

Development and Impact of Artificial Intelligence Technology in the Accounting Industry

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Abstract: This paper discusses the current application status of artificial intelligence (AI) technology in the field of accounting and its impact on the transformation of accounting functions. It also proposes measures to address the challenges and risks faced by the accounting industry under the background of AI. By analyzing the impact of current AI technology on the basic functions, expanded functions, and transformative functions of accounting, the paper points out the importance of structural adjustments in the accounting industry, emphasis on information security, and risk alertness. It also emphasizes the need for continuous learning and improvement among accounting professionals to adapt to the trend of intelligent development. Finally, it calls for strengthened legal supervision to ensure the healthy development of AI in the accounting field and provide guarantees for the advancement of accounting intelligence.

Keywords: Artificial Intelligence; Accounting Industry; Transformation of Accounting Functions; Risk Mitigation.

1. Introduction

In recent years, artificial intelligence (AI) technology has been increasingly widely applied across various fields, and industries are exploring how to efficiently and reasonably incorporate AI into their own sectors to enhance productivity and create more value. The accounting industry is no exception to this trend. In 2021, the Ministry of Finance issued the "Development Plan for Accounting Informatization (2021-2025)", indicating that some new technologies such as big data, artificial intelligence, mobile internet, cloud computing, the Internet of Things, and blockchain have been preliminarily applied in accounting work. Additionally, concepts like intelligent finance and financial sharing have also been promoted. The emergence of these information foundations signifies that the organizational forms of accounting entities have been optimized to some extent, and the functions of accounting work have been expanded. In the face of such rapid development, how the accounting industry and practitioners transition is a critical aspect in the study of accounting intelligence.

2. Application Status of Artificial Intelligence Technology in the Accounting Field and the Transformation of Accounting Functions

(1) Application Status

The current artificial intelligence (AI) technology has brought many conveniences to the accounting industry, aiding decision-makers in making optimal decisions. Firstly, machine vision technology facilitates the easy entry of electronic vouchers and can also verify their authenticity. Secondly, combining AI technology, the industry has developed various accounting software and systems, making it convenient for practitioners to use. Additionally, auditing, as an important part of accounting work, has been facilitated by the use of auditing software in current audit work. Taking

"risk assessment" as an example, previously, certified public accountants could only make decisions on significant errors based on financial statements and personal judgments, which heavily tested their professional capabilities, experience, and ethical standards. However, with the introduction of AI technology, data can be directly extracted and compared using big data, and intelligent technology systems can conduct relevant factor analysis. This saves certified public accountants time in screening and judging information, increases the accuracy and authenticity of information, effectively mitigates the risk of human intervention, and strengthens the objectivity and reliability of factual determination.

(2) Current Status and Trends of the Transformation of Accounting Functions

The basic functions of accounting, such as accounting and supervision, are undergoing transformation due to the development of AI technology, which also implies changes in the skill requirements for accounting professionals.

1) Current Status of the Transformation of Accounting Functions under the Development of AI Technology

The impact of artificial intelligence technology on the transformation of accounting functions mainly includes basic accounting functions, expanded accounting functions, and accounting transformation functions. Therefore, the current situation will be analyzed from these three aspects.

A. Basic accounting functions. The basic functions of accounting are accounting and supervision. According to the survey results in the article "Can Artificial Intelligence Accelerate the Transformation of Accounting Functions," from the perspective of current accounting practitioners, artificial intelligence technology will replace basic accounting function positions while also giving rise to new accounting positions and transforming the work mode of basic accounting functions. This means that traditional basic accounting positions will be eliminated, exacerbating the unemployment risk for accounting practitioners. It can be seen that more accounting basic functions will be handed over to financial robots for processing, which also means that new standards and requirements for the professional competence

and professional ethics of accountants will be introduced.

B. Expanded accounting functions. Expanded accounting functions mainly include planning, control, analysis, decision-making, forecasting, etc. According to the current survey results, most accountants believe that artificial intelligence technology rarely replaces accounting positions with expanded functions, but it will create more accounting positions. Nowadays, the most common manifestation of expanded accounting functions in accounting work is the integration of business and finance. During the transformation from financial accounting to management accounting, the vigorous promotion of the business-finance integration model can gradually blur the original work boundaries between the business and finance departments. The two departments can establish mutual connections based on the strategic objectives of the enterprise, greatly improve the utilization rate of various resources through full communication and coordination, successfully transform various business data into important and critical financial data under the premise of financial sharing, and actively use ERP systems to meet the needs of various management stages.

