

# *The Open University Comprehensive Budget Performance Management Research Integrating Quality Management Cycle and Balanced Scorecard*

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**Abstract:** The construction of comprehensive budget performance management system is an important means for universities to improve the budget management mechanism and promote the modernization of governance system and governance ability. As an important part of the higher education system, Open University undertakes the functions of personnel training, scientific research, social service, cultural inheritance and innovation, and its financial source mostly depends on financial allocation. However, there are some problems in the budget performance management of Open University, such as weak performance management consciousness, imperfect performance management mechanism and imperfect construction of performance indicators. The introduction of Deming Ring quality management cycle and balanced scorecard can effectively solve the difficulties in the design of performance evaluation indicators. Based on this, this paper constructs a comprehensive budget performance management system for universities from four dimensions: concept, organization, process and support, realizes process feedback through Deming Ring quality management cycle, and constructs comprehensive budget performance evaluation indicators for Open University by combining with balanced scorecard, thus strengthening the feedback and application of performance information and promoting the implementation of the comprehensive budget performance management system for Open University. This will help Open University to build a comprehensive, full-coverage, whole-process budget performance management system, and effectively improve the governance efficiency and governance capacity of universities.

## 1. Introduction

Since 2003, China's budget performance evaluation has entered a stage of active exploration, and the release of the Opinions of the Central Committee of the Communist Party of China and The State Council on the Comprehensive implementation of Budget Performance Management (Zhongfa [2018] No. 34) has made the performance evaluation and result application enter a stage

of comprehensive implementation. However, from the past exploration practice, the process of the application of performance evaluation results obviously lags behind the process of performance evaluation, the link of "evaluation results have feedback, feedback results have application" has not been effectively implemented, colleges and universities do not pay enough attention to the performance of the use of financial funds, and the application of results lacks specific implementation policies, resulting in weak application [1]. Based on this, this paper constructs a comprehensive budget performance management system for universities from four dimensions: concept, organization, process and support, realizes process feedback through Deming Ring quality management cycle, and constructs comprehensive budget performance evaluation indicators for Open University by combining with balanced scorecard, thus strengthening the feedback and application of performance information and promoting the implementation of the comprehensive budget performance management system for Open University. And then help Open University to build a comprehensive, full coverage, the whole process of budget performance management system.

## **2. Main Problems in Budget Performance Management of Open University**

After continuous exploration, budget performance management in Chinese colleges and universities has gradually developed. However, compared with the requirements of the national comprehensive budget performance management, there are still problems such as weak performance management awareness, imperfect performance management mechanism and imperfect construction of performance indicators.

### **2.1. Weak Awareness of Performance Management**

China's budget performance management originates from the need of financial departments to strengthen compliance control and improve management efficiency. Therefore, to some extent, there are still differences in the concept and cognition of budget performance management in China, mainly manifested as: the reform of budget performance management led by the financial department contradicts the "base + growth" budget allocation mode adhered to by the administrative departments [2]; Under the influence of the traditional budget concept, the performance-oriented budget management ideas of colleges and universities still need to be strengthened. At the same time, the business department has the stereotype that "budget performance management is the work of the financial department", the management activities of the main body of the use of funds focus on the business goal, the performance management consciousness is not strong, and the enthusiasm and initiative of budget performance management are lacking. As a result, the performance oriented strategy is greatly reduced, and the overall budget performance management pattern is difficult to develop.

### **2.2. Performance Management Mechanism Is Not Sound**

First, the level of budget management needs to be further improved. On the one hand, China's budget preparation often applies the budget amount of similar projects in the previous year, lacking research and detailed calculation in the current year; On the other hand, there is a phenomenon of "two skins" between the department budget and the campus budget in Chinese universities, which leads to the incomplete and precise budgeting. Second, the lack of performance process management [3]. Colleges and universities attach importance to budget allocation and budget implementation progress, but lack control over "how to use money", and the use of funds in business departments is very arbitrary. Third, the lack of performance evaluation results supervision

and application. All departments lack evaluation of the effect of the use of budget funds, and budget performance management, as an important mechanism for administrative agencies to implement contractual supervision, has not been effectively played. Therefore, it is difficult to form a long-term mechanism of performance management in colleges and universities.

### 2.3. Imperfect Construction of Performance Indicators

China's performance management requirements do not reflect the characteristics of the development of education, in the final analysis; the construction of performance indicators does not meet the needs of the development of colleges and universities. First, the setting of performance indicators is divorced from the university's strategic positioning. Although in the process of budget management, colleges and universities set budget performance targets, the content and scope covered by them are not comprehensive enough [4]. In addition, most colleges and universities lack long-term consciousness in budgeting, and performance goals are focused on short-term behaviors, not related to the long-term development of colleges and universities. Second, the results of performance indicators have not been effectively applied. On the one hand, the authenticity and completeness of the results of university performance indicators lack information verification and error correction; On the other hand, the index results could not be timely fed back for the next annual index design and data update.

