

Research on Process Reengineering of University Financial System Based on "Big Data" + "Cloud Computing"

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Abstract. In the era of big data in the mobile Internet, the state finances have established for the support of scientific research and teaching activities in universities, research funding, various scholarships, and alumni foundations. The huge financial data has led to an increasingly complicated expenditure, which has led to the inability of labor to handle financial Data, the reengineering of the financial system of colleges and universities is imminent, and it is necessary to use brand new thinking to carry out comprehensive reforms. The paper aims at the financial management specific business of colleges and universities, establishes a financial sharing platform centered on "cloud computing", and re-creates the financial accounting process, financial institutions, personnel allocation, financial reimbursement process, fund settlement process, and charge management process. The system can handle a wide variety of financial big data.

Keywords: Financial big data; Cloud computing; Business process reengineering; College finance; Accounting; Financial sharing platform.

1. Research Background

Nowadays, the state attaches great importance to the development of higher education, the state financial funds support it, and the outstanding enterprises are enthusiastic to donate. The sources of funding for colleges and universities in China are growing and diversified. The public finance reform measures such as the national fiscal centralized payment system, the scientific research fund management reform system, and the administrative education journal sales open system, the macro policy puts new challenges and development opportunities for the financial personnel of colleges and universities. Limited financial staff, a large number of financial reimbursements, settlement, charging work, limited error space, resulting in increased pressure on financial reimbursement review. In addition, the rapid development of modern information technology has enriched the research content and methods of financial management science in colleges and universities. Information technology such as cloud accounting and big data has been widely used in enterprises and institutions. The use of modern information technology as the core of financial management system software has become one of the core tools for leaders to reduce operating costs, improve economic efficiency, achieve management goals, and improve decision-making. As a non-profit-oriented institution, the degree of financial informatization is crucial for the country's education and economic development. With the rise of the financial sharing service center, the traditional financial management mode, financial reimbursement, settlement, charging and other business processes have undergone great changes. Many scholars have carried out research on the theoretical knowledge of financial sharing services, and have been continuously integrated in practice. Theory guides practice and practice feedback theory. The cloud-based financial sharing service not only adapts to the complex internal and external environment of the university, but also greatly compensates for the functional defects and development limitations of the existing financial information system. Based on the financial sharing service of cloud computing, designing programs that meet financial management needs, improve management level, and make scientific decision-making, and improve the level of comprehensive property management in colleges and universities.

2. Cloud-based Financial Sharing Center

2.1 Conceptual Description

At present, cloud computing is a hot new business model in the computer field. Based on traditional computer technology and integrated with modern network technology, it is a super computing model with superior storage capacity and computing power. Provide services according to user needs, and flexible services can be implemented according to user needs and usage, and dynamic scalability management is implemented. Users can easily access network access through cloud computing, and quickly obtain powerful virtual resources such as storage, application software, and servers. Cloud computing has five main characteristics: on-demand service, virtualization, large scale, flexible scalability, and service measurability.

Under the premise that the financial management model urgently needs reform and innovation, financial sharing services have emerged. Financial sharing services are implemented through specific platforms, with uniformity, orientation, professionalism, technicality, and agreement. They focus on financial reimbursement, accounts receivable, and fixed assets, integrate related resources, reduce labor costs, and strengthen internal Control and improve operational efficiency.

As a subsystem of the university management system, the financial management information system is connected with the subsystems of other functional departments to realize data sharing with the school student status management system, educational management system, library management system, scientific research project management and personnel management system. The school assets and financial system are merged to truly integrate financial management and business management, establish a complete financial information disclosure platform, and send relevant financial information to the terminal according to the type, form and specific requirements of pre-customized financial information. Information inquiry is provided for all functional departments within and outside the school. For example, through the comprehensive information portal of the finance department, the faculty and staff can check the payment of the salary and the use of funds. The parents of the students can check the payment status of the students through the payment system. At the same time, they can also provide various types of financial statistics and budget execution for the leaders. Situation inquiry and so on [1-2].

