The Impact of Artificial Intelligence on the Accounting Industry

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ABSTRACT

Nowadays, artificial intelligence (AI) has penetrated into all walks of life and has a great impact on them. It brings certain opportunities and challenges to various fields, and the accounting industry is no exception. AI technology is like a double-edged sword. On one hand, it is conducive to the development of the accounting industry and brings certain opportunities for it. On the other hand, it is a major challenge for the accounting industry, which leads to adverse consequences, such as unemployed accountants and financial data leakage. In this paper, we probe into the impact of AI on the accounting industry, and provide strategies and suggestions to promote the better development of the accounting industry.

Keywords: *Artificial intelligence, Accounting industry, Unemployment, Accountant*

1. INTRODUCTION

In recent decades, artificial intelligence (AI) technology is sweeping the world, and human beings are entering the age of AI. For the financial practitioners in the accounting industry, it is necessary to set out a plan for the industry based on the perspective of future development. They should conform to the trend of the times and combine artificial intelligence with accounting work. But in the process of specific work, all aspects need to be considered. Specifically, it is necessary for practitioners to apply AI technology in accounting work to improve the quality of accounting work. Also, it is still needed to meet the corresponding challenges AI introduces and improve the quality and efficiency of accounting work.

2. ARTIFICIAL INTELLIGENCE OVERVIEW

Artificial intelligence (AI) was originally proposed by John McCarthy in 1955 during the Dartmouth summer research project [1], the original definition of which is the engineering and science to build intelligent machines. Essentially, AI is committed to making machines think and act like humans, carrying out deep learning and self-learning. Theoretically, it can mimic the human mind, draw conclusions, and be wise. Intelligence means that computers can process and collect relevant information, so combine their own knowledge and experience with existing experience to gain the ability to solve problems. AI refers to the fact that people usually input specific intelligent programs into a computer, and the computer system will solve problems in production, work, and life, by emulating the bio-neurons, synapses, and other essential neural components. AI is an emerging and comprehensive subject covering many fields, such as cybernetics, management, informatics, logic, mathematics, and so on. The United States was the first to apply AI technology in the field of accounting, which promoted the value of AI technology in accounting and financial management. Since then, the academic community has carried out a lot of research and exploration on the application and practice of intelligent accounting. With the application of AI technology in accounting and tax work, the establishment of AI applications in the financial field has been greatly promoted, and relevant technologies can be applied to the accounting industry, providing reliable technical support for the efficient development of accounting work [2]. Also, as a novel technology, AI brings problems and challenges to the accounting industry. Especially, AI may cause a high unemployment rate for low-level accountants and high data breach risks, and lead to higher requirements for financial and accounting practitioners.

3. THE APPLICATION OF AI IN THE FINANCIAL FIELD

Artificial intelligence is a product of the times, and it can also promote the development of the times. AI technology can instruct machines to do tedious, dangerous, or complicated work in place of humans, and it covers basically all aspects of people's daily life and work. After years of development, AI-related applications have obtained a high level of intelligence. So, AI technology has been widely used in business in recent years. For example, in the process of analyzing financial market conditions and forecasting trends in the financial industry, AI can process the related data and make decisions in a more efficient way with higher precision compared to human beings. Back in 2016, Deloitte already used AI technology in finance and introduced the "Deloitte financial robot" [3]. Although, in the beginning, the work performed by the robot is relatively simple, and this trial is only the initial combination of AI technology and the financial field. Later, the AI-based application shows its great potential, which carries out more advanced work and acts as a better replacement for human labor. For example, in accounting work, there are many accounting tasks with repetitive characteristics and high volume, which will cause a total waste of staff time and an increase in the cost of enterprise labor. AI technology can automate these basic, repetitive processes to improve work efficiency and understand financial risks based on big data analysis. Once it is detected that the financial risk is relatively large, AI technology will automatically carry out prevention and early warning. Moreover, AI technology plays a very important role in tax optimization or business income forecasting. With the development of the times, more companies tend to introduce financial robots and intelligent software in finance, make accounting work more intelligent, and keep up with the development trend of the AI era.