## 3. The University Comprehensive Budget Performance Management System Construction

In view of the problems such as weak performance management consciousness, imperfect performance management mechanism and imperfect construction of performance indicators in colleges and universities, this paper, referring to existing studies, combined with the application of Deming Ring and balanced scorecard, carries out the development strategy of colleges and universities and the concept of comprehensive budget performance, and forms a comprehensive budget performance management system of colleges and universities with clear responsibilities, clear goals, orderly management and effective feedback. As for system construction, Wang Hongmei et al. built the analysis framework of budget performance management system from four levels: concept, organization, process and support. Jiang Hongqing et al. integrated the comprehensive, whole process and full coverage of budget performance management information needs, and established a government cost accounting information system with full coverage of funds, subject hierarchy, and management of the whole process. As shown in Figure 1, the comprehensive budget performance management system of colleges and universities is constructed from four aspects: concept, organization, process and support.

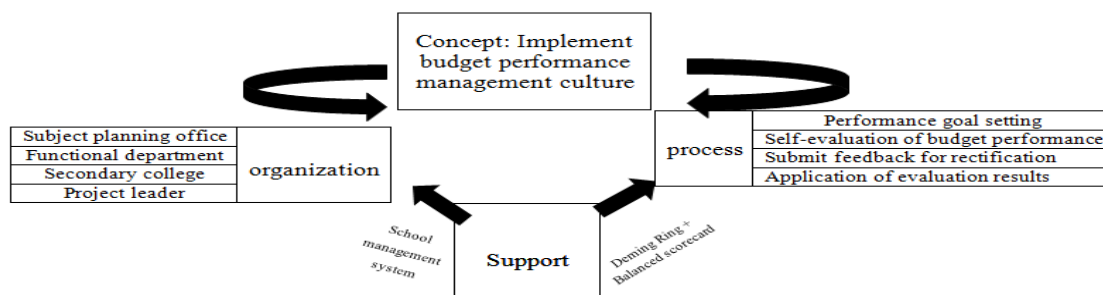


Figure 1: The Open University comprehensive Budget performance management system based on Deming ring and Balanced scorecard

### **3.1. Concept Level: Implement Budget Performance Management Culture and Enhance Performance Management Awareness**

In the process of realizing the all-round pattern, the whole process closed loop and the full fund coverage, the conflict between the performance culture and the traditional administrative concept still exists. Colleges and universities need to cultivate performance management culture in combination with their own development strategies, gather the consensus of all subjects in colleges and universities to enhance the efficiency of reform, create a positive incentive atmosphere, fundamentally solve the problem of weak performance management awareness, and make the full implementation of budget performance management for schools Exhibition services, based on the university development strategy to create new growth points [5]. At the same time, the effective implementation of comprehensive budget performance management in the organizational level, process level and support level can promote the implementation of the performance concept in the specific budget activities of colleges and universities, and further optimize the institution construction and management activities of colleges and universities from the perspective of "performance orientation".

### **3.2. Organizational Level: Clarify the Level of Performance Management and Optimize the Main Body of Performance Management**

Based on the division of responsibilities of the existing management departments in colleges and universities, combined with the requirements of comprehensive budget performance management, the main bodies of various departments in colleges and universities are decomposed according to the budget performance management process, forming four levels: discipline planning department, administrative functional department, secondary college and project leader. Among them, the Discipline Planning Department is responsible for the school's discipline construction, development planning and other matters, and the budget performance management team is generally located in the Discipline Planning Department, responsible for coordinating, organizing and implementing the school's comprehensive budget performance management related matters. As shown in Figure 1, the four-level budget management body of "Discipline Planning Department - functional departments - secondary colleges - project leaders" forms a budget performance management organizational system of "budget decomposition from front to back and information summary from back to front".

### **3.3. Process Level: Formalize the Performance Management Process and Refine the Responsibilities of Management Subjects**

The process level is the main content of the overall budget performance management system. The process mechanism of performance budgeting focuses on the procedural operation of performance realization, and focuses on clarifying the logical relationship and cohesion mechanism of each link. As shown in Figure 2, Deminghuan is applied to clarify the logical relationship and cohesion mechanism of each link of budget performance management on the basis of university budget preparation (setting performance objectives), budget implementation and performance evaluation, and form a comprehensive budget performance management process of "planning, implementation, analysis and application" of budget performance management.

