

The Impact of New-generation Information Technology on the Accounting Profession

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Abstract. Artificial intelligence has led to the rapid development of new-generation information technology, transforming the accounting and management models of enterprises. Data analysis, cloud computing, big data, and artificial intelligence have significantly enhanced the automation level and efficiency of information processing, enabling people to shift from traditional accounting forms to more important strategic decisions. Therefore, the article explores how modern information technology affects enterprises and the accounting profession. And put forward strategies on how to adapt to this transformation. Through these strategies, accountants have cultivated digital and intelligent capabilities, and enterprises have better achieved the transformation of enterprise accounting through new information technologies. When repetitive work is taken over by machines, accountants can focus on more creative strategic analysis and value management. This transformation is not only a deconstruction of the traditional model but also a reshaping of the core values of the industry.

Keywords: Financial accounting, modern information technology, Digitalization and intelligence, Talent demand

1. Introduction

With the continuous development of new-generation information technologies such as artificial intelligence, big data analysis, and cloud computing, traditional accounting calculation and management models are undergoing profound changes. Modern enterprises are increasingly relying on digital technologies, emphasizing technological innovation, information management, and the optimization of human resources. Against this backdrop, artificial intelligence has taken on repetitive and fundamental tasks, and people need to adapt to the changes in this process to enhance its value in corporate decision-making. This paper systematically analyzes the core content of the new generation of information technology, explores its significant differences from traditional manual labor, and emphasizes the importance of data analysis, cloud computing, big data, and artificial intelligence. The new generation of information technology has significantly enhanced the automation level and efficiency of information processing, promoting the transformation of accounting functions from traditional record-keeping and reporting to strategic decision support. In addition, this article also explores the impact of modern information technology on enterprises and the accounting profession. Finally, this paper puts forward effective strategies for the development

of enterprise accounting in the digital age, emphasizing the importance of strengthening the popularization and construction of accounting information technology and the cultivation of enterprise talents and enhancing the digital and intelligent capabilities of accounting personnel. This article aims to provide theoretical references and practical ideas for enterprises to optimize the allocation of human resources and enhance the strategic value and sustainable competitiveness of financial management.

2. Overview of new-generation information technology

2.1. The development and evolution of accounting information technology

Accounting information technology, from the early stage of manual accounting before the 20th century, relied entirely on paper ledgers, manual recording, and calculation. However, this approach was inefficient, error-prone, and difficult to handle large-scale data. By the computerization stage of the 1950s to 1980s, with the introduction of computers, early accounting software (such as ERP systems) took on their initial forms. The rapid development of spreadsheets during the computerization stage (such as VisiCalc in 1979, which later evolved into Excel) simplified calculations and the generation of reports. The emergence of stand-alone accounting software has enabled the automation of accounting and report processing. From the 1990s to the 2000s, accounting had become informatized and integrated. Enterprise resource planning (ERP) systems such as SAP and Oracle integrated accounting with modules like procurement, inventory, and sales, enabling real-time data sharing. These systems utilized Internet applications, supporting remote access and collaborative work. From then on, cloud accounting began to sprout.

Since the 2010s, the era of cloud computing and big data has begun. Cloud computing accounting software such as QuickBooks Online, Yonyou Cloud, and Kingdee Cloud have been widely applied, providing flexible and low-cost cloud services. These cloud services are updated in real time, accessible from multiple terminals, and automatically backed up. Meanwhile, big data analysis is also on the rise. In application scenarios such as fraud detection and cost optimization, it mines trends through the analysis of massive financial data, supporting predictive analysis and risk management.

Under the current trend of the era of intelligence and automation, the most notable aspect is the continuous learning of artificial intelligence (AI) and machines. By using OCR (Optical Character Recognition) technology to identify invoices and bank statements and automatically generate vouchers, automated bookkeeping can be achieved. AI analysis of abnormal transactions can enhance auditing efficiency and achieve intelligent auditing. Secondly, blockchain technology is also constantly evolving to ensure the immutability of financial data, and simplify cross-border payments and supply chain reconciliation, such as the automatic execution of accounting recognition for smart contracts.

For future development, there will be a greater trend towards deep intelligence, and AI may further replace human judgment (such as tax planning and financial forecasting). More real-time accounting will also emerge, such as Internet of Things (IoT) devices directly triggering accounting transactions (such as automatic inventory entry and bookkeeping).