2.2 Cloud Computing Technology Application Platform of Financial Sharing Service Center

In the cloud, cloud computing servers are divided from top to bottom: application layer, application support layer, data management layer, and network service layer. The application layer mainly provides functional module services according to customer needs, such as: accounting management, image management, etc.; application support layer, mainly provides information technology support for financial sharing service centers, such as: network management, rights management, etc.; data management layer It mainly collects, classifies, analyzes and stores data, such as metadata, basic data, etc.; the network service layer mainly provides basic network services, such as mail services and authentication services. On the client side, the terminal services device is used to access the cloud computing server of the financial sharing service center through the network. Users can send demand instruction information, and consider relevant applications and access layers to enjoy fast, convenient, and efficient services.

3. Reengineering Financial Management Processes in the Cloud Computing Financial Sharing Center

3.1 Reengineering of the Financial Reimbursement Process

The reporter first inputs the original accounting information and the original bills into the “network accounting system” through the image scanning system. After confirming the submission, the system transmits the relevant rules to the relevant leaders for approval according to the preset procedures, and the accounting personnel will paper the paper.

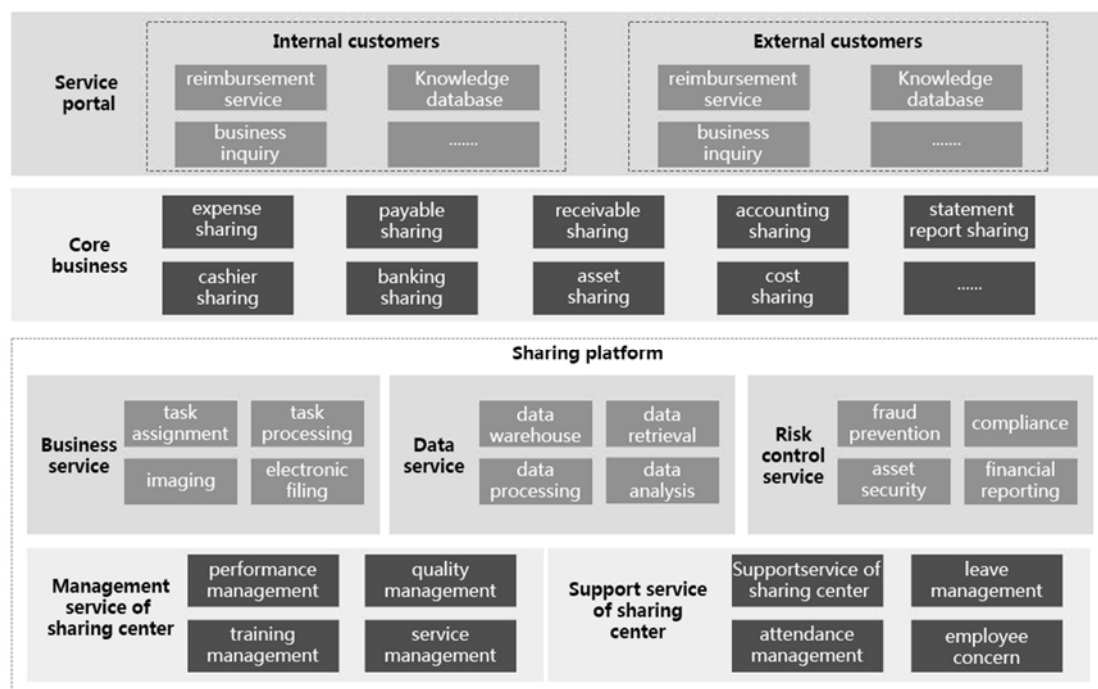


Fig. 1 Cloud-based financial sharing platform

The original document is sent to the finance department. The relevant leader can open the system and receive the financial information from the reporter. After the leader completes the approval process, the system automatically passes the information to the finance department. The financial personnel conduct online review and review of the accounting information through the “Internet Reimbursement System”. The online notification reporter who passed the preliminary examination submits the paper materials to the specific pre-audit window, and the financial personnel will submit the original paper certificate sent by the accountant. After the on-line image material is checked, the import automatically generates the accounting vouchers, and finally the payment is made by the online bank; the accounting materials that are not approved by the preliminary review are used by the financial personnel to refer to the relevant financial system specifications through the “Internet accounting system” for