

Research on the Financial Informatization Construction of Enterprises in the Digital Intelligence Era

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Abstract: With the advent of the digital intelligence era, driving enterprises towards the direction of digital financial management transformation has become an inevitable choice to adapt to the new trend of development. The era of digital intelligence has brought massive data resources, making data collection, processing, and application more complex. Consequently, the construction of financial informatization in enterprises faces numerous opportunities and challenges. Based on a clear understanding of the concept and characteristics of the digital intelligence era, this paper analyzes its impact on the financial informatization of enterprises, explores the issues that arise in the construction of financial informatization in the digital intelligence era, and proposes corresponding strategies.

Keywords: The Digital Intelligence Era; Enterprises; Financial Management; Informatization Construction

1. Concept and Characteristics of the Digital Intelligence Era

Digitization refers to the process and state of transforming various forms of information, data, processes and activities into digital formats[1,2]. It goes beyond simply converting paper documents into electronic documents. Rather, it involves redesigning and optimizing business processes and enhancing service capabilities by using digital technologies and computer technologies. Thereby, it can achieve efficiency improvement, innovation and value creation. The digital intelligence era refers to using information technology to fundamentally transform social, economic and cultural activities. It is characterized by several key features. The first characteristic of the digital

intelligence era is the widespread adoption and application of information technology. This characteristic is the core of the digital intelligence era, encompassing the development and application of technologies such as the Internet, mobile communication, big data and artificial intelligence. The second characteristic of the digital intelligence era is data-driven practices. Data serves as the core resource in this era, where the capabilities of collecting, storing, analyzing and utilizing big data become crucial. Consequently, data-driven decision-making and innovation have become main stream. The third characteristic of the digital intelligence era is network and connectivity. The widespread adoption of the Internet and the interconnection of various devices have created a highly networked and interconnected world. This connectivity facilitates more convenient and rapid information transmission and sharing. The development of artificial intelligence is the fourth characteristic of the digital intelligence era. As a core technology, artificial intelligence drives the proliferation of intelligence, automation and smart decision-making. It encompasses various fields such as machine learning, deep learning and natural language processing. The final characteristic of the digital intelligence era is information security and privacy protection. With the advancement of information technology, issues concerning information security and personal privacy protection have become increasingly critical. Society needs to establish corresponding legal, ethical and technological mechanisms to safeguard users' rights and interests. In summary, the proliferation of digitalization represents not only technological changes but also a restructuring of organizations and societal structures. It promotes industrial upgrading and economic

development, and it is a crucial trend in contemporary economic and social development. Based on information technology, the digital intelligence era profoundly transforms people's work methods, social interactions, and so on. It brings unprecedented conveniences and challenges, and becomes a significant driving force in contemporary societal development[3].

2. The Impact of the Digital Intelligence Era on Enterprises' Financial Informatization

The impact of the digital intelligence era on enterprises' financial informatization is comprehensive. It spans from enhancing data processing efficiency to improving cross-departmental collaboration, and from enhancing decision support capability to strengthening security and compliance management. These aspects collectively bring new opportunities and challenges to financial management of enterprises. Effectively using digital intelligence technologies can help enterprises maintain a leading position and achieve sustainable development in competitive markets.

2.1 Digital Intelligence Technology Can Provide Real-time Data

The ability of digital intelligence technology to provide real-time data in enterprises' financial informatization management is highly significant, and it plays a crucial role in decision-making and operation in businesses. Firstly, digital intelligence technology enables enterprises to collect and process real-time data. Utilizing techniques such as IoT devices, sensors and data collection systems, digital intelligence technology can gather various financial data in real-time, including sale data, cost data, cash flow data, and more. Once collected, these data undergo rapid processing and cleansing, allowing for quick insight into current financial and operational conditions[4]. Secondly, digital intelligence technology enables enterprises to analyze and report real-time data. Real-time data which is collected undergoes processing through data analysis platform or data warehouse, which can generate instant report and analysis result. These reports help business managers gain real-time insight into financial performance, monitor cash flow, analyze cost structure, and other critical information. This capability

enables timely decision-making and adjustment in enterprises. Lastly, digital intelligence technology allows for data visualization and monitoring. Typically, digital intelligence technology provides data visualization tools and dashboards that present complex financial data in an intuitive manner. Managers can use these dashboards to monitor real-time trends in key metrics, promptly identify anomalies, and take appropriate actions as needed. In conclusion, the availability and accuracy of real-time data enable enterprises to make decisions more swiftly when enterprises face with market changes, customer demands or internal challenges. This capability not only enhances the agility of enterprises in competitive markets but also optimizes financial management processes, improves the scientific nature and efficiency of decision-making. Ultimately, this capability lays a solid foundation for the long-term development of enterprises.

