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The Construction of Financial Shared Service Center Model in Universities Based on Blockchain Technology

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Abstract: With the rapid development of internet technology, the construction of financial shared service centers in universities has provided a strong driving force for the high-quality development of universities. As an innovative technology in the Internet era, Blockchain technology is widely used in healthcare, finance, logistics, and other fields due to its decentralized, immutable ledger, transparency and traceability. According to the actual work of universities and the characteristics of blockchain technology, the paper integrates blockchain technology into the construction of the university financial shared service center model in order to provide reference for the innovative development of the university financial shared service center model by analyzing the challenges that universities have faced in terms of current financial work.

Keywords: Blockchain Technology; University Finance; Financial Shared Services

1. The concept and characteristics of blockchain

Blockchain originated in 2008 and initially entered the public eye as the underlying technology of Bitcoin. Simply, it is an open data storage in which everyone can participate and where every user on the internet can use unified standards to record and supplement information, and share it with every user through the internet. Blockchain has the following characteristics:

1.1 Decentralization

One of the main principles of blockchain technology is decentralization. Traditional systems typically rely on the central processing unit (CPU) to validate and manage data. In contrast, blockchain operates on a distributed computer network with each information node implementing self-management and verification thus enhancing resilience and reducing the risk of single point of failure.

1.2 An immutable ledger

The ledger of blockchain is immutable, which means that once data is recorded, it cannot be changed or deleted without the authorization of most network participants. The invariance of blockchain technology is achieved by encrypting hashes and linking blocks in chronological order.

1.3 Publicity and verifiability

As all data of blockchain is public, anyone can check relevant information through the data interface. This transparency ensures that all parties have access to the same information, thereby reducing the possibility of disputes and fraud. In addition, data validation is achieved through timestamp, effectively solving the problem of information traceability.

1.4 Smart contracts

Smart contracts refer to those that can be automatically executed According to preset rules and conditions. They are embedded in the blockchain and automatically executed when specific conditions are met, reducing human intervention and the need for intermediaries.

2. Problems in financial management in universities

2.1 Cumbersome processes and low work efficiency

The daily financial operations of universities often involve numerous academic departments and administrative departments, forming

a complex financial business network. The manual process, redundant data input, and lack of integration and summary between systems during reimbursement may all lead to low efficiency and errors. At present, the financial departments of universities have their own financial management software to handle daily business. However, the management of financial business process is still based on the fact that each department is responsible for the approval of specific matters at each level of authority. The lack of horizontal communication and coordination between different levels of authority is not conducive to the flexibility of financial business management.

There are risks to data security and privacy, and the degree of information sharing is low. Universities process a large amount of sensitive financial data, including faculty salaries, student tuition fees and research funding. How to protect these data from leaks and unauthorized access is a crucial issue. The centralized system currently adopted by universities may be susceptible to network attacks and data leakage, resulting in significant data security risks. At the same time, the financial work of universities is already related to various departments. Different departments on campus often use different systems, and there are many intersections between daily operations. The existence of information silos may prevent these systems from effectively communicating with each other. This lack of interoperability may hinder accurate financial reporting and decision-making, affecting the overall efficiency of the school's operation.

Low transparency in budget management. Traditional financial management systems may lack transparency in university budget management, making it difficult for stakeholders to track the flow of funds and ensure that funds are allocated according to budget. When preparing the next year's budget, each department of the school still has the idea of "allocating as much funds as possible", rather than starting from the specific working plan of the department, which leads to a lack of scientific budgeting. In addition, due to the lack of control and supervision in budget execution, project funds are paid out in urgency before they are collected, resulting in a high degree of randomness in fund expenditure. As a result, the historical data that can be referenced in the next year's budget preparation is inaccurate, resulting in a lack of accuracy in budget preparation.

The informationization level of financial personnel is not high, and there is a shortage of versatile talents in management. The construction of university financial sharing service centers requires high-quality talents with a foundation in financial and accounting management. The traditional financial work in universities places financial personnel in a single, repetitive, and cumbersome accounting task, which leaves them with no time to think about how to innovate in their work and how to better promote the integration of business and finance.