online feedback to the text. The accountant has realized the "Internet +" connection of the information flow. At the same time, finance can also strengthen the publicity of financial rules and regulations and the accounting process through the school's public WeChat platform, so that teachers and students can keep abreast of financial work dynamics, grasp changes in policies and regulations, and reduce multiple round-trip supplementary reimbursement materials [3]. The re-creation of the reimbursement system realizes online reconciliation from the time dimension and the spatial dimension, reducing the time cost of reimbursement and improving the efficiency of financial work.

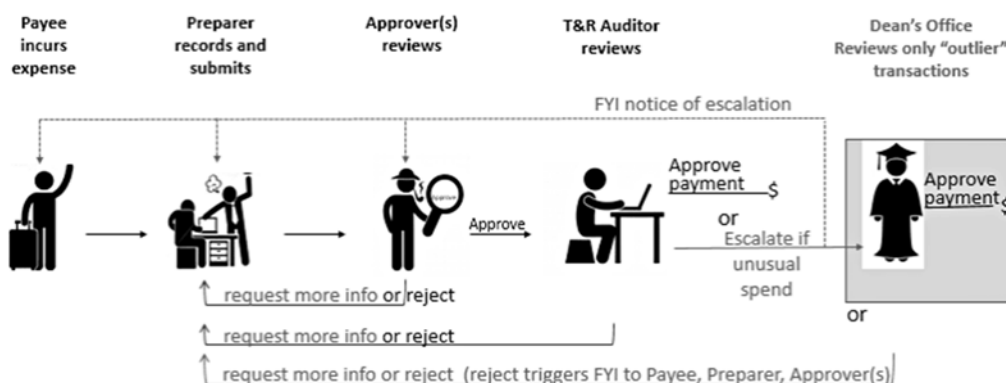


Fig. 2 Reengineering of the financial reimbursement process

3.2 Reconstruction of the Fund Settlement Process

The re-engineering of the fund settlement system in colleges and universities can be considered from the following aspects: First, the cash-free payment system for the “silver school direct connection” should be built between the university and the bank to set up a dedicated network line, configure hardware firewalls and other security facilities, and improve the payment of funds. The success rate and safety; secondly, further improve the service functions such as “inquiry” and “analysis” of the “silver school direct connection” cashless payment system, which is convenient for faculty and staff to conduct timely information inquiry and understand business dynamics; Communicate with software companies and banks to further improve the “system automatic reconciliation” function and reduce the workload of financial personnel. Third, due to the restrictions of the provincial financial departments, the “silver school direct connection” cashless payment system of most universities cannot be applied. In the business of the treasury payment system, the financial department of the university should actively contact the provincial finance department, and envisage that the treasury payment system should be included in the “silver school direct connection” cashless payment system, give full play to the advantages of cashless settlement, reduce the secondary data entry, and fully realize Review one entry and cashier's check payment. At the same time, it is necessary to research and develop the bank account card settlement into the "silver school direct connection" cashless payment system, further expand the scope of cashless accounts, and realize vertical extension management. Through the re-engineering of the fund settlement system, not only the work efficiency is greatly improved, but also the colleges and universities have realized the cashless payment settlement.