4. THE IMPACT OF AI ON ACCOUNTING WORK

4.1. Opportunities AI Bringing to Accounting

First, AI technology can improve work efficiency for accounting. Accounting work involves a lot of complicated data, handling them manually would take a lot of accountants' time. In traditional accounting work, there are a lot of processes, including manual bookkeeping, accounting, statistics summary, etc., which involve a lot of complicated sub-tasks [4]. In the era of AI, by using intelligent accounting technology, basic and repetitive accounting work can be automated, complex accounting processes can be dismantled, and accounting work efficiency can be improved. The application of AI in accounting can not only deal with simple data manipulation but also fulfill more complex data analysis

and mining tasks, which will make accounting work more intelligent and efficient.

Second, AI technology can improve the quality of accounting information. For enterprises, accounting information is the top priority, and its quality is particularly critical. Whether accounting information is accurate and fast or not is an important factor to measure the quality. In the past accounting work, most data are usually processed manually, and errors are inevitable, which is bound to affect the accuracy of accounting information [5]. In the era of AI, we can use intelligent accounting software and devices to carry out data processing, which not only greatly improves financial efficiency, but also makes accounting information more accurate as well as improves the quality of accounting information. Furthermore, for complex accounting information, AI technology can also process it, classify and retrieve it according to its importance or relevance, and quickly search for valuable data information. This process is very objective without the influence of subjective factors due by accountants. So, it can avoid the distortion of accounting information as much as possible, which is almost impossible in the era of traditional accounting.

Third, AI technology can reduce labor costs and reduce the burden on enterprises. In traditional accounting work, because the accounting work itself involves more basic and repetitive data processing tasks, it needs a large number of entry-level or low-level accountants. However, in the era of artificial intelligence, more accounting, auditing, and tax work can be completed by financial robots or intelligent software, which reduces the demand of enterprises for entry-level or low-level accountants, reduces the cost of human resources, and reduces the burden on enterprises.

Finally, in the application of AI technology, with the support of big data, AI can meet the high-end needs of financial modeling and computing by processing structured and unstructured data, so that the accuracy of data analysis and prediction has been significantly improved. With the help of AI technology, enterprises can comprehensively grasp their business status, understand their actual development, and make a scientific prediction on the future business benefits and risks. Considering the perspective of enterprise performance, the prediction carried out under the traditional manual operation mode has limitations, and the evaluation methods, as well as data used, are relatively single. The application of AI technology can derive knowledge from past historical data, generalize past experience, ensure the scientificity and effectiveness of the prediction, and increase the degree of intelligence in financial work. For example, the intelligent financial system developed by Deloitte has addressed the lag and limitations of traditional financial statements, incorporated non-financial data into the scope of

statements, met the needs of decision analysis, risk identification, investment evaluation, and other aspects, and provided great convenience for enterprise managers and external report users [6]. In the new era, with the support of AI technology, the development of intelligent financial services shows a clear upward trend. It can comprehensively collect data, carry out a feasibility analysis, promote the efficient implementation of prediction, judgment, and benefits evaluation, provide the basis for management decision-making, improve the efficiency of enterprise resource allocation, and enhance the value creation of the enterprise.

4.2. Challenges AI Bringing to Accounting

First, intelligent accounting puts forward higher requirements for financial and accounting practitioners. In the traditional accounting industry, most of the accounting work is basic and repetitive data manipulation, so the requirements for accountants are not high. In the intelligent accounting environment, in order to better use AI technology in accounting, higher requirements are put forward for accountants, who need not only to be familiar with accounting work but also to understand relevant computer knowledge. In this case, it is bound to have an impact on accountants. Due to the application of AI technology in accounting work, some manual work, such as bookkeeping and accounting, is done by financial robots or intelligent software in place of humans, resulting in a significant decrease in the demand for low-level accountants [7]. The remaining accountants must have certain IT and AI knowledge and can understand the intelligent accounting system. Otherwise, it is difficult for them to keep up with the pace of modern accounting and be competent for modern accounting work, so as to survive the fittest in accounting work.

Second, AI technology introduces financial data security issues to the accounting industry. During the process of applying AI technology to accounting, most of the work is finished by computers through networks, which is bound to have an impact on the security of financial data. When data flows through different components in the intelligent accounting system, a lot of information is transmitted on the network, and in order to prevent financial data leakage, it is necessary to take certain protective measures [8]. For an enterprise, financial data is very important. Compared with other information, hackers are more inclined to attack the financial database. If there are problems in the enterprise's protective measures, it is bound to cause data breaches or tampering to financial information, which will bring adverse effects to the whole financial system. At present, all enterprises attach great importance to the protection of financial information, but hacker attacks are not uncommon. Therefore, financial data protection is particularly important in financial management, and it is

necessary to take relevant measures to promote financial data protection.