2.2 Digital Intelligence Technology Can Enable Cross-departmental Collaboration and Integration

In the digital intelligence era, enterprises' financial informatization construction, supported by integrated platform and data sharing, extends beyond the finance department to involve the integration and sharing of information with other departments. This integration enhances cross-departmental collaboration efficiency and promotes overall operational coordination in enterprises. On the one hand, digital intelligence technology enables data integration and unified view. Digital intelligence technology can integrate and consolidate financial data from different departments by establishing data warehouses or data lakes, and it can bring scattered data together into a unified platform. This allows various departments to share and access the same accurate and comprehensive data. Thus, digital intelligence technology can eliminate information isolated island, and it is beneficial for comprehensive financial analysis and decision-making. On the other hand, digital intelligence technology can facilitate real-time updating and sharing of financial data[5]. When one department updates relevant data, other departments can immediately access the latest information. This real-time capability

helps teams coordinate their actions more effectively in collaboration, and helps teams make accurate judgments based on the latest data in the decision-making process. In summary, the application of digital intelligence technology in enterprises' financial informatization not only provides technical support for cross-departmental collaboration but also facilitates internal synergy among departments through means such as data integration and real-time update. This enhances overall operational efficiency and decision-making precision in enterprises. As a result, enterprises can maintain competitive advantages in fiercely competitive market environments.

2.3 Digital Intelligence Technology Can Support Intelligent Financial Analysis and Efficiency Improvement

The application of digital intelligence technology in enterprises' financial informatization not only supports intelligent financial analysis but also significantly enhances efficiency, helping enterprises better understand and manage financial data. On the one hand, enterprises can utilize digital intelligence technology for predictive analytics, trend recognition and generating visualized intelligent financial report. Using the technologies of artificial intelligence and machine learning, enterprises can conduct data mining on financial data. Through data analysis and the application of machine learning models, enterprises can predict sales trend, cost fluctuation, cash flow and other key indicators[6], and identify the trends of key indicators. Based on the advanced analytical algorithms of digital intelligence technology, enterprises can conduct refined analysis in financial risk management, identify risk factors and formulate corresponding risk response strategies. Simultaneously, digital intelligence technology can automate the generation of financial reports and present them through data visualization tools. This not only saves time and labor costs but also enhances the accuracy and comprehensibility of reports. Managers and decision-makers can quickly grasp the financial status and performance through intuitive charts and dashboards. On the other hand, enterprises can use digital intelligence technology to achieve the automation of financial processes, thereby improving

efficiency[7]. Digital intelligence technology supports enterprises in the automation of financial processes, such as automated approval process, real-time updating and integration of financial data, generation of financial reports, automated processing of payments and receipts, auditing and compliance check. These automated processes not only reduce human errors and enhance work efficiency, but also enable the financial team to focus more on strategic financial analysis and decision support.

2.4 Digital Intelligence Technology Requires Higher Levels of Security and Compliance Safeguard

Considering the sensitivity and importance of financial data, ensuring the security and compliance of digital intelligence technology in enterprises' financial informatization is crucial[8]. Firstly, companies must ensure the use of secure encryption technologies during the collection, transmission and storage of financial data. These include implementing the end-to-end encryption to prevent unauthorized access and theft of data during transmission. Secondly, implementing stringent policies of permission management and access control is a key step in ensuring the security of financial data. Only authorized personnel have access to specific financial data and system function, which effectively can reduce the risks of internal and external data breaches. Next, companies must deploy security vulnerability scanning tools and event monitoring systems to promptly detect and address potential security threats and vulnerabilities. Implementing real-time monitoring and response measure helps companies to identify and respond to security incidents early on. Finally, when companies implement the digital intelligence technology, companies need to strictly adhere to applicable laws, regulations and industry standards. This is especially important for handling financial data where companies must ensure compliance with relevant regulatory requirements, such as personal data protection regulations and financial reporting requirements. In summary, the application of digital intelligence technology in enterprises' financial informatization demands higher levels of security and compliance. This requires consideration and implementation from

multiple angles, including technology, management and legal regulation. That is, this is a comprehensive task to ensure the security of financial data and the enterprise's sustainable development.

