

Research on the Transformation from Financial Accounting to Management Accounting Informatization in Universities under the New Government Accounting System

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Keywords: Financial accounting, management accounting informatization, new government accounting system

Abstract: With China's economic development entering a new stage and the rapid development of information technology system, university education has also stepped up to a new level of leapfrog development. The financial information management based solely on ERP program can no longer fully cope with the increasingly complex financial environment, and the full implementation of the new Government Accounting System has gradually instilled scientific and standardized budget, cost management and performance assessment into the financial management of universities, which has guided the informationized transformation of Accounting from pure financial accounting to management accounting. In order to promote the standardization and institutionalization of the financial management system of universities, this paper, based on the New Government Accounting System, puts forward rationalized suggestions for the construction of management accounting informatization system of universities through an in-depth study of the necessity and problems of the transformation of financial accounting to management accounting informatization in universities.

1. Introduction

Since 2014, the Ministry of Finance has promulgated "Guidance on Management Accounting"^[1] and "Basic Guidelines on Management Accounting", which clearly indicates that the construction of information system for management accounting is imminent, and also shows the determination of China to promote the transformation of financial accounting to management accounting. With the rapid development of information technology and the advent of "Internet+" era, it has pushed our universities to gradually break the shackles of inherent financial management and build a comprehensive and efficient information management platform, so the combination of management accounting and information technology will become inevitable.

2. Overview of Management Accounting Informatization

Management accounting informatization can be regarded as a collection of management accounting and information management, that is, the integration, calculation and analysis of financial information and other comprehensive non-financial information, being based on the financial accounting data system, via modern informatization methods including mobile Internet, cloud services and so on. It enables managers to have a comprehensive grasp of the enterprise's economic business, achieve accurate analysis, strengthen control, avoid risks and improve the overall management level so as to achieve the purpose of enhancing the enterprise value and competitive strength.

3. The Necessity of Management Accounting Informatization Construction of Universities Under the New Government Accounting System

With the deepening of public finance management reform, the continuous enlarging scale of colleges and universities, and the gradual increase in various economic projects, the requirements on fund budget, risk control and performance assessment of faculty and staff are also getting higher and higher. At present, the modern information technology only frees the accountants from the tedious manual bookkeeping and improves the efficiency of post-accounting, but the prior analysis and control at the management level are still weak. The promulgation and implementation of the new "Government Accounting System" indicates that the financial accounting of universities will definitely move towards the reform path of management accounting informatization.

3.1. Improve the Efficiency of Fund Use

The new "Government Accounting System" proposes to use financial and budgetary accounting to account for one accounting operation separately, that is, budgetary accounting and financial accounting are recorded in parallel, and the two are independent but interrelated as well, while the financial accounting report and the final account report based on budgetary accounting are generated respectively at the end of the year. The establishment of this system makes the income and expenditure of university funds and budget execution more complete and clearer. As an important part of management accounting informatization, budget management informatization enables university managers to clearly understand the basic financial situation, budget income and expenditure, and other accounting information, and thus, based on the future development planning of universities, to deeply explore the internal potential, improve the efficiency of the use of limited funds and realize the optimal management of university resource allocation.

3.2. Promote Cost Risk Management in Colleges and Universities

The new governmental accounting system changes the original financial accounting method of universities from cash basis to accrual basis, which requires universities to confirm and measure all economic payments in accordance with the law, instead of just focusing on the income and expenditure of funds. The implementation of accrual system makes the income and expense situation in each accounting period correspond to each other, effectively realizing the matching of income and expense, thus improving the quality of accounting information, helping universities to control the running cost in advance, prepare the best expenditure budget, strengthen the control of various costs in universities and better supervise the project execution. In order to follow the principles of prudence and accuracy, the new government accounting system also requires separating escrow payments of non-school assets such as other expenses by setting up the item of

assets and liabilities entrusted to agents; providing monthly depreciation and amortization for fixed assets and intangible assets; and providing projected liabilities for amounts that are uncertain and likely to lead to outflow of economic resources, etc. The above requirements coincide with the concept of construction of management accounting information system, which is built to facilitate university decision makers to effectively cost risk control of economic activities within the university.

