Research on the Application and Influence of Auditing Artificial Intelligence

Guang-huan BAI*
Nanjing University of Science and Technology, China
*Corresponding author

Keywords: Artificial Intelligence, Audit Industry, Application and Influence.

Abstract. The rapid development of artificial intelligence, from the Turing test of the last century to the depth of learning in this century, the emergence of robots facing the field of expertise has challenged the human society. For the audit industry, with the introduction of financial robots into the work field by the four international accounting firms, the business model of the auditing industry and the way the auditors work are faced with innovation. This paper introduces the present situation of the application of artificial intelligence in the field of audit services in the four major international accounting firms, analyzes the impact of artificial intelligence on the audit industry and the relevant auditing practitioners, and regulators who are responsible for the industry regulations. To take an in-depth analysis of the coping strategies.

Introduction
Throughout the world, the development and application of financial robot is showing booming trend, from March 2016, Deloitte first applied artificial intelligence to financial work, the remaining three have to follow up, the domestic development of financial robots are also steadily advancing. In June 2017, China's first financial robot "Cai Bao" successfully applied to the University's financial experiments. These events did not have the social heat caused by the AlphaGo man-machine-go war, but it was worth pondering for auditors who were directly threatened. The development of computer technology in the last century led to the disappearance of a part of the industry and occupation, the re-opening of artificial intelligence in this century will make most industries and occupations face the threat of disappearance? Human beings in this vast scientific and technological change is vested interests or self-digging graves, all disputes are constantly, but the introduction of artificial intelligence, such as the auditing industry, is a general trend, because the application of artificial intelligence of audit makes the low-level audit artificially liberated, which leads to a substantial improvement in audit efficiency and audit quality, and on the other hand, the audit business model can be changed. So, in the face of such an innovation trend, what should the practitioners of the auditing profession and other stakeholders do?

Overview of Artificial Intelligence
Artificial intelligence belongs to the category of technical science, which mainly through the human intelligence simulation, extension and expansion and development research to form a theory, methods, technology and application systems. In short, artificial intelligence is a computer system that can transform human wisdom into productive forces by means of technology. Through the application of artificial intelligence, the user can break the traditional information transmission process due to the transmission speed, cost and quality of a series of bottlenecks between the problems. If the machine for artificial intelligence is endowed with human intelligence, then as a research branch of artificial intelligence and machine learning is a method of artificial intelligence, machine learning and deep learning is a new milepost, it is necessary to support the technology of machine learning. The massive data provided by large data and the nearly unlimited computing power brought by cloud computing break the bottleneck of restricting the development of artificial
intelligence, and make the algorithm of deep learning be realized. And then, depth learning enables many applications of machine learning to be realized, and extends the scope of artificial intelligence research. Deep learning has been able to achieve a variety of applications, making it seem that all of the machine auxiliary functions are possible: unmanned vehicles, preventive health care and so on.

Artificial intelligence can be seen as a "container" of human wisdom, and the development of deep learning will expand the "container" infinitely until mankind can not predict it. Although artificial intelligence is the mechanization of human intelligence, but in the process of machine does not include the person itself built "EQ" part.

Current Status of Audit Artificial Intelligence Applications

In the era of information data explosion, the amount of data is growing at twice the rate every year, and the impact of globalization on business models is changing. In the face of the continuous business model, the audit staff in the audit work unit time significantly reduced, how in the existing time to improve the audit efficiency and ensure the quality of the audit is an urgent problem to be solved. The application of cognitive technology and artificial intelligence in the audit can help auditors to identify the key information in the range of the contract, the auditors will spend the time in reviewing documents released for more strategic issues of human intelligence.

