Research on the problems of enterprise internal audit under the background of artificial intelligence

Guangxiu Zhou1*

1 Accounting School, Harbin Finance University, Harbin, Heilongjiang Province, 150030, China

*Corresponding author’s e-mail: 2009144@hrbfu.edu.cn

Abstract. With the progress of science and technology and the popularization and development of the Internet, emerging technologies such as big data, intelligence, mobile Internet, cloud computing and blockchain technology have been applied and promoted. Facing the new background, new situation, new changes and new requirements, enterprise internal audit is facing opportunities and challenges. The wide application of artificial intelligence, big data and other technologies can effectively improve the efficiency and quality of internal audit, but also bring many challenges to the development of internal audit. Internal audit should re-examine its own functions, and actively make adjustments in the stages of audit preparation, audit implementation and audit completion, so as to meet the development needs of the new era. This paper expounds the problems faced by enterprise internal audit under the background of artificial intelligence, and puts forward the methods to solve the problems. In order to provide reference for the development of internal audit, and truly realize the value-added role of internal audit for enterprises.

1. Introduction

Artificial intelligence can be simply regarded as the integration of human and machine. It mainly simulates human consciousness, self and way of thinking through computer, presenting a new state of human-computer cooperation, automatic operation, cross-border and multi-dimensional. This new technology is changing our way of life and living environment, such as smart home, unmanned convenience store, intelligent medical diagnosis and treatment, human-computer interaction, security monitoring and so on[1]. The application of artificial intelligence in audit can also be called smart audit. Smart audit not only brings the innovation of audit technology and methods, but also changes the traditional audit mode, and further improves the audit quality and efficiency. Internal audit is different from national audit and national audit Social audit, how to quickly promote the application of artificial intelligence technology in enterprise internal audit research is very important, but also the audit industry must put on the agenda of the important topic.

2. Development status of artificial intelligence

In the era of technological change, the internal audit department, as an important functional department of the enterprise, needs to master more and more science and technology. It can use big data analysis, cloud computing, artificial intelligence and other innovative technologies, skills and methods to carry out the audit work. PWC and Ernst & young have made a lot of exploration and Research on how new technologies affect internal audit work mode and promote the transformation of internal audit technology and methods. Leading internal audit organizations are good at using all
technical tools. Starting from the goal of internal audit, they apply artificial intelligence to audit to ensure that it matches the development of the enterprise and brings more benefits to the enterprise[2].

From the current development of artificial intelligence, China has certain advantages, such as policy guidance, the strong support of the government is the driving force of reform and development, from the State Council to the local government, they all treat the development of information technology with great enthusiasm, and concentrate their efforts to do a good job. Enterprises should make good use of this opportunity, change their ideas, use artificial intelligence and other advanced technologies to promote the development of internal audit, and then promote the healthy development of the whole enterprise. (Table 1)

Table 1. Popularity of information technology in leading internal audit Enterprises.

| Collaboration and interaction technology | Pussyfooter | Followers | Leader |
|----------------------------------------|-------------|-----------|--------|
| Data extraction technology             | 19%         | 43%       | 74%    |
| Data analysis and supervision technology | 17%         | 50%       | 48%    |
| Forecasting and automation technology  | 15%         | 52%       | 82%    |

3. Combination of artificial intelligence and internal audit

3.1. Advantages of artificial intelligence in internal audit

Big data, cloud computing and artificial intelligence are the development direction of current information technology applications, and their application scope and application scenarios are constantly expanding and deepening. However, the traditional audit methods have many problems, such as more tool restrictions, low sampling accuracy, tedious work, resource sharing, low efficiency and so on. Therefore, artificial intelligence audit makes full use of cutting-edge technical means, overcomes the problems existing in traditional audit methods, and improves audit ability, audit quality and efficiency. (Table 2) For example, the use of software running time, speed and other characteristics to solve the shortage of human resources, and can avoid manual errors; will be high-density, low-quality work to the machine to complete, the auditor from the heavy work of low value, pay attention to the higher value of the consultation part; Through the implementation of internal control evaluation, improve the enterprise internal control system, improve the operation process of enterprises, help enterprises reduce risks[3].