3.3. Strengthen the Fine-Grained Financial Management of Colleges and Universities

The new government accounting system requires college accounting to gradually move from rough management to refinement, such as canceling and adding certain accounting accounts^[2], completely separating financial funds from non-financial funds to enhance the fine-grained management of college accounting; including infrastructure projects into the big accounts management of colleges and universities, and fully considering the costs of infrastructure projects, etc. The construction of management accounting information system in colleges and universities makes the management of colleges and universities to be refined, such as using modernized and specialized management techniques, establishing sound financial working mechanism, clarifying financial system norms, establishing reasonable and effective responsibility evaluation system, clarifying division of labor and strengthening coordination and cooperation among posts. At the same time, we seize the weak links of management, gradually analyze the problems clearly and deeply, solve them, and continuously enhance the effectiveness of financial management.

4. The Current Situation of Management Accounting Information System Application in Colleges and Universities

4.1. Lack of Unified Management Accounting Information Platform in Colleges and Universities

Management accounting informatization has stricter requirements on data information quality, such as requiring information with timeliness, reliability, clarity and professionalism. However, it is difficult to meet all these requirements for the current university management accounting informatization platform construction, such as the requirement of information timeliness, that is, real-time reflection of enterprise financial and other related information to help decision makers obtain information in a timely manner and make decisions in line with the development. However, because the information system involves multiple application modules, the general technology often cannot adapt to the individual needs of universities, making the data collection process more cumbersome, data transmission efficiency is low and time is long. At the same time, due to the shortage of talents in management accounting information in colleges and universities, it makes ordinary financial personnel work in several jobs and cannot devote themselves to the construction of informatization platform, which leads to delayed data screening and entry, and cannot record and screen information in time; reliability of information usually refers to the authenticity of information, that is, the information provided should be consistent with the actual occurrence to ensure accurate and reliable information. Management accounting information platform is established to enable decision makers to use data analysis for accurate decision-making, however, the current slow operation of individual information systems, relatively complex architecture makes data processing less accurate, seriously affecting the effectiveness of management decision-making; information quality requires clarity, that is, to provide effective use of information, due to the relatively wide range of information audience, information platform to provide information must be clear. Only in this way can the value of information be fully reflected and the required objectives of

financial reporting be achieved. However, at present, the accounting data provided by the financial information system alone are still duplicated and redundant, lacking targeted classification and aggregation, etc. The poor clarity cannot really provide targeted and personalized information, which makes the financial work often stay on the surface of the problem; the professionalism of information is also still lacking, and when a large amount of data is input into the management accounting information platform, it is difficult for university financial personnel to analyze and filter out the core management accounting data one by one professionally, which makes it impossible to achieve the target of decision making^[3].

As far as the internal information of colleges and universities is concerned, it is no longer limited to the basic data of finance and accounting, but contains the related information from relevant departments of the university, such as personnel performance management, which needs to obtain attendance records and other information from the personnel department; to optimize the bidding management of government procurement, the asset department needs to provide the procurement information of instruments and equipment; to prepare for the charging work, the enrollment office needs to provide the information of new students admission, etc. In recent years, with the increase in student population and the expansion of school scale year by year, the means of informationization have been increasing and the concept of smart campus has been gradually introduced into each university, and each organization department of the university has customized and updated its informationization application modules according to its own needs, such as OA system, departure system of Student Affairs Department, financial management system of Finance Department, enrollment system of Admissions Office, etc. The construction of management accounting information system needs to integrate the above application modules, because each department only considers the operation needs of its own business department when establishing modules, each application module is often provided by different suppliers, and there is no unified code interface between systems, each application module is often in a relatively independent state, does not take into account the overall system decision-making needs, and cannot realize the collaboration and cooperation between modules. This makes the data compatibility among modules poor and data sharing difficult, and the data is prone to deviations due to different interfaces, resulting in system information asymmetry, and if managers want to get comprehensive financial data for management decision, they need relevant financial personnel to check and calibrate the data, resulting in invariable increase in the human subjective deviation, which not only places more burden on finance department, but also slows down the working efficiency. At present, the work of finance department of colleges and universities is often limited to post-facto accounting, and its important functions such as forecasting and supervision cannot be truly realized. For example, since the enrollment system and the financial system cannot be connected in real time, the information of new students' admission fees still needs to be transmitted to the finance department manually, which greatly reduces the efficiency of work. The lack of global awareness, the high cost of collecting information and the inability to form a unified information platform are always important factors limiting the informationization of management accounting in colleges and universities.