Artificial Intelligent Audit System of Deloitte

Among the world's four largest accounting firms, Deloitte first introduced artificial intelligence into its auditing business and opened up the exploration of artificial intelligence. Deloitte's audit of the artificial intelligence system's workflow includes initialization, substantive testing and working paper generation of these three stages. At each stage, the artificial intelligence system automatically based on the auditor's prior requirements and the relevant knowledge stored in the system database, It divides several steps of reasoning and judgment, and examines the accounting data and other relevant information of the audited entity. It will automatically find out the existence of all kinds of errors, fraud, abnormal data and changes and other business related suspicious circumstances, presented to the audit staff by generating a list or audit opinion draft form. During the implementation of each phase, auditors can monitor the situation in real time through the man-machine interface of the system. Artificial intelligence system enables auditors to quickly calculate and make decisions on audit projects, maximize the production benefits of audit services and reduce audit risk. The Deloitte Artificial Intelligence Auditing System helps the auditors to audit by using the rapid and accurate characteristics of the computer, supplemented by the cognitive process of audit technology, and the contradiction between "audit efficiency and audit risk" is alleviated. Compared with the original system, Deloitte's artificial intelligence audit system in the face of a large number of audit evidence, you can in the shortest possible time, do extensive and detailed analysis and verification, In particular, audit evidence that can only be inspected by manual and time constraints can reach 100% coverage, which is significant for the reduction of audit risk and the improvement of the quality of audit reports.

Artificial Intelligent Audit System of PWC

Compared to Deloitte's exploration of the auditing of artificial intelligence systems, PWC is committed to adding artificial intelligence to the existing innovative data auditing system, Halo, to create value for its customers. PW C' Halo system allows all transactions to be consulted in real time, which will help improve the quality of audit testing and achieve effective risk assessment testing. The real-time audit test makes the project review process more stable. Based on the Halo system's built-in algorithm, the key items of the audit test are screened by visualization and benchmarking, and the auditor is more aware of the customer's business and contributes to the overall strategic recommendations of the client's business.
Brief Summary
E & Y and KPMG's audit of artificial intelligence system construction is also followed up, from the above Deloitte and PWC two audit of the application of artificial intelligence status, we can see that the application of audit intelligence is professional services and modern technology Combined with the trend of innovation, For the current application of the audit industry focused business scenarios: the need for artificial high frequency repetitive operation, manual operation is error prone, cross industry and cross sector needs timely automatic highly coordinated operations. The greatest advantage in the application of artificial intelligence in these auditing operations is the release of the functions of auditors who are trapped in the preparation of audit papers and other mechanical complications. They will provide them with more space and opportunities to enhance the keen judgment of the audit business, This is also the provision of professional and technical services accounting firm for the customer's value.

Risk-oriented auditing requires the auditor to no longer judge the real fairness of the financial statements issued by the management, and more is based on the strategy, business, finance and control risks of the enterprise's overall strategy and the corresponding countermeasures of the proposed, Auditing Artificial intelligence applications can reduce the amount of labor, cost savings, and labor costs that are spent on assessing the financial statements in real terms to improve audit quality and add value to customers.

The Impact of Application of Artificial Intelligence on Audit Industry
For the application of artificial intelligence, the consensus of the audit industry is through the application of artificial intelligence cognitive technology to achieve the purpose of improving the quality of the audit and improve the efficiency of the audit, and with the audit staff to promote innovation in the audit work mode to develop their own Auditing business of the keen judgment. At the same time, artificial intelligence is essentially a computer system, meaning that in its business processing efficiency accompanied by the face of external network attacks when the data security vulnerability, so the corresponding industry regulation needs to play a timely role. We will from the audit business supply and demand side, the audit staff, the audit industry regulators of the three aspects of the audit of artificial intelligence applications on the audit industry in all directions.

The Supply and Demand Side of the Audit Business

Audit Report Related Users. Under the wave of globalization, the technological revolution brings endless business model, large data and cloud computing background, the amount of data gathered in the enterprise obvious, The financial statements prepared by the enterprise are complicated, and the demands of the enterprise for the audit business are no longer limited to the audit opinion of the symbolic value of the authenticity and fairness of the financial statements, they expect to pay high audit fees can bring the same or value-added business results return, other audit report users also pay more attention to the audit report of the communication value.

