analyze and explore the audit mode and processing analysis mode used in the audit project of big data, and deepen the theoretical research on auditing work to achieve the purpose of improving the innovation level of auditing work [8].

In addition, to strengthen the risk-oriented management concept and methods, so as to enhance the internal audit staff for risk awareness, information security awareness and control capacity building, so that they realize that the internal control system is directly related to the normal operation of an organization and assume the corresponding responsibility. Finally, strengthen the construction of audit team and improve the quality of auditors [9]. In the big data environment, internal audit is a work project that requires both professional knowledge and proficiency in using modern information technology tools to process and make comments and suggestions. And strengthening team building requires enterprises to pay attention to talent training and selection mechanisms, establish incentive and constraint systems, etc., to enhance internal control capabilities.

3.2 Provide digital technical support for internal audit

Enterprises need to strengthen investment in computer software application and maintenance, etc., increase the construction of hardware configuration, strengthen the construction of database management platform, establish a sound risk warning mechanism and internal control system system, and prevent potential risk factors from bringing losses to the company. Enterprises should build a high-performance analysis platform for audit data, so as to carry out digital internal audit and consolidate the basis for data analysis. Using technologies such as big data and cloud computing, we can efficiently analyze massive amounts of data, implement scientific analysis and effective application of various types of data, and uphold a comprehensive analysis of data from multiple perspectives [10]. Continuously optimize the audit model, enhance the efficiency and simplicity of the audit model, and use the audit model to analyze the data and store the data analysis results in the database properly, so that internal auditors can access them as needed.

3.3 Build big data audit concept to lead the new development of internal audit

In the face of constant changes in new things and the rapid development of new technologies, internal audit must change the traditional conceptual model, with big data thinking to lead the transformation and upgrading of internal audit units. First, the establishment of risk-oriented internal audit thinking. From a single business line risk to a comprehensive identification of associated risks, the development of relevant plans to implement the program, the implementation of the audit process, a comprehensive consideration of the audit environment, behavior and risk status, to grasp the full range of risk

dynamics. Second, establish the concept of predicting risk points. The use of online analysis means to form a full range of risk warning, rapid detection of internal audit process of suspicion, accurate positioning of risk points, predict the development trend of business and risk, and then effectively achieve the foresight and control of risk identification, and promote the orderly operation of the audit and follow-up work.

3.4 Optimize the training of audit professionals and enhance the professional competence of internal auditors

Internet and big data auditing has put forward higher requirements for the work, that is, to build up a composite audit talent team. In order to further realize the innovation of audit informatization, it should constantly meet the requirements of complex audit projects in the context of big data, build a professional team of composite audit talents, and constantly innovate the informationization of audit work with the help of professional audit knowledge and skills and the skilled use of cloud computing technology. Big data internal audit requires that systematic audit thinking must be established, and systematic audit thinking is based on systematic professional knowledge, not only proficient in the relevant policy system, but also proficient in business and familiar with the basic business processes. With the continuous development and progress of information technology and audit mode, improving the quality of auditors is the top priority.

3.5 Strengthen the construction of the regulatory system and standardize the behavior of big data auditing

In the big data environment, China's internal audit supervision still needs to be improved, and needs to strengthen the construction of internal control and risk management system of enterprises. First of all, we can establish the coordination mechanism of internal audit work with "three committees" as the main body, where "three committees" refers to the shareholders' meeting, the board of directors and the supervisory committee set up within the enterprise. Secondly, it is necessary to improve the legal standards related to the collection, management and utilization of big data [11]. In terms of data collection, storage, organization, database establishment, utilization and monitoring, further refine and standardize both the law and the standard. At the same time, the confidentiality requirements of big data should be strengthened to eliminate the concerns of audited units and to restrict the behavior of auditors. Finally, the internal audit quality monitoring and evaluation system should be gradually established. With the development of big data, the scope of auditing has been broadened, and the existing audit quality management methods and quality assessment system need to be constantly updated. Standardize the data acquisition and auditors' authority in the process of big data auditing to prevent potential audit risks that may arise.

4 CONCLUSION

In summary, the digital transformation of internal audit in the big data environment can enhance the adaptability to the audit environment and help to innovate internal audit. The problems of digital transformation of internal audit in big data environment are imperfect internal audit system, lack of digital technical support for internal audit, relatively lagging audit concept, lack of composite internal audit talents, and lack of independence of internal audit. In this regard, in the big data environment, enterprises should promote the digital transformation of internal audit by strengthening the system construction, improving data audit standards, providing digital technical support for internal audit, building a big data audit concept to lead the new development of internal audit, optimizing the training of audit

professionals, improving the professional capacity of internal auditors, strengthening the construction of supervision system, and regulating the behavior of big data audit.

REFERENCES

[1] Gao, J. (2022). Analysis of the Financial Internal Control Strategies of SME Based on the Background of Big Data. *Technium Soc. Sci. J.*, *32*, 352.

[2] Si, Y. (2022). Construction and application of enterprise internal audit data analysis model based on decision tree algorithm. *Discrete Dynamics in Nature and Society*, *2022*.

[3] Barr-Pulliam, D., Brown-Liburd, H. L., & Munoko, I. (2022). The effects of person-specific, task, and environmental factors on digital transformation and innovation in auditing: A review of the literature. *Journal of International Financial Management & Accounting*, *33*(2), 337-374.

[4] Bag, S., Rahman, M. S., Srivastava, G., Shore, A., & Ram, P. (2023). Examining the role of virtue ethics and big data in enhancing viable, sustainable, and digital supply chain performance. *Technological Forecasting and Social Change*, *186*, 122154.

[5] Geerts, G. L., & O'Leary, D. E. (2022). V-Matrix: A wave theory of value creation for big data. *International Journal of Accounting Information Systems*, *47*, 100575.

[6] Rosa, R., Rahayu, S., Yudi, Y., & Gowon, M. (2022, January). Internal Auditor Transformation Strategy in the Industrial Revolution 4.0 Era: Literature Review. In *Proceedings of the First Lekantara Annual Conference on Public Administration, Literature, Social Sciences, Humanities, and Education, LePALISSHE 2021, August 3, 2021, Malang, Indonesia*.

[7] Shah, T. R. (2022). Can big data analytics help organisations achieve sustainable competitive advantage? A developmental enquiry. *Technology in Society*, *68*, 101801.

[8] Chen, F. H., Hsu, M. F., & Hu, K. H. (2022). Enterprise's internal control for knowledge discovery in a big data environment by an integrated hybrid model. *Information Technology and Management*, *23*(3), 213-231.

[9] Wu, W. (2022). Credit risk measurement, decision analysis, transformation and upgrading for financial big data. *Complexity*, *2022*.

[10] Al-Taee, S. H. H., & Flayyih, H. H. (2023). Impact of the electronic internal auditing based on IT governance to reduce auditing risk. *Corporate Governance and Organizational Behavior Review*, *7*(1), 94-100.

[11] Alkaraan, F., Elmarzouky, M., Hussainey, K., & Venkatesh, V. G. (2023). Sustainable strategic investment decision-making practices in UK companies: the influence of governance mechanisms on synergy between industry 4.0 and circular economy. *Technological Forecasting and Social Change*, *187*, 122187.