4.2. Insufficient Attention to Management Accounting Informatization Construction in Universities

Scientific research achievements and teaching quality are often taken as the core competitiveness for sustainable development of universities, so schools tilt more resources allocation to scientific research and teaching. College managers often cannot fully take into account all aspects of school construction, while financial work is more professional. With the rapid changes of various information and systems, managers may not have professional financial knowledge, and it is

difficult for them to grasp every aspect of financial work. They sometimes inevitably based on the literal meaning of the simple installation of a set of software or on a new system to achieve management accounting information, or simply update the existing software system to achieve information, or that management accounting information construction is simply related to the work of the finance department and other departments do not have any relationship. However, it is easy to find that the construction of management accounting informatization is a complex and tedious project, which requires not only the installation of new equipment and systems, but also the maintenance and management of the system, the close cooperation of various departments and the development of synergy, and the construction of the integration of industry and finance. In addition to university managers, some faculty members also have some resistance or even fear to the construction of informationization platform. They often think that they are old, the construction of management accounting informationization needs to learn to understand more new knowledge, and they are used to the simple and repetitive work day after day, they have gradually lacked the sense of innovation and do not accept management accounting informationization from their heart. If university managers and staff are unable to achieve complete unity in cognition and behavior, the establishment of information technology will only run counter to their management philosophy, which is not conducive to the sustainable development of management accounting information construction in universities^[4].

4.3. Insufficient Capital Investment in Management Accounting Informatization Construction of Colleges and Universities

Due to the limited attention to management accounting informatization construction, school funding resources are limited, while funds in teaching and research take up most part. At the same time, with the increase in student population, expanded scale of school, the infrastructure also consumes a lot of money, so funds really left to the information construction can be said to be very little. In addition, management accounting information construction is a time-consuming and capital-consuming project, universities often need to buy expensive servers and related facilities, to be equipped with advanced management accounting software. These hardware and software facilities are often costing tens of millions, but the capital investment in the short term is not easy to see the obvious effect, which cannot help but discourage many college managers from the construction of college management accounting informationization. The traditional accounting personnel who can only keep accounts and make reports can no longer meet the requirements of management accounting informatization era. With the deepening of management accounting informatization construction, it is urgent to cultivate high-end management accounting talents with advanced information technology and professional accounting knowledge. The late capital expenditure for talent training and equipment maintenance still cannot be underestimated, which seriously hinders the development process of management accounting informatization in universities.

4.4. Relatively Weak Cost and Budget Management in Colleges and Universities

Unlike the self-financing operation mode of enterprises, colleges and universities as administrative institutions mainly take financial funds and business income as their main income, while colleges and universities with teaching and education as their main industries do not pursue the maximization of enterprise value with the purpose of profit. Therefore, the financial work of colleges and universities tends to aim at legal compliance of income and expenditure and compliance with internal and external audit regulations, ignoring cost control and improving efficiency of fund utilization. For example, most colleges and universities tend to adopt the budget

management method of differential growth, and this traditional budget management mode is prone to problems such as unclear management subjects, weak cost management awareness and less involvement of business departments. At the same time, the budget execution rate is taken as the first index of assessment management, performance management, cost control and budget management are taken as secondary factors of financial management, and the principal-volume-benefit analysis of infrastructure is neglected, all of which make it more difficult to apply and implement management accounting informationization in colleges and universities.

Of course, with the deepening of performance reform, colleges and universities have gradually established a management system oriented by performance appraisal system, however, they still face some problems in the actual application process, such as the performance appraisal standard is not uniform and meticulous, the evaluation mechanism lacks value orientation, and the faculty members have low-level participation in the standard setting, which will affect the development of management accounting work.

4.5. Lack of Composite Talents in Management Accounting Informationization in Universities

Unlike traditional accounting work, management accounting informatization is a product of advanced science and technology management, and is a financial accounting platform built on the basis of information technology. It not only greatly improves the effectiveness of enterprise management, but also puts forward higher requirements in terms of talent quality due to its special characteristics. Traditional accountants are no longer limited to simple bookkeeping, accounting and reporting work, but gradually transformed into management consulting accounting talents who are familiar with all laws and regulations and skilled in relevant network information technology, and they need more professional suggestions and opinions on university management decisions. At the same time, the role of such talents still needs to be gradually changed according to the process of management accounting information construction in colleges and universities, from being proficient in data screening and collection, budget management and other regular financial operations to being proficient in various operations. However, there are few talents who can really achieve the integration of industry and finance, and some businesses even need to be handed over to non-financial personnel for processing, which also puts forward new requirements for the ability of cross-functional personnel to work. This series of high standard requirements on talent quality makes the process of promoting management accounting information construction in universities difficult.