Accounting Firms. The accounting firm is the recipient of the audit business and the application side of the auditing artificial intelligence system and the biggest change. Artificial intelligence in the large data and cloud computing based on the use of deep learning cognitive technology, so that the computer system is no longer just a simple data collection, entry, summary, and the implementation of "anthropomorphic" data analysis and decision making. As an accounting firm that provides technical professional services, it is necessary to keep up with the wave of technology and actively respond to explore the working mode under the background of artificial intelligence and develop the procurement equipment. The transformation of the audit business process, as part of the audit jobs were replaced by artificial intelligence, this has led to the breakdown of the division of labor in the annual audit of accounting firms, Therefore, the accounting firms need to re engage the auditors in the division of labor, rationally allocate and form a new pattern of division of
labor. Through the application of auditing artificial intelligence, with the decrease of labor cost and cross-department communication cost, the efficiency of audit and the improvement of audit quality, the risk of litigation caused by audit failure is greatly reduced and the competitiveness of the industry is improved.

**Audit Staffing Side**

Audit staff as the most direct impact of the audit of artificial intelligence system, on the one hand, for their own professional skills in the alternative challenges, on the other hand also highlights the unique ability to judge their professional independence. The application of artificial intelligence system makes the audit mode change, the original audit of the annual reports of listed companies is simple and manual, and the collection and processing of financial information are tedious and inflexible. Part of the job of the bottom of the auditors facing the "unemployment" or "transfer", the bottom of the auditors are mostly related to the audit graduates, they lack the audit work for the keen professional judgment, and belongs to the individual quality of the auditors The professional judgment ability is dependent on the accumulation of experience rather than the day of work. The arrival of the era of auditing artificial intelligence, the need for primary auditors to speed up self-improvement, and consciously develop their own audit strategy for the overall strategic decision-making.

For the senior auditors who have already had a keen job judgment ability, they need to adopt an open and positive attitude to learn new technology and knowledge in the face of auditing artificial intelligence. With the help of artificial intelligence, we can improve the risk- audit execution. Although the risk-oriented audit is based on the professional judgment of the auditor to assess the audit risk-oriented objectives to guide the audit of the whole process, but the application of artificial intelligence will affect the risk-oriented audit implementation of the two dimensions (the risk of material misstatement And check the risk) have a positive impact, and help the auditor to make the right and effective professional judgment.

**The Auditing Industry Regulators Side**

After the introduction of a new technology industry, the corresponding regulatory system constraints of the main and business model will change, the industry regulators need to introduce new technology for the corresponding regulatory system to update. We cut from the existing auditing standards in China to analyze the impact of the application of artificial intelligence on industry regulation. The existing auditing standards are risk-oriented, and quite a few of the audit criteria are for risk assessment and response and audit evidence. The application of artificial intelligence has a direct impact on the audit of these two parts, which makes the focus of risk-oriented guidelines change. For example, the application of auditing artificial intelligence makes the restriction of sampling audit broken, auditors in the process of substantive testing can use artificial intelligence to achieve the overall audit, audit sampling of the relevant criteria need to be updated.

Due to the application of artificial intelligence, data storage security attached to the computer system needs to be dialectical, cloud storage and artificial storage compared to fatal network security vulnerabilities and rapid data leakage, which is contrary to the principle of confidentiality of certified public accountants. Therefore, the need for the introduction of relevant network security regulations, artificial intelligence environment under the responsibility of the CPA appropriate division, on the one hand is the protection of certified public accountants, on the other hand can also promote artificial intelligence and audit industry better integration.

**Conclusions**

The arrival of artificial intelligence was the potential for the whole industry, the impact of the entire industry from the current four major accounting firms can be seen. Embracing innovation and
technology for the audit industry to bring a new look, at the same time, audit practitioners to their own professional judgment irreplaceable to hold on. Auditors who try to compound talents will have more energy to analyze the overall situation of enterprises, create value for customers and enhance the overall competitiveness of the audit industry.

References