First, the planning phase, that is, the establishment of overall budgetary performance targets. The planning link is the beginning of a Deming ring, but also the feedback and embodiment of the previous Deming ring experience, so that the whole Deming ring cycle is connected, linking the previous and the next. Colleges and universities should carry out comprehensive and multi-dimensional analysis of development strategy and concept, set up performance targets and

arrange budget reasonably. At the same time, the budget performance management team needs to decompose the objectives according to the comprehensive budget performance evaluation indicators, feedback the relevant performance indicators of the budget management subject "from front to back", and solicit the feedback opinions of the budget management subject on the appropriateness and rationality of the indicator setting "from back to front". As shown in Table 1, the Balanced scorecard is used to closely combine the setting of performance objectives with the strategies and development concepts of universities and colleges, and qualitative and quantitative evaluation indicators are designed from four dimensions: finance, internal processes, customers, learning and growth [6].

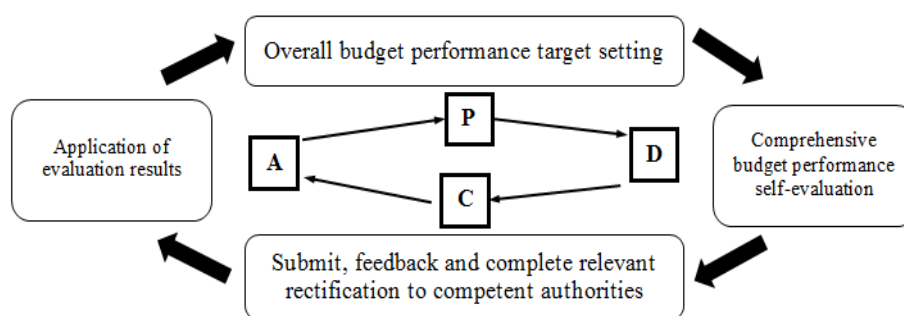


Figure 2: The comprehensive budget performance management system of universities based on Deming ring and Balanced Scorecard -- process level

The financial dimension of balanced scorecard focuses on economic benefits. The strategy of an organization can be translated into financial indicators to a certain extent, and the financial indicators are related to other indicators. In this respect, universities and enterprises are similar. The financial dimension indexes that universities can choose mainly include growth ability, operation ability and capital turnover efficiency. The growth ability of colleges and universities refers to the phased strategic goals realized by colleges and universities or the increase in income compared with the previous period, such as the increase in tuition income with the expansion of enrollment scale, and the income brought by the transformation of scientific research achievements. Although the growth ability is an important indicator, schools sometimes pay more attention to the operation ability. If the income increased by scale expansion is less than the asset investment used for scale expansion, it will undoubtedly affect the sustainable development of colleges and universities. The capital security of colleges and universities is equally important, so the measurement of asset-liability ratio and debt-paying ability needs the attention of managers. As shown in Table 1, the budget execution and accounts receivable write-off of colleges and universities are closely related to the capital turnover efficiency of colleges and universities, which is also an important indicator to measure the financial management ability of colleges and universities.

The internal process dimension of balanced scorecard focuses on the organizational structure setting and internal operation process of the unit. The planning and improvement of the internal process of colleges and universities can not only improve the efficiency of organization operation, but also effectively avoid management risks. The level of internal process construction is also reflected in the management efficiency and the investment of public funds. As shown in Table 1, the level of internal control and information construction, the investment of teachers' public funds, student safety and public opinion monitoring are all important contents of the evaluation of internal process dimensions.

The customer dimension of the Balanced Scorecard mainly focuses on the related needs of customers. As a public welfare unit, the customers of colleges and universities not only include

educational objects (students), students' parents, employers, etc., but also include the public. Therefore, the degree of social satisfaction and recognition is one of the important indicators of the evaluation of colleges and universities in the customer dimension. As shown in Table 1, the index of Balanced Scorecard designed with the customer as the core can also select the input and output of scientific research results, input and output of teaching results, input per student, student development and employment, employer satisfaction and other indicators. In addition, donation income can also reflect the satisfaction of the society and alumni with the university to a certain extent [7].