5. THE IMPACT OF AI ON THE ACCOUNTING INDUSTRY AND OUR SUGGESTIONS

5.1. Improve the Professional Quality of Accounting Personnel

In the process of combining accounting work with AI technology, in order to improve the quality and efficiency of accounting work and optimize accounting workflow, there are higher requirements for accounting personnel. Both institutions and enterprises should pay attention to internal financial management and the introduction and training of new accounting talents. In the traditional accounting profession, there are a high proportion of entry-level or low-level accountants, and the introduction of AI technology may lead to their oversupply [9]. Therefore, it is necessary to strengthen the training of entry-level or low-level accountants and pay equal attention to IT or AI knowledge and financial knowledge, so as to cultivate comprehensive financial personnel and make them serve the accounting work in the intelligent accounting environment. Moreover, it is also necessary to strengthen the concept of lifelong learning for accountants. The 21st century is an informative and intelligent era, IT information technology and AI technology are developing very fast, and new updates keep appearing every day. So, it is necessary to keep persistent learning, only in this way, can accounting practitioners keep in the same direction with the development of the times and not be eliminated by society. What's more, enterprises should pay great attention to the shortage of high-level financial management talents, and increase the introduction and training of new talents, who understand both financial knowledge and artificial intelligence technology, so as to enrich the reserve of high-level financial management personnel, improve the quality and efficiency of accounting work and promote the further development of enterprises.

5.2. Pay Attention to Information Security Management

In the intelligent accounting environment, the operation and preservation of financial data need to go through the Internet or a local area network. In this case, it is worth considering to what extent financial practitioners should enhance the security of the network, ensure the security of financial data information, and strengthen the construction of the database. In order to get the most out of AI technology, it is necessary to be equipped with good computing infrastructure, such as safe and reliable databases, high-quality servers, and so

on. Both enterprises, institutions, or state organs, should increase investment in hardware equipment, introduce financial robots or intelligent agents, and establish corresponding security databases, so as to promote the better development of intelligent accounting. In addition, in order to better ensure the security of financial data, it is necessary to pay attention to the management of network information security. It is not only necessary to pay attention to the management of intelligent software and hardware, but also need to maintain the whole operating system, set up corresponding anti-virus software, check and anti-virus regularly, so as to ensure that the system can be used normally and make the application of AI technology in accounting work have a better software and hardware environment and work normally.

5.3 Reconstructing the accounting discipline system

The traditional accounting discipline mainly includes two aspects [10]: one is financial accounting, which is to accurately prepare financial statements and provide users with important information such as financial status and operation status; The other is management accounting, which is to provide important information for the management in practical work and promote the smooth implementation of departmental decision-making. In the era of AI, the form of financial accounting has changed to some extent, the intelligent financial system has been widely used, and the focus of accounting work has also changed. It is no longer accounting oriented, but management oriented. Nowadays, the rapid development of AI technology provides important support for the implementation of management accounting decision-making. The theory and practice of the accounting discipline can be combined with various AI technologies, which promotes the in-depth integration and development of the discipline. Data mining, intelligent decision support and other technologies are adopted to process accounting information, which improves accounting efficiency and reduces the labor intensity of accountants. At the same time, strengthen supervision, improve the authenticity and accuracy of financial data processed by AI tools, reduce the loss of financial data, and create excellent conditions for the development of the accounting industry.

6. CONCLUSION

To sum up, it is necessary to combine AI technology with accounting work, which can effectively improve the quality and efficiency of accounting work and promote the further development of the accounting industry. However, it is worth noting that AI technology has both positive and negative sides, which can not only improve the efficiency of accounting work and meet high-end requirements for aiding management decision-making

but also have some negative effects on accounting work, for example, causing unemployment of low-end financial practitioners or bringing data breach risks. Therefore, in the process of actual accounting work, it is necessary to make full use of the advantages brought by AI technology and adopt corresponding strategies to address the problems brought by AI technology at the same time. These strategies include paying attention to the security management of financial data, improving the capacity of existing financial staff, introducing high-level financial managers, etc. Moreover, financial practitioners should be good at turning the challenges AI has brought into opportunities and promoting the further development of the accounting industry and the development of enterprises.

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