3. Construction of university financial shared service center model based on blockchain technology

Integrating blockchain technology into the construction of the framework of university financial shared service center can better solve the current problems in university financial management, strengthen financial control, further promote the integration of business and finance, and achieve value creation.

3.1 Simplify financial business process of universities and improve working efficiency

The decentralized characteristics of blockchain enable all nodes in the system to be highly autonomous, and peer-to-peer networks have openness, flattening and equality. Information transmission does not require hierarchical approval, meeting the requirements of financial shared services to break rigid barriers among departments and achieve collaborative cooperation. Meanwhile, the feature of smart contracts of blockchain is an automatic execution protocol with predefined rules. By utilizing this feature, simplify process nodes and ultimately shorten the time for completing business processing, ultimately achieving efficiency improvement. For example, invoice validation, expense approval and salary allocation can be automated based on predetermined conditions.

3.2 Ensure transparency and accountability in budget management

The transparent, immutable, and traceable nature of blockchain ensures that all financial transactions cannot be tampered with and recorded in chronological order. The entire lifecycle of funds can be recorded on the blockchain, enabling real-time collection of data information required for budget preparation. It can also monitor the budget execution of the entire financial process in real-time, ensuring consist-

ency and accuracy between budget control and actual execution. This helps to make individuals responsible for their actions, making sure the accountability and accurate reporting. Business stakeholders can independently verify and audit trait each business interaction within the university. At the same time, the audit and inspection departments of universities can also effectively supervise the entire financial work of universities through this platform, improving the overall regulatory efficiency.

3.3 Build a big data platform for financial shared and establish standards for the data interoperability

The construction of data standardization makes ensure that all data information in universities is fundamentally unified and standardized is by establishing basic data standards. Adhere to blockchain interoperability standards, promote data exchange between different blockchains and external systems, and ensure the seamless integration of financial management systems based on blockchain with existing university management systems, such as student information systems and procurement systems. At the same time, it is necessary to consider using the encryption mechanism of blockchain to ensure the secure sharing of sensitive financial data between authorized parties thereby enhancing data security and privacy.

3.4 Strengthen the training of financial personnel and improve the quality of shared services

Personnel management is one of the important components of the construction of the model of financial shared service centers. Provide training plans for financial personnel in universities, strengthen career guidance and training for financial management personnel, and improve faculty's satisfaction and work enthusiasm. Establish a platform for exchanging faculty's learning experiences, encourage faculty to keep learning, and form a culture of trust, cooperation, sharing, and exchange in order to build the financial shared service center into a learning and knowledge-based organization, and thereby improve the efficiency of the university financial sharing center.

Summary

With the arrival of the big data era and the emergence of cloud computing, various fields have undergone tremendous changes due to the development of information technology. Although the research on introducing blockchain into the construction of a university financial shared service center model is still in the exploratory stage, integrating blockchain into the university financial shared service center requires overall planning, testing and improving from pilot projects. However, integrating the valuable experience of financial informatization construction in universities with blockchain can truly establish the construction of financial shared service centers and promote the integration of business and finance so as to provide intelligent, efficient, and accurate digital services for the development of universities.

References

[1] Wei SY, Zhang YZ. Research on the construction of financial shared service centers in universities in my country - Taking University A as an example |J|. Educational Accounting Research, 2018 (6): 92-96.

|2] Li J. Research on the model of financial shared service center in universities UI. Business Accounting, 2018, 13(7):97-99.

[3] Chen X. Research on the construction strategy of enterprise financial shared service center under the background of big data [J]. Liaoning Economy 2022(2).

[4] Wang S. Research on the Construction Strategy of Financial Shared Service Center in the Big Data Era [J]. National Circulation Economy 2019(33).

[5] Zhang QL. Financial Shared Services [M]. Beijing: Renmin University of China Press, 2022.

[6] Yu Y, Yu TS. Optimization design and new framework construction of daily reimbursement business in colleges and universities based on blockchain [J]. Business Accounting, 2022, (24): 21-24.