Table 2. Differences from traditional audit

| Comparison project | Traditional audit dilemma | Artificial intelligence audit solution |
|--------------------|--------------------------|---------------------------------------|
| Business Law       | Restricted to find problems | Solve problems quickly and accurately |
| Sampling proportion| Need high quality audit information | Reduce the workload of Auditors |
| Audit quality      | Low efficiency and low audit quality | Improve audit efficiency and audit quality |
| Resource sharing   | Resources cannot be shared | Improve internal control system and reduce risk |
| Audit efficiency   | Change to efficient and full participation in audit | All round sustainable and effective management |
3.2. Opportunities faced by internal audit of artificial intelligence

3.2.1. Opportunity. In the era of big data, data and information are fully shared. Auditors can collect internal and external information of the audited objects through various channels, quickly grasp valuable audit clues and evidence, reduce information asymmetry and reduce internal audit risk[4]. With the continuous development of artificial intelligence technology, internal auditors can use artificial intelligence algorithms such as random forest, neural network and regression analysis to deeply mine massive data, extract deep hidden risks, and make audit work more targeted. Machine learning and knowledge mapping technology can realize the knowledge management of audit experience and risk rules, build audit knowledge base system, establish active and real-time response intelligent risk control model, replace the manual processing and analysis of auditors, and relieve the pressure of lack of audit talents and knowledge reserve.

3.2.2. Strategies for seizing opportunities. Strengthen the construction of internal audit laws and regulations. Due to the rise of big data and artificial intelligence, more and more electronic businesses are encountered in internal audit. It is the most important task of internal audit to audit the collection, processing, storage management and legal compliance of electronic data, so as to promote the comprehensive analysis and utilization of data. It also puts forward new challenges and requirements for the internal audit of enterprises. The state should issue formal and clear laws and regulations to regulate the legality, attribution, processing and use of electronic data involved in internal audit, so as to provide legal basis for the legal development of enterprise internal audit. (Figure 1)

Figure 1. Countermeasures of enterprise internal audit under artificial intelligence

Build internal audit information management system. The traditional internal audit is gradually changing to artificial intelligence audit, and it is imperative to promote the construction of internal audit information management system. Internal audit information management system across computer science, auditing, big data science and other fields, its establishment and improvement is a complex project. Internal audit data analysis is fully combined with artificial intelligence technology,
and the problem of data classification has been effectively solved. For internal audit, the input layer of deep learning network is internal audit data. (Figure 2) Through the deep learning network model, the index data under the audit project is intelligent audit data analysis. At the same time, the internal audit contains a variety of structured and unstructured data, which realizes the full coverage of the audited objects. It is difficult to directly judge whether the audit data meets the evaluation requirements[5]. The data span a wide range of dimensions, which leads to the difficulty of determining the audit project. The deep learning network model has made a breakthrough in practical application. The extraction of information from pixel level raw data to abstract concepts has strong learning ability.

![Figure 2. Artificial intelligence audit data analysis model](image)

4. Conclusion
The internal audit of enterprises is constantly optimized and developed to a highly intelligent situation, which is mainly due to the increasing development and maturity of enterprise management mode. The application of artificial intelligence in internal audit is not only an opportunity but also a challenge. Only by constantly improving their ability, can internal auditors adapt to the internal audit work in the new era.

References
[1] Gu, BH.(2020)Application of blockchain technology in government audit. J. Finance and accounting.,3:51–59.
[2] Jiang, WL.(2019)Prospect of blockchain audit technology .J. Audit monthly.,12: 4-6
[3] Chen, GF.(2020)Application prospect of blockchain technology in water resources management. J. Water conservancy and Hydropower Technology.,6:11-16
[4] Zhou, GX.(2016) Analysis of the problems that should be paid attention to in the leaving audit of natural resources assets. J. Industry and Technology Forum.,22: 229-230
[5] WU,M.(2018) The impact of blockchain technology on natural resource assets audit. J. Cooperative economy and science and technology.,12: 158-159