3. Shortcomings in Enterprises' Financial Informatization Construction in the Digital Intelligence Era

3.1 Challenges in Technology Update and System Integration

In the digital intelligence era, companies face challenges in technology update and system integration when companies undertake financial informatization construction. Firstly, the speed and complexity of technological update are one of the challenges for companies. Technologies in the digital intelligence realm are continually evolving and advancing, such as artificial intelligence, machine learning, blockchain and other new technologies. Companies need to keep pace with these developments, but the rate of technological advancement outstrips the internal adjustment capability of company, leading to a lag in technology application. Additionally, the digital intelligence technology typically involves the integration of various technologies, such as big data platform, cloud computing and distributed system. The complexity of these technology stacks is a challenge for companies in selecting and integrating the right technology. Secondly, the difficulty and cost of system integration are another challenge for companies. Enterprises often have multiple independently operating systems and applications, and achieving seamless data integration and smooth interaction requires overcoming compatibility and interface issues among these systems[9]. Additionally, each company's business needs and processes may vary, thus, each company needs customized system integration and development. This increases the complexity and cost of the integration process, particularly when the company solves compatibility between legacy systems and new systems.

3.2 Issues of Data Security and Privacy Protection

As companies increasingly rely on technologies which includes big data, cloud computing and Internet of Things to optimize

financial informatization construction, data security and privacy protection have become one of their key challenges. Firstly, companies face challenges related to data breach and unauthorized access. Digital intelligence technology often involves extensive data storage and transmission, such as storing data on cloud platform or transmitting data over network. Therefore, in order to ensure data security, enterprises face the following important challenges. One is how to ensure that data is encrypted during transmission and storage to prevent data breach and unauthorized access, and the other is how to manage access to sensitive data for both internal and external users. Secondly, companies face the challenge related to compliance with data protection regulations. Different countries and regions have their own data protection laws. When companies use digital intelligence technology to handle data, ensuring adherence to the regulatory requirements of different countries and regions is a significant challenge.

3.3 Issues of High Cost and Return on Investment

On the one hand, companies face the challenge related to high costs associated with investment in technology facilities and infrastructures. Digital intelligence technology often requires substantial hardware (such as servers) and software (such as data analysis tools), and these hardware and software are very expensive to procure and maintain. Many companies opt to migrate data and applications to cloud platform for flexibility and scalability, but using cloud services and data centers also incurs ongoing costs, such as storage fee. On the other hand, companies face the challenge related to high costs associated with cultivating technical talent. Implementing digital intelligence technology requires professionals with relevant expertise, such as data scientists, system integration specialists and security experts[10]. The recruitment and training of such talent can be costly. At the same time, the development of digital intelligence technology is fast, and the upgrading of technology and tool is rapid. Thus, companies need to continuously invest in employee training and skill development to stay competitive and at the cutting edge, which can also result in significant expenses. Besides, the uncertainty

of return on investment (ROI) is another significant challenge for companies. Implementing digital intelligence technology is often a long-term investment, and it may take several years for a company to realize a return. In the initial stage, substantial funds may be required for technological infrastructure and talent training, which is particularly challenging for small and medium-sized enterprises. Moreover, since the effect of digital intelligence technology can be difficult to quantify and assess directly, companies face uncertainty when companies make investment decisions. Balancing investment costs with expected benefits remains a crucial challenge for companies.

4. Construction Path of Promoting Enterprises' Financial Informatization in the Digital Intelligence Era

4.1 Planning and Preparation Stage

Before embarking on financial informatization construction, companies need to conduct comprehensive planning and preparation to ensure that the project progresses smoothly and meets its intended objective.

Firstly, companies need to develop a digital strategy and vision. Companies must set strategic objectives for financial informatization, such as improving the accuracy of financial data, enhancing financial analysis capability and optimizing financial process. Additionally, companies must clarify their vision. That is, companies must define the role and position of financial informatization within the broader digital transformation of the organization, and specify the value they will bring to business development and decision support.

