

# Accounting Informatization from the Perspective of Big Data

## -- Opportunities and Challenges Coexist, Development and Innovation Coexist

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### Abstract

**With the improvement of social economic level and the development of information science and technology, in the era of big data, the traditional accounting industry has ushered in a trans century change. The development of accounting informatization has become a hot issue in the forefront of accounting research by many scholars, among which the discussion on the risks and prevention of accounting informatization is particularly prominent. In order to have a more comprehensive understanding of the opportunities and challenges faced by the development of accounting informatization based on the big data perspective, this paper explores from the economic level, the technical level, the institutional level and the talent training level, and proposes corresponding innovation and development strategies.**

### Keywords

**Big Data; Accounting Informatization; Opportunity; Challenge; Innovation.**

## 1. Background of Big Data Era

The rapid development of information technology and Internet technology provides a large amount of information, information and data. The explosive growth of information in all walks of life marks the arrival of the era of big data. Data has become the most valuable wealth code in the 21st century so far. According to IDC's latest prediction, the size of China's big data market is likely to exceed \$25 billion by 2025, more than double the overall size of \$11 billion in 2021. It can be seen that big data not only occupies more and more fields, but also plays an important role. In the era of big data, many industries focus on data as the basis of decision-making, and data becomes one of the most important references for decision-making. As Wikipedia defines big data, big data is information that helps enterprises make business decisions. From the perspective of enterprises, the main source of information to help decision-making is accounting information, so the development of accounting information in the era of big data is particularly important.

## 2. Development History of Accounting Informatization

Accounting information is the product of the development of the times. It is a process based on accounting computerization and the use of modern information technology to establish accounting information systems to improve the usefulness of accounting information. According to the research of Huang Changyin (2017), accounting informatization is mainly divided into four stages, namely, accounting software development and application stage (1979-1996), management system development and application stage (1996-2000), integrated system development and application stage (2000-2006) and embedded platform development and application stage (2006 to now). Over the past forty years, the development of accounting informatization has gone through the process from the realization of financial accounting

computerization of accounting information sharing within departments to the management accounting computerization of accounting information to improve the management and decision-making level, and then to the ERP system accounting informatization of industrial and financial integration, and now to the development of integrated management accounting information system.

### **3. Accounting Information Development in the Era of Big Data**

#### **3.1. Opportunities for the Development of Accounting Informatization in the Era of Big Data**

##### **3.1.1. Data Creates Value and Promotes Rapid Economic Development**

Blockage of information is the roadblock of economic construction. The imbalance of regional economic development leads to the social contradictions caused by the huge gap between the rich and the poor, resulting in a vicious circle of economic and social development. The arrival of the era of big data has overturned the traditional problems of economic development caused by the non-circulation of information. The commercialized development of the Internet platform, the trend of high popularity of the live broadcast and goods platform, and the innovative development of traditional industries enabled by the new business model have all witnessed the social and economic wealth created by big data. Data is the most valuable knowledge asset in the new era and the most valuable production factor. In recent years, the rapid growth of the big data industry has driven the comprehensive development of the national economy. According to statistics, the size of the big data industry has exceeded 1.3 trillion yuan in 2021. The economic foundation determines the superstructure. The big trend of economic development brought by big data promotes the development of accounting informatization and provides the material basis for the reform of the industry.

##### **3.1.2. Achievements of Cost Reduction and Efficiency Increase through Information Resource Sharing**

Big data is a new stage of information technology development. In the era of big data, cloud computing, blockchain technology, Internet technology and other development trends are very good. The development of accounting informatization is mainly reflected in the construction of information resource sharing platform, effective reduction of informatization costs, improvement of accounting efficiency and building of industry information transparency. In the era of big data, through the processing of massive data information, a systematic resource sharing platform has been created, which has realized the transparency and simplification of accounting information from collection to processing, greatly shortened the accounting information processing process, liberated the boring tasks of the traditional accounting industry, and greatly improved the efficiency of accounting work. At the same time, big data provides a convenient path for accounting informatization, avoiding a large amount of capital consumption in order to achieve accounting informatization. Instead, it realizes information sharing through cloud technology and monitors the authenticity of industry information.