4.6. Hidden Dangers of Network Security in the Construction of Management Accounting Informationization in Colleges and Universities

The rapid development of the information age brings us convenience and also brings some hidden dangers of network security. For example, the "ransomware virus", which made Chinese schools the hardest hit in May 2017, caused the computer information to be encrypted and could be recovered only after payment was made on demand, otherwise the information would be lost permanently, which was a malware ransomware that could not be broken effectively. This is a malware ransomware encryption that cannot be effectively broken. Accounting information has unique data-sensitive properties, and any leakage will cause incalculable losses to universities. Secondly, the increase of information storage media and the growing volume of financial accumulated data have shown a diversified trend of storage media. Such as hard disk, server, cloud disk, etc., which puts forward higher requirements on the storage of financial data information and the security of hardware and software system conditions. In addition, it is not uncommon for some people to take advantage of their positions and network irregularities for their own benefits, which

also greatly increases the difficulty of management accounting information construction in universities. The existence of the above problems shows that building a good network environment for management accounting informatization is an urgent concern for universities at present^[5].

5. The Specific Implementation Path to Realize Management Accounting Informatization in Universities

5.1. Build Management Accounting Informatization Platform and Strengthen Information Interchange

First of all, the relationship between financial accounting and management accounting should be clarified to build a management accounting information platform. Just as the New Government Accounting System requires financial accounting and budget accounting to keep accounts in parallel and finally form the final statement based on budget accounting and financial statement based on financial accounting, budget management as a part of management accounting is gradually paid attention to by colleges and universities. Management accounting of colleges and universities should be an important part of their daily management system, penetrate deeply into every link of financial management, generate scientific and reasonable rules and regulations, and make college finance gradually transition from result-based management to process-based management. Meanwhile, with the rapid development of Internet, colleges and universities must establish an information sharing platform between financial accounting and management accounting, i.e. management accounting informatization system of colleges and universities, the establishment of which is helpful to improve the overall internal control management level of colleges and universities.

Management accounting informatization platform should also contain multiple types of information modules such as budget management, cost control, performance assessment, internal control, financial analysis system, enrollment system, bidding system, etc., so that decision makers can fully grasp relevant information and make rationalized decisions on multi-dimensional information such as daily management, enrollment and school operation, financing and expansion, scientific research management, etc. The system is helpful to break the confinement of the original financial accounting informatization that only satisfies a single user and realize the interoperability of diversified information of universities.

Management accounting informatization platform of colleges and universities is a set of intelligent, integrated and efficient decision-making management system, which is also a system project involving a wide range and huge workload. In order to realize the system intelligent integration, colleges and universities should synchronize the building of management accounting information platform with the construction of smart campus, organize a professional R&D team by the leading department, reasonably plan the organization and construction, compare and analyze the software required by various organizational departments of colleges and universities for the problems such as incompatible system, incompatible interface and data interoperability, continuously improve the software and hardware operation platform, and integrate the relevant functional departments. The information management system of the university is integrated to ensure the compatible and stable operation of the system. We will study the organization structure and operation mode of the university in detail and optimize the business process, so as to establish a set of refined and integrated information system suitable for the development of the university itself and provide the university leaders with more accurate, comprehensive and timely comprehensive information. At the same time, all departments should cooperate and assist each other in development, improve the awareness of participation of all departments in the university and integrate the information construction into daily work, which helps to enhance the overall subjective

initiative of the departments, form a unified information platform and achieve information interconnection, so that the university can maintain its advantages in the current highly competitive environment.

5.2. Improve the Construction Environment of Management Accounting Informatization System

The most important thing for the construction of management accounting informatization system in colleges and universities is to make college managers and financial leaders fully aware of the importance of management accounting informatization construction from internal school level. First of all, university managers should actively participate in the training about management accounting informatization construction, learn the relevant financial opinions and management accounting related knowledge, improve the sensitivity of financial management work, and further understand the importance and urgency of establishing this system. Only when the university managers really pay more attention to the construction of management accounting informatization from themselves, can they effectively urge the grassroots financial personnel to make efforts to master the management accounting knowledge, and use the knowledge acquired to analyze and judge the relevant information, so as to form a good atmosphere for the operation of management accounting informatization. Secondly, the construction of the system is a huge long-term project, from the design, construction, post-maintenance of the system to the introduction and training of related talents, which requires a lot of human, material and financial investment. At the same time, the construction of the system needs the coordination of various departments to complete, which also requires the managers to adjust the scheduling of each peer department so that the information system can be built in an orderly and efficient way^[6].