C. Accounting transformation functions. Accounting transformation functions include value creation, value assessment, uncertainty areas, etc., that accounting can address. According to current survey data, most people agree with changing the work mode of accounting transformation functions. From the perspective of financial management analysis, data is the key content of enterprise functional transformation. Therefore, more and more enterprises take digitalization as the starting point to help enterprises make correct economic decisions with the goal of maximizing enterprise value.

2) Trends in the Transformation of Accounting Functions under the Development of AI Technology

Based on the current situation of the transformation of accounting functions, it can be seen that the accounting industry is committed to improving and fully utilizing the role of accounting functions. The following will discuss the trend of accounting function transformation from three aspects, which has certain reference significance for how accounting talents should respond to the current situation.

A. Fully stimulate accounting functions. The foundational work of accounting is gradually being replaced by artificial intelligence technology, which requires accountants to change their working methods to fully stimulate and utilize accounting functions. Specifically, the focus of accounting work shifts from "post-accounting" to "future planning"; the management objects of accounting shift from "monetary units" to "multi-dimensional units"; the content of accounting work shifts from "regular bookkeeping and reporting" to "irregular value analysis and risk control"; financial reporting shifts from "traditional three major statements" to "multi-dimensional reports, process reports," and so on.

B. Establishing a business-finance integration mechanism. The integration of business and finance departments is gradually being actively improved, promoting the full play of service functions, improving enterprise organizational structure, concept recognition, and the integration of information systems, enhancing the construction speed, and strengthening the connection between the financial department and other business departments.

C. Strengthen financial management. Managers are increasingly strengthening their understanding of the important role of management accounting in financial

transformation, which will effectively enhance the importance attached to financial management, actively participate in financial management, and promote the improvement of financial management quality.

3. Challenges and Risks of AI Technology in the Accounting Industry

As AI technology continues to be integrated into the accounting industry, it inevitably brings certain risks and challenges alongside its benefits. These include potential job displacement for grassroots accounting personnel, risks to financial information security, and issues related to institutional frameworks.

(1) Displacement of Grassroots Accounting Personnel

With the application of artificial intelligence technology in the field of accounting, intelligent accounting software is gradually replacing basic accounting work, significantly reducing the demand for entry-level accountants and putting grassroots accounting workers at risk of unemployment and displacement. Currently, there is a shortage of management personnel in China's enterprises, especially those with compound talents possessing financial accounting and management accounting capabilities. Meanwhile, the new generation of artificial intelligence is being applied in various fields. To enhance the competitiveness of enterprises, it is necessary to emphasize the transformation of corporate financial accounting work into management accounting. If enterprise financial and accounting personnel fail to fully recognize this, it will be difficult to effectively improve the company's situation. Therefore, accountants need to continuously learn new professional knowledge, enhance their professional qualities, and keep pace with the development of artificial intelligence technology. In summary, as artificial intelligence technology is gradually applied in the field of accounting, basic accounting personnel face increasing work pressure.

(2) Risks to Financial Information Security

In traditional accounting informatization work, accountants need to understand relevant operating procedures, such as preparing accounting vouchers and financial statements, and determine the relevant steps, responsible persons, and supervisors in advance. This can to some extent prevent human fraud and facilitate the realization of data intelligence. However, this also leads to some problems. The network environment is highly unstable. For example, there is a significant risk in using electronic storage for accounting data. If the network is invaded by hackers or viruses, there is a risk of data loss or tampering, leading to the leakage of important financial information of the company.

The rapid computation of artificial intelligence is due to its combination with big data and continuous optimization. Big data contains millions of basic data, and the openness and sharing characteristics of network data enable artificial intelligence to process data more efficiently and quickly. With the development of accounting informatization, enterprises are bound to continuously update their hardware and software systems. In this process, enterprises will transmit accounting data externally, which increases the risk of information leakage. These risks are extremely detrimental to the healthy development of the company.

(3) Ambiguity of Responsibility in AI Application

In recent years, there has been rapid development in

artificial intelligence (AI) technology. However, in China, due to the relatively late development of AI technology, related regulations and systems are not yet fully established, which may lead to ambiguity in power and responsibility. Supervision of AI by relevant departments still lags behind, especially in terms of legislation, where regulatory development trails behind the progress of AI.

Firstly, accounting information encompasses various aspects such as a company's operational status, solvency, as well as customer information and feedback. When users access this information, their privacy may be compromised. Secondly, current AI is still in its infancy, capable only of basic information processing. As technology continues to advance, AI may acquire the ability for "independent thinking," including decisions regarding company strategies. If management fails to fully recognize this, AI may become uncontrollable or even act unlawfully.

