Research on Information Auditing in the Era of Big Data—From the Perspective of Accounting Firms

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Abstract. Under the background of big data with rapid development of informatization, the scale of enterprises is expanding and the trend of accounting informatization is increasingly strengthened. Traditional auditing methods cannot meet the requirements of informatization development, and accounting firms will face new challenges. How to make full use of information technology, improve audit concepts, audit procedures, audit methods, enhance the core competitiveness of the industry, is an urgent problem to be solved by China's accounting firms. Based on the introduction of the concepts of cloud computing, big data, information audit, this paper finds out the problems existing in the information audit of accounting firms in the era of big data, and puts forward some countermeasures to improve the information audit of accounting firms, hoping to improve the information audit level of accounting firms and promote the healthy development of accounting firms and the CPA industry in China in the era of big data.

Introduction

New technologies such as big data, cloud computing and artificial intelligence are raising a new wave of technological revolution all over the world. The development of computer technology and mobile Internet has increasingly shown that informatization is not only a means, but also an environment for human survival. Many countries have successively upgraded the strategy of big data to the height of national strategy. The 19th National Congress of the Chinese Communist Party put forward many times the network power to speed up the construction of information technology. Facing the tremendous changes brought by the information revolution, the accounting firm industry should seriously consider how to face the challenges and seize the opportunities to enhance its information technology level and core competitiveness of the industry.

Related Concepts

Firstly, cloud computing. Cloud computing is a mode of increasing, using, and delivering Internet-related services, often involving the provision of dynamically scalable and often virtualized resources over the Internet. The National Institute of Standards and Technology defines it as a pay-for-use model that provides available, convenient, on-demand network access to a configurable pool of computing resources that can be quickly raised with little administrative effort or little interaction with service providers. Generally speaking, cloud computing is to use high-speed networks to connect high-performance computers scattered around the world to form a pool of computing resources, so that end users can enjoy the powerful computing capacity of the cloud on demand only by simple input and output devices.

Secondly, big data. It is believed that "big data" is an information asset and a super data set which is beyond the control of traditional computer technology and computer equipment. It comes into being with the development of computer and network technology. It has the characteristics of high speed, scale, diversity, value and authenticity. This technology has brought about tremendous changes, whether in the data, storage data or analysis of mining data and other aspects, are incomparable with traditional database software.
Finally, information audit. The so-called information audit refers to the audit business needs as the core, based on cloud computing and the concept of large data, information technology and audit activities will be integrated, using a service-oriented architecture, comprehensive application of various technologies to mass and multi-type data for rapid acquisition, dynamic processing, in-depth mining and real-time analysis, in order to achieve Audit work and audit management are all information-based.

Problems in Information Audit of Accounting Firms in the Era of Big Data

Although as early as 2011, the industry association has already passed the overall plan of the information construction of the whole industry, but as the backbone of the CPA industry, the action of the accounting firms is far from enough. At present, from top management to audit front-line staff, there is no concept of information audit, and the importance of information audit is not enough.

Firstly, the lack of information audit talents. In the process of implementing informationization, accounting firms are short of compound talents with both information technology and accounting professional knowledge. The construction of information audit platform has a great demand for compound talents. Under the pressure of labor costs, the accounting firms control the recruitment costs, do not have a reasonable training plan for employees, and arrange more small projects. employees do not get the training and learning they should have, and the staff turnover is large, which makes it difficult to unify the requirements and measure the information audit technology of auditors. Therefore, the insufficient attention of accounting firms and the lack of talents are the important reasons for the incomplete implementation of information audit.

Secondly, the audit method is rather old. Some accounting firms, especially in financial audit projects, lack competent auditors, low efficiency in carrying out specific audit work, and lack guidance and help from technical backstage personnel; lack professional audit software, does not form a set of appropriate information audit techniques and methods, and still use the traditional methods to deal with new problems. It cannot cope with big data business. The members of the project team only use the traditional techniques such as SQL query and slice connection, but they have not been able to apply the data mining technology to the actual work. In the audit process, auditors pay more attention to the project itself, rely more on audit experience, do not use scientific methods to understand the status and risk of the project, In the face of the overall informatization of enterprises, auditors still rely on experience to control risk, which is not only inefficient but also may lead to uncontrollable audit risk.

Thirdly, the audit demand has not yet been marketized and the industry system needs to be improved. In countries with mature market economy, auditing is based on the requirements of shareholders or auditees, charges to the demander, and is responsible to the reporting party. In China, most of the companies with real audit demand are listed companies. The number of listed companies in China is limited, but the number of accounting firms is so large that the audit firms are "Party B" in the true sense. Although the audit reports should be responsible for the shareholders, they should charge the auditees, and the corporate governance system is not perfect that leading to shareholders fails to exercise the right to choose accounting firms. In addition to listed companies, many auditing requirements, such as annual audits of foreign-funded enterprises, are mandatory and not market-oriented. As a third-party institution, accounting firms cannot conduct business in a neutral way, nor can they normally require service remuneration. For this kind of business, accounting firms have no motivation and space to improve service quality. Audit demand is not yet market-oriented, which leads to the imperfection of audit fees and other system models. This may be one of the reasons why the audit firms have not considered the audit methods, efficiency, quality as well as the lack of improvement and popularization of information auditing technology and methods under the rapid development of informatization.

Finally, auditing standards need to be revised. It is a consistent practice for auditors to use analytical procedures to obtain audit evidence. However, under the current risk-oriented auditing standards, analytical procedures only require auditors to use them during the establishment of audit
plans, or to perform analytical review procedures during the completion of audit work, even though the "Audit Guidelines for Commercial Banks" do not give detailed guidance to auditors on how to analyze the data. The formulation of audit standards is out of touch with the development of practice. The current standards stipulate the minimum procedures that auditors should implement in the audit process, and the auditors implement them according to the minimum standards. This leads auditors to use traditional audit methods to design projects that should be audited to control risks. These are the method is obviously insufficient to deal with the risks brought by information technology.