2.2. The connotation and key elements of the new generation of information technology

The new generation of information technologies mainly includes data analysis, cloud computing, big data, AI, and blockchain.

The process of cleaning, transforming, and modeling data through statistical, mathematical, and logical techniques to extract useful information, discover patterns, or support decision-making. One can know what happened in the past, such as the trend of financial statements; why did it occurred, such as due to abnormal costs; what might happen in the future, such as cash flow forecasts. Suggest actions, such as optimizing budget allocation. Predict bad debt risks through historical data and present financial performance using visualization tools such as Tableau. Cloud computing provides on-demand computing resources (such as servers, storage, databases, and software) via the Internet without the need for local physical devices and is usually delivered in the form of services. Resources can be quickly adjusted according to demand, and multiple users share the same infrastructure, reducing IT costs. From the perspective of accounting calculation, the application of cloud computing makes the processing, storage, and analysis of accounting data more efficient and secure. Enterprises can leverage the powerful computing capabilities provided by cloud services to conduct complex data analysis and real-time financial reporting. In addition, cloud computing supports remote mode, enabling cloud-based financial software to achieve cross-regional collaborative accounting. However, this places high demands on enterprise data security. Enterprises must provide strict security measures to prevent information leakage and loss. Big data refers to a large collection of data with diverse types, fast generation speed, and low value density, which requires special technical processing. It enables enterprises to gain a high level of insight, which is of great significance for optimizing the decision-making process and potential profit opportunities, as well as assessing risks and market trends. Big data technology can process in real time or near real time while enhancing the auditing quality and transparency of enterprises, as well as the quality and credibility of data.

AI is the technology and algorithms developed through the cross-integration of multiple disciplines such as computer science, mathematics, and statistics to simulate human intelligence, enabling machines to learn, reason, perceive, and make decisions, and complete tasks that usually require human intelligence. As an emerging accounting information technology, artificial intelligence, relying on its capabilities in machine learning, deep learning, and pattern recognition, can achieve automated analysis and anomaly monitoring when handling large-scale financial data, which helps to reduce human errors and improve the accuracy of data processing and auditing efficiency [1]. Blockchain technology is a revolutionary distributed ledger technology. Its core principle lies in recording data in interconnected blocks and ensuring the immutability of these blocks through encryption algorithms, thereby building a secure and transparent distributed database. This technology integrates multiple technologies such as distributed storage, peer-to-peer transmission, consensus mechanism, and cryptography. It records transaction information and various data through continuously growing data blockchains, ensuring the integrity and authenticity of the information [2].

3. Transformation of accounting functions

3.1. Traditional accounting processes

The traditional accounting process mainly relies on manual or single-machine software to be completed. It involves periodic, step-by-step, and paper-based operations. The core objective is to accurately record historical transactions and generate financial statements. From collecting original vouchers and verifying their legality, completeness, and accuracy to filling out bookkeeping vouchers and registering ledgers, to making adjustments and closing accounts at the end of the period, preparing financial statements and filing tax returns and archiving, each step is of great

significance. These processes ensure that accounting information can accurately reflect the financial status of the enterprise.

With the popularization of technologies such as cloud computing and AI, accounting work is shifting towards an automated, real-time, and data-driven model. However, the accounting principles in traditional processes (such as double-entry bookkeeping and the accrual basis) remain the underlying foundation of modern technology.

3.2. The impact of new-generation information technology on strategic decisions

The continuous development of new-generation information technology is profoundly transforming the financial management models and strategic decision-making methods of enterprises. Its core influence is mainly reflected in two aspects:

On the one hand, process automation technology is constantly promoting the efficiency of enterprises' daily operations. With the aid of advanced software systems and robotic Process Automation (RPA), repetitive tasks such as data entry, report generation, and order processing can be automatically completed by machines, significantly reducing manual operation costs and the incidence of human errors, thereby enhancing overall operational efficiency. On the other hand, technologies such as big data and artificial intelligence provide enterprises with powerful data processing and analysis capabilities, enabling them to extract valuable information from massive heterogeneous data. Through in-depth insights into market trends, customer behavior, and potential risks, enterprises can formulate more precise strategies and personalized marketing plans, effectively enhancing the scientific nature of decision-making and market competitiveness. For instance, by analyzing consumer behavior patterns, enterprises can optimize marketing strategies for different customer groups, significantly enhancing conversion rates and return on investment [1].