Secondly, companies need to conduct a current state assessment and needs analysis. Companies must evaluate the status of the existing financial informatization, including technological infrastructure, data processing capability and system integration. Based on this assessment, a needs analysis should be performed. That is, companies must gather and analyze the requirements of various business units for financial informatization, including suggestions from management, finance department, business unit and other stakeholders.

Finally, companies need to develop a financial

informatization plan. Based on the needs analysis and technical assessment, companies need to select the appropriate financial information platform and tool, such as ERP system, financial management software and business intelligence (BI) tool. The company must also determine its system integration strategy. That is, the company must select the approaches and methods to ensure effective integration of the financial information system with other key business systems and smooth data flow. Additionally, data architecture design is crucial. This involves designing suitable data structures and processes, including the plans for data warehouse development, data cleansing and ETL (Extract, Transform, Load) process.

4.2 Implementation and Deployment Stage

During the implementation and deployment stage of financial informatization construction, the focus is primarily on system integration, security management, training and transitioning to the new system.

Firstly, companies need to focus on system implementation and integration. In order to ensure project schedule and quality control, companies need to establish a project management team, and develop a detailed project plan, schedule and milestone. Companies need to conduct system development, customization and configuration, and companies need to adjust and optimize system functionalities according to business needs. Companies need to complete data migration and system testing, and companies need to ensure that the new system operates smoothly and data accuracy is maintained.

Secondly, companies need to focus on security and compliance management. In order to address risks such as data breach and hacker attack, companies need to implement stringent data security controls, including data encryption, access control and strategy of backup and recovery. Companies need to adhere to relevant laws, regulations and industry standards, particularly those related to personal information protection, financial reporting transparency and tax compliance[11]. Finally, companies need to focus on talent development and change management. Companies need to provide employees with the necessary training and support on financial informatization to ensure that they can

effectively use and manage the new system. In order to facilitate the acceptance and promotion of the digital intelligence culture, companies need to manage the organizational culture and employee transition process, including communication strategy, resistance management and motivational measure.

4.3 Post-implementation Operational Stage

During the post-implementation operational stage of financial informatization construction, the focus is on the operation, maintenance and continuous optimization of the financial informatization project to ensure stable system performance and ongoing value creation for the company.

Firstly, companies need to focus on system operation and support. Companies need to ensure that a dedicated team is responsible for the daily operation and support of the system, including security management, data backup and disaster recovery. Companies need to respond promptly to and resolve system issues to maintain system stability and availability.

Secondly, companies need to focus on performance optimization and update. Companies need to periodically evaluate the system's performance and efficiency, and make necessary optimizations and updates based on business needs and technological advancements. Companies need to keep track of and adopt new technological trends to ensure that the system remains current and meets the company's evolving needs.

Finally, companies need to focus on continuous improvement and innovation. Based on changes in business requirements and user needs, companies need to continuously improve and expand the functionalities and applications of the financial informatization project. In order to enhance the companies' competitiveness and innovation capability, companies need to encourage the team to innovate within the financial informatization domain and explore new applications and solutions.

5. Conclusion

In summary, strengthening financial informatization construction is a necessary requirement for enhancing management level in the digital intelligence era. It not only drives the advancement of financial management towards a more scientific and comprehensive

direction, but also helps build a robust and secure enterprise financial informatization processing system. However, in practice, there is still much room for optimization in the enterprise financial informatization construction. Therefore, companies should align with the trends of the digital intelligence era, thoroughly understand the core issues in financial informatization construction, and continuously refine the development pathways. This will lay a solid foundation for the high-quality development of enterprise financial work.

Acknowledgments

This paper is supported by Hunan Provincial Department of Education Scientific Research Project Outstanding Youth Project (No. 22B0642), Key Project of Hunan Degree and Postgraduate Teaching Reform Research Project (No. 2022JGSZ084), Hunan Natural Science Foundation Project Youth Fund Project (No. 2020JJ5106), Hunan Province Social Science Achievements Evaluation Committee Project (No. XSP19YBZ155), Youth Innovation Drive Program (No. 18QD03).

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