##### **3.1.3. Government Development Planning Promotes Accounting Information Construction**

The Ministry of Finance has put forward guiding opinions on the comprehensive promotion of China's accounting informatization for many times. At the end of 2021, the development plan for the next five years was issued, and the overall goal of China's accounting informatization during the "Fourteenth Five-Year Plan" period was put forward. Among them, the establishment of accounting data standard system, the formulation of accounting informatization work specifications and software function specifications, and the improvement of safety management system and safety technology standards and other related task plans

have been clarified. The comprehensive support of the government has provided corresponding institutional guarantee for the construction of accounting informatization.

#### **3.1.4. Data Development Helps Cultivate New Accounting Talents**

The era of big data has brought a certain impact on ordinary accounting practitioners. The development of accounting informatization requires accounting practitioners not only to have solid professional knowledge, but also to be proficient in computer technology. However, the development of big data requires accounting practitioners to provide learning channels. In the era of big data, information sharing covers all fields, and knowledge sharing is all aspects of talent training. Facing the new challenges of the industry, practitioners and learners in the accounting industry can fully enrich their knowledge reserves and improve their skills through Internet resources. In addition, more and more digital economies urge the transformation of traditional accounting. The development of data also promotes the transformation of accounting talent cultivation, which is conducive to the cultivation of high-quality and complex accounting talents.

### **3.2. Challenges of Accounting Information Development in the Era of Big Data**

#### **3.2.1. The Imbalance of Digital Economy Restricts the Construction of Information Technology**

In the era of big data, the deep integration of the digital economy and the real economy has solved some traditional problems of unbalanced economic development. However, the imbalance in the development of digital economy itself has become an obstacle to information construction. Generally speaking, in first-tier and second-tier cities with rapid economic development, the development speed of digital economy is far higher than that of other cities; For remote urban and rural areas with slow economic development, the transformation of digital economy will be more sluggish. Therefore, the construction of accounting information will have an unbalanced development because of the unbalanced development of the digital economy. For some enterprises with strong economic foundation, it is easy to carry out accounting information construction, but for most small and medium-sized enterprises, the cost of accounting information construction is not enough to make up with income.

#### **3.2.2. Information Technology Lags behind and Even Data Security Risks**

The prerequisite for the development of accounting informatization is the sharing of information resources. However, at present, there are still many problems in China's accounting informatization sharing platform, such as imperfect construction, hidden dangers of information system security, and lagging software performance. Science and technology is a double-edged sword. Information sharing also brings about the problem of information security. Because data is valuable resources, information sharing places these valuable resources in a vulnerable environment, resulting in data leakage when hackers and malicious programs intrude. In addition, at present, the construction of China's accounting information resource sharing platform has not reached a mature stage, and various information system software are also in the initial exploration process. The contradiction between the urgent need for accounting information and the lag of technical support has become a major challenge for the development of accounting information in the era of big data.

#### **3.2.3. Risks of Non-standard Informatization and Imperfect Regulations**

The comprehensive development of information technology requires the establishment of a unified system and technical standards. Due to the lack of unified standards, the development of accounting information technology in China has been seriously hindered, both cloud computing services and information software development have been restricted. At the same time, the legal construction often lags behind the economic development. The development of accounting information in the era of big data is in the initial stage in China, so the failure to

improve the relevant laws and regulations system is also a problem and dilemma at this stage. The imperfection of the system and laws will bring opportunities for illegal elements, damage the interests of system developers, induce negative emotions of the development of information technology, and affect the progress of the development of accounting information technology.

#### **3.2.4. The Gap of High-Quality Talents is Counterproductive**

As we all know, due to the relatively low entry threshold of the accounting industry, the current situation of the development of the accounting industry in China shows that the primary practitioners are overloaded, while the senior practitioners are quite scarce. The Ministry of Finance mentioned in the "Talent Development Plan for the Accounting Industry (2021-2025)" that by the end of 2020, the number of people who have obtained the professional and technical qualifications for primary accounting in China has reached 6.72 million, but only 205700 people have obtained the professional and technical qualifications for advanced accounting. The structural imbalance of the accounting industry talent team and the current situation of the urgent need to improve the overall quality, coupled with the need to meet the requirements of personnel skilled in accounting information operation, the number of qualified compound talents is even less. In terms of the requirements of big data development for the accounting industry, the professional level of accountants will directly affect the improvement of work efficiency and increase the risk of errors in work accuracy. Accounting personnel can not skillfully use financial software, which is easy to cause information errors in the process of operation. This kind of error is like domino effect, which will have an irreversible impact on comprehensive financial management, and cause corresponding loss of property resources.