4. The impact of new-generation information technology on the development of enterprise accounting

4.1. Impact on the quality of accounting information

The development of new-generation information technology has had a profound impact on the quality of enterprise accounting information. It mainly emphasizes the application of information technology, such as artificial intelligence, big data, blockchain, and cloud computing. This not only brings opportunities to improve information quality but also new challenges. The following is the specific analysis:

Firstly, it enhances information reliability. Blockchain technology, through its distributed ledger and immutable nature, ensures the authenticity and traceability of transaction records, reducing the risk of human manipulation. The popularization of artificial intelligence has also brought about smart contracts, which automatically execute the certainty and measurement processes of accounting, reducing the risks of human error and fraud. Secondly, the information relevance has been enhanced. Big data analysis not only integrates financial and non-financial data but also achieves real-time data collection and processing through cloud computing and IoT technologies. This approach provides more comprehensive decision support information and shortens the lag in financial reporting. Then, the transparency of information disclosure has been optimized. By leveraging digital platforms, enterprises can disclose financial information in a standardized and normalized form to the outside world, enabling external stakeholders to obtain, compare, and analyze relevant data more conveniently. This improvement not only helps enhance the credibility

and market image of enterprises but also provides a more reliable decision-making basis for investors, regulatory authorities, etc [3]. A listed company began to build a financial shared service center in 2006, with the headquarters as the main body and subsidiaries as the auxiliary. By standardizing the requirements of financial accounting, and unifying the closing methods and the use of data platforms, the closing efficiency has been improved. The accounting work has been carried out 24 hours a day without interruption, truly achieving the "sun never sets" of the financial accounting system [4]. Pharmaceutical listed company also uses the financial shared service center platform to supervise and manage the financial information of its various branches [5].

4.2. Impact on accounting functions

The new generation of information technology has had a profound impact on the accounting function of enterprises, promoting the transformation of accounting function calculation from manual to intelligent. With the rapid development of information technology, the accounting function of enterprises is gradually transforming from the traditional model centered on the recording, organization, and reporting of financial data to the direction of informatization and intelligence [3].

The new generation of information technology is reshaping the accounting function, beginning to incorporate data-driven decision-making, predictive analysis, and so on. Accountants not only need to have solid financial knowledge but also master data analysis skills such as Python and SQL. Accounting work has shifted from traditional data entry and calculation to a greater emphasis on data analysis and strategic decision support. The rapid increase in global data volume provides rich analytical resources for accounting functions. Accountants are no longer merely recorders of data but have become analysts of enterprise data and providers of business insights [6].

The professional positioning of enterprises has also changed. The number of basic accounting positions has decreased, while the demand for positions such as management accounting and data analysts has increased. However, facing data security and ethical issues, cloud computing and shared data may lead to the abuse of customer financial information. If the training data for AI models is incomplete, it may cause unfair accounting estimates. There is also a risk of technological dependence. Excessive reliance on automation may lead to "paralysis," such as the lack of transparency in AI decision-making and the difficulty in explaining accounting policy choices.

4.3. Impact on the quality of accounting personnel

With in-depth application of information technology in the field of management accounting, the demand for management accounting talents with IT skills has also significantly increased. The traditional accounting responsibilities are gradually integrating more technical tasks such as data analysis, software operation, and system management, transforming into "compound" and "strategic" talents [7]. In the current context, the application of technologies such as data analysis, cloud computing, AI and blockchain is becoming increasingly widespread. Accountants should progress from "being able to use Excel" to "mastering data analysis and AI tools," and be proficient in using data analysis tools and visualization tools. Understand the logic of algorithms and be able to use AI models to predict cash flow and identify fraud. Be familiar with the role of smart contracts in supply chain finance and audit trails. In order to better participate in the overall strategic planning and implementation of the enterprise, accountants also need to learn cross-disciplinary knowledge, be familiar with the enterprise's business processes such as supply chain and marketing, and be able to provide decision support in combination with financial data. At the same time, one should possess

strategic thinking, participate in the design of the enterprise's business model, and provide a financial feasibility assessment. Accountants should remain sensitive to new knowledge and actively participate in professional training and continuous learning to adapt to the constantly changing market demands. Accountants need to aim for a three-dimensional capability model of "technology + finance + business" in order to maintain their irreplaceability in the future workplace.