External conditions such as government accounting system, relevant guidance from the Ministry of Finance and legal technology are also helping the construction of management accounting informatization system. In terms of management accounting standards specification, compared with the development of international standards formulation, China is still in a far behind situation, although the Ministry of Finance has issued "Guidance on comprehensively promoting the construction of management accounting system" and "Basic guidelines on management accounting" one after another in 2014, focusing on the importance of building management accounting system, but the real application effect is not obvious, and we need to further develop and improve the relevant management system; meanwhile, the state should also provide policy support for the development of management accounting in universities from the macro management level.

The information construction of management accounting has put forward higher requirements for internal control and performance management of colleges and universities. First of all, the most important thing is to improve the internal control system, sort out the internal economic activities, check and balance among departments, do a good job in budget management and improve the efficiency of fund use; do a good job in performance evaluation management, refine the division of responsibilities, form a rationalized performance evaluation index system and truly penetrate the performance management into the school management; meanwhile, embed all the information involved in each node process of economic activities into the management accounting information system. At the same time, all the information involved in the process of each node of economic activities is embedded in the management accounting information system, and the corresponding decisions are made through data integration and analysis to fully reduce the risks caused by human subjective factors. As the material basis of management accounting informatization construction, universities should make long-term capital budget for informatization construction according to their actual situation to guarantee the smooth implementation of management accounting

informatization system construction in universities. In summary, from internal attention to external encouragement, from personnel reserve to financial support, universities need to create a good building environment for management accounting informatization.

5.3. Strengthen the Talent Reserve of Management Accounting Informatization in Colleges and Universities

To address the shortage of management accounting talents in colleges and universities, on the one hand, colleges and universities should recruit talents, find professional people with strong sense of responsibility to implement the specific work of building management accounting informatization system, set up professional team, discover problems and summarize them in R&D practice, train relevant personnel in various departments of colleges and universities, realize both R&D and training, and improve the quality of management accounting informatization talents in schools as a whole. On the other hand, colleges and universities should keep pace with the times, deepen the reform of the original teaching body, and cultivate the composite talents of informatization and management accounting needed by colleges and universities themselves.

The rapid development of computer technology has freed financial workers from repetitive and heavy work, and the development and application of management accounting has gradually shifted its work attributes from accounting to management and from recording data to analyzing and dismantling data^[7]. As the main participant in the implementation of management accounting informatization, finance staff of universities must follow the trend and actively adapt to this change of work role and content. In addition to actively participating in training to continuously learn the latest management accounting expertise and the latest government accounting system and strengthen the understanding of the application of the knowledge system structure, finance personnel also need to continuously improve their professional skills in information technology to facilitate fast and convenient data processing and analysis^[8]. Since colleges and universities must set up a team of management accounting talents with high professional skills and high professional quality as soon as possible, colleges and universities can link the learning and application of management accounting with the daily performance assessment of financial personnel, and make sure that there is a basis for assessment and a standard for evaluation, so that problems can be found and corrected in time, thus urging financial personnel to improve their own business level in time.

Strengthen communication with sister institutions, actively learn and summarize the advanced experience of management accounting informatization of other institutions, so as to share information and talents; enterprise management is more concerned about value creation than universities, and it is a pioneer in management accounting in China in controlling enterprise income and cost and improving capital use efficiency. Through the opportunity of school-enterprise cooperation, universities can arrange financial personnel to actively participate in the research of enterprises, fully understand their budget, cost control and performance management mode, put management accounting idea into practice, and improve the overall quality of personnel.

5.4. Strengthen the Network Security Prevention Management in Colleges and Universities

Strengthening network security prevention management in colleges and universities is the cornerstone for the construction of management accounting information system. Given the complex and dangerous network environment, on the one hand, universities should focus on establishing a solid defense system internally, for example, it can be done with the help of firewall, regular password modification and dedicated management. At the same time, in terms of internal control management of relevant personnel, separation of positions, clear job responsibilities, each of their respective duties, mutual assistance and mutual constraints, authorization management, and strict

control of access to computers. On the other hand, advanced and stable network hardware equipment is the foundation of solid network security. As to hardware, it is needed to choose a stable, high security server, purchase multiple firewalls and other equipment used to protect system data security; for software, important data processing and information transmission processing also need to be encrypted to ensure that management accounting information system operation security, for which purpose, fingerprints, facial recognition and SMS verification code can be utilized to confirm identity information.

6. Conclusions

In conclusion, with the promulgation and implementation of the new government accounting system, combining management accounting with modern technology and building a management accounting information system with university characteristics are beneficial for universities to reasonably allocate and use funds, prevent and control financial risks, improve overall decision-making quality and efficiency, and effectively enhance their core competitiveness.

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