### **4. Accounting Information Development in the Era of Big Data**

#### **4.1. Promote High-quality and Balanced Development of Digital Economy**

The balanced development of the digital economy is the key to building a balanced economic growth pattern in the era of big data, and is also the necessary prerequisite to achieve the development of accounting information. In order to promote the high-quality and balanced development of the digital economy, we must help the balanced development of the technologies related to the digital economy, such as the research and development of core technologies such as chips and algorithms; Thirdly, it is to enhance the penetration balance of the digital economy in all industries; Finally, the application balance of digital economy among enterprises of different scales. The state should encourage and promote the development of digital economy in relatively backward regions and small and medium-sized enterprises, tilt the allocation of resources to these regions, create a good institutional environment, and strengthen efforts to promote the integration of digital economy technology and real economy technology, so as to implement the high-quality and balanced development of the digital economy.

#### **4.2. Improve Technology Research and Development to Ensure Information Security**

The pace of China's informatization construction is slower than that of some countries with higher technical level abroad, so the technical investment in the construction of accounting informatization is relatively small, which relatively increases the cost of the development of accounting informatization. Therefore, the key to realize the development of accounting informatization is to strengthen the independent research and development of relevant science and technology, the state guides and invests in the construction of scientific and technological innovation, and properly injects funds to support, and encourages capable enterprises to invest in the comprehensive construction of accounting informatization first. In addition, we should strengthen the information security under the Internet technology, ensure the confidentiality

of accounting information on the resource sharing platform, strengthen the information access barrier, strengthen the technical support to resist the illegal access to information such as virus programs, and reduce the risk of accounting informatization.

### **4.3. Improve Technical Standards and Laws and Regulations**

The construction of accounting information sharing platform is the basis for realizing the development of accounting information. In the face of the technical standard dilemma in the development of information technology, the government and relevant departments should attach great importance to it, gradually guide the formation of a complete and unified technical standard system for the reference of information development, give policy support to help the construction of accounting information sharing platform, and solve development problems. The relevant government should strengthen the awareness of risk prevention, analyze the existing relevant legal issues, timely update the legal issues arising with the development of information technology, and formulate corresponding laws and regulations to restrict them. By gradually unifying the development process, the rules and regulations and laws and regulations system for the development of accounting informatization will be formed.

### **4.4. Cultivate Compound High-quality Accounting Talents**

The era of big data puts forward new requirements for the functions of accountants. Considering the current situation of the qualification structure of accounting practitioners in China, we should strengthen the education and training of basic accounting practitioners, and use the Internet platform and information resource sharing to improve the knowledge structure and skill level of practitioners. Regularly guide accounting practitioners to carry out practical training of accounting informatization, exercise their practical skills, transmit their awareness of accounting informatization, and reserve talents for building a complete accounting informatization system. For the training of accounting professionals in school, actively guide the development of modern accounting personnel from traditional accounting personnel, from financial accounting to management accounting, open relevant information technology courses, set up assessment for accounting professionals combined with relevant skills and knowledge, and strive to cultivate complex high-quality accounting talents.

## **5. Conclusion**

Accounting information construction is an inevitable trend in the era of big data. Through in-depth analysis of the economic development level, technical development level, institutional development level and talent training level, it is concluded that the era of big data has created both favorable opportunities and corresponding challenges for the development of accounting informatization. Seize the opportunity, meet the challenge, comprehensively promote the high-quality and balanced development of the digital economy through the innovative development strategy, improve technology research and development and ensure information security, improve technical standards and improve laws and regulations, and cultivate high-quality accounting talents, so as to promote the realization of accounting information in the era of big data.

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