4. Measures to Address Challenges in the Accounting Industry under the Background of AI

To address the challenges posed by AI technology in the accounting industry, it's essential to adjust industry structures, prioritize information security, and enhance risk awareness. Additionally, there is a need for legislative efforts to regulate the development and application of AI in accounting.

(1) Industry Structure Adjustment to Facilitate Professional Transformation

In the process of human economic development, accounting plays a crucial role. The entry of artificial intelligence (AI) technology into the accounting industry has brought about innovative changes in the internal functional boundaries, industry boundaries, and market boundaries of the current accounting field through technological means. As AI technology continues to penetrate the accounting industry, accounting professionals should shift their focus more towards management. They should continue learning and transition from traditional bookkeeping to the new model of management accounting, which integrates business and finance. By utilizing new technologies and combining them with their accumulated experience, they can effectively manage corporate finances. Guided by the strategic decisions of senior management, they can develop comprehensive financial plans that take into account market factors, social values, and the laws of corporate development, thereby assisting the company in achieving sustainable growth.

(2) Emphasis on Information Security to Promote Human-Machine Collaboration

While leveraging artificial intelligence (AI) technology to simplify accounting tasks, it's essential not to overlook the security risks involved. Although AI can rely on search engines for self-learning and automate financial analysis, it cannot update its own technology. Once there's a technological breakthrough, new hackers may exploit vulnerabilities in old technology, leading to the leakage of sensitive business information and causing economic losses for enterprises. In this scenario, developers should consider introducing autonomous update programs for systems, enabling deep self-learning not only at the operational level but also at the system level. Additionally, AI is currently incapable of fully independent operation, and the stages of human supervision and inspection cannot be eliminated. Embedding human-centric controls into information systems

places the ultimate control focus on humans rather than machines. By implementing both machine self-protection updates and human inspection of issues, enterprise systems can be safeguarded against intrusion, ensuring the security and stable operation of accounting systems and the entire enterprise infrastructure.

(3) Risk Alertness and Legislative Support

As artificial intelligence (AI) continues to permeate into people's lives, work, and studies, we are gradually beginning to face a series of issues stemming from the rapid development of technology outpacing related laws and regulations. In this context, prior to the introduction of AI technology or products in accounting, relevant laws and regulations, as well as regulatory bodies, should be established to prevent the entry of malicious software into the market, safeguard intellectual property rights, and ensure real-time monitoring and management of systems after entering and being used by enterprises. Regarding business ethics and issues of responsibility, on one hand, the role of corporate culture should be emphasized to avoid the emergence of detrimental views such as "economic valueism". Cultivating a positive corporate culture, dedicated to assuming social responsibility, contributes to the sound development of enterprises. On the other hand, expediting the formulation of relevant laws and regulations is necessary to effectively plan and constrain the development of AI in accounting from a legal perspective. In doing so, not only can the misguided development of AI in accounting be prevented, but also the interests of enterprises can be protected in the financial domain, aiding AI in better serving both enterprises and society, and creating more significant value.

5. Conclusion

The development of artificial intelligence (AI) is a manifestation of scientific and technological progress, an unstoppable trend in the evolution of our era. The introduction of AI technology has brought about significant changes in the working mode of the accounting field, driving structural reforms and transformation towards a healthier direction. However, vigilance is necessary against potential new problems and risks it may bring. At the enterprise level, for AI accounting to better serve businesses, it requires companies to implement AI technology in the accounting field within the frameworks of culture, values, and ethics. From the perspective of accounting professionals, the entry of AI into the accounting domain signifies that individuals cannot simply settle for being traditional accountants; they must strive to enhance themselves and skillfully utilize their industry experience in conjunction with existing intelligent systems, transitioning into a new type of accounting professional focused on management. Lastly, from a national and societal perspective, relevant regulatory agencies need to collaborate with legislative bodies to effectively supervise and manage the legal aspects of AI in accounting. Proactive legal planning is essential to ensure the rational development of AI in the accounting field.

Looking ahead, the era of artificial intelligence is upon us, and every industry is undergoing changes. The Chinese government has placed great emphasis on AI technology, repeatedly incorporating its development into government work reports and formulating the "Next Generation Artificial Intelligence Development Plan," laying out the blueprint for AI development in China. The intelligence of accounting is an inevitable trend in the development of the accounting field,

which is closely related to every industry. The integration of AI with accounting will undoubtedly be closer. It is crucial for AI and accounting researchers to stay at the forefront of theory and application, ensuring the healthy development of the accounting field and providing necessary support for the advancement of accounting intelligence.

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