The Countermeasures to Perfect the Information Audit of Accounting Firms in the Era of Big Data

Firstly, introduce and train high-quality information audit talents. (1) Cultivate a team of interdisciplinary talents with information audit. Pay attention to the introduction of information technology talents, optimize the knowledge structure of the audit team, so that the auditors not only have rich business knowledge and skills, familiar with auditing standards, but also master computer knowledge and information technology, data processing and management technology; (2) Improve the information audit organization. Establish a data analysis team integrating multiple majors, give play to the advantages of different majors, expand the data analysis space from different perspectives and levels, and improve the efficiency of data analysis; A research group on informatization audit in specific fields is established to study the goals, methods and focuses of informatization audit in specific fields, or the topics that need to be solved or have significant practical value, so as to maximize the potential of innovation and provide valuable theories, technologies and methods for informatization audit. (3) Strengthen the training of auditors. Based on the business development and risk management requirements, the medium and long-term training plan is formulated to make the audit training more systematic, standardized and practical. According to different auditing management levels, auditing business areas and auditing project requirements, a hierarchical training mechanism is established to make auditing training more targeted, so as to meet the needs of information audit development.

Secondly, make full use of information technology to build audit platform. Due to the high cost of platform development, the industry should take the lead in organizing the construction of audit platform. It not only enables firms to use information audit technology to deal with risks, but also reduces the cost of each firm. Cloud computing can complete the processing and storage services of big data. At present, Baidu, Tencent, Google, IBM, etc. can provide cloud computing services, and with the development of information technology, the price of cloud computing services will become lower and lower. And because these cloud computing providers are generally giants of the information technology industry, the ability to maintain data security is far better than that of accounting firms. With the help of these cloud computing providers and the unified help of industry associations, building an interconnected cloud audit platform is the key to fully applying information technology.

Thirdly, improve auditing methods and processes. Accounting firms should use cloud technology to improve audit methods and audit processes. (1) Establish a private cloud of accounting firms to provide confidentiality and security guarantees for audit documents and data. nstall data acquisition software based on cloud technology to the auditee, and issue data upload requests during the audit project. The financial data of the auditees will be uploaded to the cloud through an encrypted channel and shared by the project team members. The data operation is completed in the cloud, and is presented in the client side of each project group member, which is analyzed and judged by the project group member, and then the calculation command is issued; (2) Project team members can communicate with the auditees through networking technology. So that they cannot go to the project site and let the auditor choose according to the actual situation and risk of the sub-project of the auditee. By setting up the audit program in the cloud audit system, the cooperation of audit work and data transmission are realized through cloud computing technology, which greatly reduces the labor cost; (3) Under the cloud audit process, the entrusted office is authorized to read cloud data,
and the project leader selects the appropriate personnel to audit according to the characteristics of
the project, or delegates part of the work to other accounting firms who are good at the work. Each
person's work realizes the specialized division of labor, reduces the intensity of the simple work of
the auditor, greatly enhances the audit efficiency, and improves the audit service quality.

Fourthly, improve the industry system and return to the market. Return to the market, including
the marketization of audit fees, the marketization of audit supervision, and the liberalization of audit
demand. Currently, the registration threshold of accounting firms is relatively low, resulting in the
emergence of a large number of small firms, audit fees are becoming lower and lower. However, the
demand of the industry is more administrative rather than market-oriented, coupled with the lack of
supervision on the quality of audit services, so there is a phenomenon of "bad money expelling
good money". Perhaps it is only by raising the entry threshold of accounting firms and
strengthening their supervision that the audit quality and fees can be improved and the healthy
development of the industry can be promoted. Build audit charge fund, the problem that needs to
solve is audit independence. Auditing fees are charged to the auditees, and there is no independence,
so it is impossible to improve the quality of audit services. The audit service fund can be established
to determine the firm through the selection of bidding and tendering, so that accounting firms will
have no worries when auditing, and at the same time, the public can evaluate and supervise the
service quality and let the supervision be marketized.

Finally, timely revision of auditing standards. Industry associations should timely study and find
out the disconnection between the standards and the practice, and timely revise the standards. In the
era of big data, the repair of the original specifications is likely to fail to meet the needs and control
the risks brought by big data. Many scholars believe that the big data era will subvert the auditing
industry, and the risk-oriented auditing emphasized by the existing standards may no longer be
applicable. Industry regulators may need to develop or update big data audit policies or guidelines.
Comprehensive auditing, cloud auditing, continuous auditing and other relevant auditing standards
as well as the formulation of technical standards are the urgent requirements of information audit.
The audit community should actively carry out research in related fields, formulate and update
relevant standards as soon as possible, and guide accounting firms in carrying out information audit.

Summary
The development of information audit is related to the development of the auditing industry. Under
the big data with rapid development of information, the core auditing technology and methods are
also changing. New information auditing technology and methods play a vital role in the
development of accounting firms. In this paper, the study of information audit of accounting firms is
an exploration of the development trend and direction of the audit under the era big data, It is
believed that with the perfection of the industry system, the revision of auditing standards, the
introduction and training of high-quality informationized auditing personnel, the construction of
information audit platform, and the auditing methods will be improved. With the improvement of
audit process, it has a certain positive significance for accounting firms to improve their information
audit level, promote the era of big data certified public accountants and the healthy development of
China's CPA industry, to better meet the challenge has certain positive meaning.

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