Table 1: Open University comprehensive budget performance evaluation index system design table

Primary indicators	Secondary indicators	Primary indicators	Secondary indicators
Financial dimension	Income growth capacity	Internal process dimension	Evaluation of internal control construction
	Balance sheet position		Informatization construction level
	Income generating capacity and debt servicing capacity		All public funds are invested
	Overall income and expenditure position		Student safety
	Budget implementation		Public opinion monitoring
	Accounts receivable write-off status		.....
Customer dimension	The transformation of scientific research results	Dimensions of learning and growth	Teaching staff construction expenditure
	The transformation of teaching results		Division personnel funds input
	Per capita input		Educational background and title structure of teaching staff
	Student development in school		The development of teaching staff after entering the school
	Student employment situation		Health promotion of teaching staff
	Graduation development of students		Faculty turnover rate
	Employer satisfaction		Faculty satisfaction
	Social satisfaction and acceptance		Staff ethics violations
Donation income	Construction of campus culture		

The learning and growth dimension of balanced scorecard requires universities to constantly improve and renew themselves. This requires the university to maintain vitality at all times and build itself into a learning organization. Therefore, colleges and universities must set learning and growth indicators for staff management based on their own development strategy and development goals, focusing on the improvement of learning and innovation ability. As shown in Table 1, the dimensions of learning and growth are mainly reflected in the expenditure on teacher team construction and personnel investment, the educational background, professional title, health and career development of the staff, the turnover rate and satisfaction of the staff, the violation of the ethics of the staff and the construction of campus culture.

Second, the implementation phase, that is, the self-assessment of overall budget performance. The implementation stage is the core link of Deming ring, and the effectiveness of the implementation of this stage is the prerequisite for the smooth advancement of the inspection stage

and the adjustment stage. The budget performance management team organizes and coordinates the work of performance self-evaluation, determines the object of performance self-evaluation "from front to back" based on different incentive and constraint mechanisms and division of responsibilities, and summarizes the information of performance self-evaluation "from back to front". The budget performance management team forms the performance evaluation results according to the self-evaluation information and combined with the overall budget performance objectives and index values in the planning stage, and completes the performance self-evaluation report based on multi-party communication. The process of self-evaluation of performance is required to be comprehensive, objective and fair. The budget performance management team is responsible for the verification review of relevant data, and the self-evaluation report must be disclosed and supervised in the university [8].

Third, the inspection stage, that is, to submit and feedback the performance evaluation results to the competent authorities and complete the relevant rectification. There is a principal-agent relationship between colleges and universities and the competent departments. The competent departments generally supervise and evaluate the use of budget funds of colleges and universities by reviewing self-evaluation reports and organizing third-party evaluation agencies to conduct performance evaluation. Colleges and universities tend to get good performance evaluation results and thus get more budget allocations. Therefore, universities need to take the initiative to communicate with the third party evaluation institutions; If the results of the evaluation report are questioned, they can communicate and coordinate again and appeal to the competent authorities, and finally form mutually recognized performance evaluation results.

Fourth, the adjustment stage, that is, the feedback application of the evaluation results. The high quality budget performance evaluation results and their impact on the next year's department budget are the prerequisite and basis for the effective application and continuous development of the comprehensive budget performance management system. The adjustment phase of the overall budget performance management system strengthens the process of feedback application of the evaluation results and links to the next Deming ring. In the adjustment stage, colleges and universities are bound to be subject to the material, administrative and spiritual constraints established by the competent authorities and related to the overall budget performance evaluation process and evaluation results. Comprehensive budget performance management involves the total income and expenditure of colleges and universities. Whether the evaluation content is complete, comprehensive and accurate and whether the evaluation results are good or bad is related to the increase or decrease of budget allocation, which is also the main goal of college budget management. At the same time, the material incentive, administrative incentive and spiritual incentive promote colleges and universities to summarize and improve the budget performance management process according to the performance evaluation results, realize the continuous development of Deming Ring, and improve the governance ability and governance efficiency of colleges and universities [9].

### **3.4. Support Level: Support Management Organization System and Service Performance Management Process**

The supporting system mainly serves the process of budget performance management, and also plays a normative role in the organizational system of budget performance management. Many colleges and universities have introduced the budget performance management method to clarify the organizational requirements of budget performance management by improving the school budget management system. At the same time, Deming ring and balanced scorecard, as tools and methods in the whole process of budget performance management, is the key to promote the

implementation of budget performance management system. Therefore, the institutional framework and the tools and methods together constitute the supporting level of the comprehensive budget performance management in colleges and universities [10].

#### 4. Conclusions

The construction of the comprehensive budget performance management system is significant for colleges and universities to improve the mechanism and modernize the governance. The Open University, as an important part of the higher education system, relies mainly on fiscal appropriations, but has problems in budget performance management, such as weak awareness, imperfect mechanism, and incomplete indicator construction. The introduction of the Deming Ring and the balanced scorecard can solve the difficulties in indicator design. Based on this, this article builds a system for colleges and universities from multiple dimensions to promote the implementation of the Open University's system, helping it build a comprehensive, full - coverage, and whole - process system and improving the governance efficiency and capacity of colleges and universities.

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