5. Effective strategies for the development of digital and intelligent accounting

5.1. Development of digital and intelligent accounting talent capabilities

The accounting industry is undergoing a transformation from "accounting-oriented" to "digital and intelligent." Future accounting talents need to build a composite ability system of "technical ability + financial expertise + business insight." Accounting professionals not only need a solid foundation in finance but also must master digital skills such as data analysis and the application of artificial intelligence. It is necessary to cultivate data thinking and business insight, be able to extract valuable information from massive amounts of data, and provide support for management decisions. Accountants can continuously improve themselves by obtaining relevant certifications and participating in practical projects. Universities and enterprises should also collaborate, improve the training mechanism, and jointly promote the development of new accounting talents.

5.2. Promotion of the innovation of accounting systems

The government and relevant institutions should formulate complete accounting and auditing standards to provide clear guidance and guarantees for enterprises to apply emerging technologies, ensuring their effectiveness and security. To promote the construction of a standard system, it is necessary to establish a collaborative mechanism involving multiple parties, such as regulatory authorities, industry experts, scholars, and technology developers, to gather diverse viewpoints, enhance the systematicness and operability of standards, facilitate the adoption of new technologies within the industry, ensure the quality and security of the information processing process, and guarantee the accuracy and transparency of data. At the same time, given the cross-border nature of globalization and technologies such as blockchain, the formulation of standards also needs to fully consider their international applicability to promote the consistency and comparability of accounting information on a global scale and reduce potential risks and misuse [8].

To enhance the teaching effectiveness of the "Accounting System Design" course, it is necessary to break down the teaching content in detail and scientifically design the teaching links:

(1) Introduce actual case analysis. When teaching the knowledge point of "Analysis of Enterprise Financial Statements," introduce the financial statements published by local enterprises such as Yantianhua and Yunnan Baiyao. Through practical cases such as presenting the data of the statements and the financial analysis research reports of institutional investors on the enterprise, simulate the business strategy of the enterprise in actual operation and the interrelationships among enterprise financial statements. Help students apply the theoretical knowledge they have learned to practical situations, enabling them to analyze and design a financial reporting system suitable for the enterprise.

(2) Introduce legal literature and the latest industry development trends. Accounting system design is often subject to the constraints of laws, regulations and industry standards. When actually designing an accounting system, many factors need to be considered. It is not only necessary to take into account relevant legal literature and the latest legal provisions but also to appropriately

understand the current industry environment and development trends. More importantly, to understand the actual needs of enterprise management.

(3) Add practical links. In addition to the study of theoretical knowledge, we have also added practical operation links in classroom teaching. The instructor purchased some accounting vouchers. When explaining theoretical knowledge points in conjunction, they distributed vouchers for students to practice. During the practice of manual vouchers, they also used Kingdee K/3Cloud financial software to design actual accounting systems and prepare financial statements. Through practical operation, students can have a deeper understanding and application of the knowledge they have learned, and improve their practical ability and professional quality [9].

At present, information technology has been widely applied in all walks of life and achieved relatively ideal application results. Information technology has had a positive impact on enterprise accounting business and financial management, promoting the optimization of their functions and enhancing the status and role of accounting business and financial management in enterprise management. With the support of information technology, accounting business and financial management have participated in the decision-making activities of enterprise production and operation management in a new posture, further amplifying the functions of finance and accounting and enhancing their functional value, which has promoted the high-quality development of enterprises [10].

6. Conclusion

The development and transformation brought by the new generation of information technology to enterprises have also brought about brand-new changes to the accounting profession. Accountants need to possess higher professional qualities and data analysis capabilities. This can also be expanded to adapt to today's complex market environment. In conclusion, in today's digital economy era, the development and transformation brought about by the new generation of information technology to enterprises have also brought about brand-new changes to the accounting profession. Accountants need to possess higher professional qualities and data analysis capabilities to adapt to today's complex market environment. In my opinion, the technological revolution brought about by artificial intelligence in information technology will not be a "disruptor" for the accounting industry, but rather an "enabler" of value creation. When repetitive work is taken over by machines, accountants can focus on more creative strategic analysis and value management. This transformation is not only a deconstruction of the traditional model but also a reshaping of the core values of the industry-in the era of digital intelligence, the mission of accounting will be upgraded from "recording history" to "predicting the future."

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