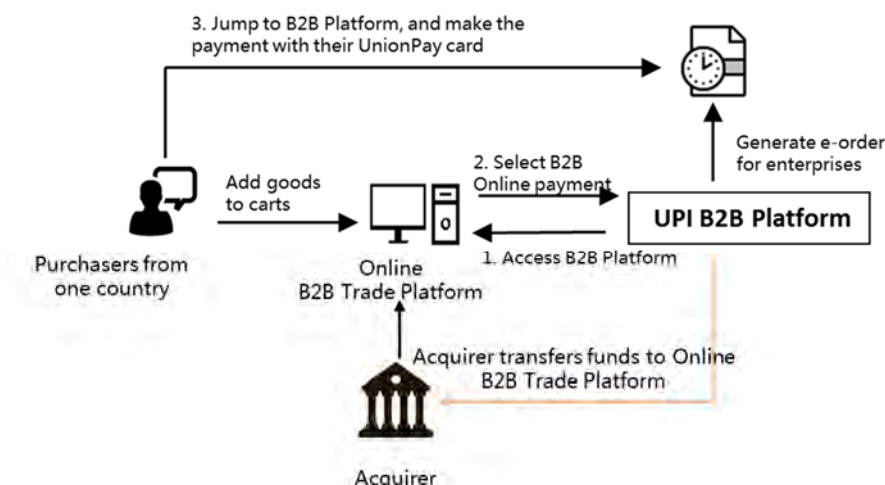


Fig. 3 Reengineering of the financial settlement process

3.3 Recycling Management Process Reengineering

The payment methods for most college students include: online bank payment, designated bank bulk withholding, cash charges, etc. Some colleges with high information management have also established an online payment platform. Students can pay for themselves through the payment platform, and can also pass the campus. WeChat public platform payment. However, because the data between most universities and designated banks is not shared, there is a time lag between the transfer of payment information between schools and banks. In addition, the arrival of bank paper bills sometimes lags behind, and financial accounting cannot be processed in time, so it cannot be reflected in time. The amount of student tuition account changes, the charging information is not real-time; at the same time, the information between the university financial charging system and the departments such as the academic office and the academic office is not seamlessly connected, and the student's student status change cannot be reflected in time [4]. The re-engineering of the charging system has become a must for the financial realization of colleges and universities. Our school has opened the tuition payment center system, which includes the payment system, bill management system and

network payment platform. Its main function is to integrate the payment system, bill management system and accounting system into a whole by the payment platform, and establish a unified network. The payment interface provides a unified charging channel for the application system of each business function department in the school and the charging system without application system; the information of all kinds of charging items can be quickly and safely accessed, and the approval of various fees within the whole school is realized. Comprehensive management of the whole process of bill distribution, crediting, and bill payment, completion of collection management and bill management, and support for online banking, third-party payment or on-site (cash, POS) payment methods, to achieve financial application systems, financial offices Data sharing with various business functions, from the previous financial department passive charges to the payer's initiative to pay, unified charging path, unified charging process, unified fund supervision, is conducive to standardizing charging behavior, strengthen internal control, avoid the charging process Various risks in the process.

3.4 Reengineering Financial Institutions and Staffing

In the context of the reform of state institutions, college finance can try to optimize the allocation of functions and implement flat management reform. At present, most colleges and universities have set up departments in accordance with budget management, accounting management, and comprehensive management. There are project departments, budget departments, accounting departments, comprehensive departments, etc. [5], and some departments have cross-over business. Under the promotion of accounting informational in colleges and universities, the financial business process has shifted from annualization to automation and informational. The management model has also changed from vertical structure to interactive and networked flat management system. For the integration and optimization of department management, the functions of financial positions should be confirmed first, and the implementation, decision-making and supervision should be separated, supervised and mutually restricted. Second, combing the functions of finance and business process positions. According to the financial work flow and the analysis of the specific work content of each department, reduce the unreasonable and cross-repetitive job responsibilities, streamline the financial department, and redefine the duties and assignments of each position. Through the scientific and rational flat management and reengineering of the existing college finance departments, the financial work is procedure, standardized and institutionalized, and the work efficiency and management level of the financial departments of colleges and universities are improved.



Fig. 4 Reengineering of financial organizations

4. Conclusion

All in all, the construction of accounting information in colleges and universities is a systematic project. In addition to the high attention and strong support of university leaders, it is necessary for all departments to work together and build together. At the same time, the finance department should also strengthen its own team building, improve its business level, and cultivate a compound financial

staff. Only in this way can we promote the comprehensive, coordinated and sustainable development of schools in the process of promoting informatization construction.

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