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Research on Dynamic Budget Management Model Based on Comprehensive Budget Management

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Abstract: Budget management has always been an open theoretical system since its birth and development. It has constantly absorbed advanced management ideas and methods and achieved good results in enterprise management practice. However, in the face of such new situations as the rapid development of the information age, the rapidly changing market environment and the flexible business of enterprises, the current budget management model has been challenged. How to integrate and integrate advanced theories, methods and technologies to innovate budget management, solve the current difficulties faced by budget management, and achieve dynamic budget management is an important problem that budget management must solve. The research of this paper is to re-examine these problems from the perspective of dynamic budget management in view of the existing problems in budget management, and conduct in-depth theoretical and practical research around the central issue of how enterprises achieve dynamic budget management in a dynamic and complex environment. The feasibility of the dynamic budget management model is proved by the practice of an automobile company.

1. Introduction

In the new economic environment, the economic cycle is greatly shortened and the market changes rapidly. The uncertainty brought by this change poses a new challenge to the traditional management[1]. Faced with this new challenge, how to further make full use of the existing resources in the enterprise, reduce the operating cost of the enterprise, increase revenue and reduce expenditure, form its own competitive advantage and create long-term value has become the primary concern of every enterprise[2]. As a modern enterprise management means to optimize resource allocation, effectively control cost and standardize basic management, budget management has always been an open theoretical system since its birth in the 1990s, constantly absorbing advanced management ideas and methods for its use, and has achieved good results in enterprise management practice[3]. However, in the face of the rapid development of the information age, the rapidly changing market environment, flexible enterprise tasks and other new situations, the current budget management has been seriously challenged. In particular, there are some problems in budgeting, such as long budgeting cycle, uncontrollable budgeting process, lack of accuracy of budget data, inability to adjust in time according to business changes, lag of information feedback, etc., which make the position of budget in enterprise management questioned[4].

Market internationalization and demand dominance have become the main characteristics of

contemporary economic development. With the increasingly fierce market competition and the increasingly perfect modern enterprise system, what role should enterprises play in the highly competitive market has become a strategic issue of modern enterprise management[5]. In this environment, the idea of value chain management is popular all over the world and is applied to the comprehensive budget management of enterprises. Comprehensive budget management is a management control method that can integrate all the key issues of an organization into a system. From the initial planning and coordination to the current control, incentive and evaluation functions, the extended cliff face budget management has become a core control method to comprehensively implement the enterprise development strategy [6]. However, the dynamic and complex business environment exposes many drawbacks and limitations of the existing budget management model. How to realize the flexibility of budget management, improve the management level dynamically and enhance the competitiveness under the increasingly dynamic and complex business environment has become an important problem that budget management theory must solve[7]. Dynamic and comprehensive budget management is an open and dynamic budget management mechanism that is based on advanced information technology and business process design to achieve reasonable resource allocation under the guidance of management ideas suitable for the development stage of enterprises. Dynamic comprehensive budget management pays more attention to the creation of long-term value and the acquisition of lasting competitive advantage. This paper will construct the theoretical framework and management model of dynamic comprehensive budget management under the guidance of dynamic budget management[8].

2. Basic Theoretical Framework of Dynamic Budget Management

The intensification of market competition, the change of business strategy, and the resulting changes in the social environment of enterprises will inevitably lead to corresponding changes in the organizational form of enterprises, thus putting forward new requirements for management accounting. The traditional research method of static deterministic analysis can no longer meet the needs of the highly developed market, but it is necessary to use new methods and dynamic uncertain methods to study new situations and problems in enterprises[9].

2.1 Dynamic Budget Management Principle

Dynamic budget management is a closed-loop organization management system consisting of budget preparation, budget implementation, budget monitoring and budget evaluation. This organizational structure system should meet the following basic principles:

(1) Strategic orientation principle

Comprehensive budget management is a target mechanism. The enterprise's strategic objectives are decomposed and implemented into specific responsibility centers and operation periods, and the stage of realizing the enterprise's objectives makes the strategic objectives operable.

(2) Real time control principle

Comprehensive budget management is a control mechanism. Real time control provides real-time and dynamic budget information, and monitors and corrects the budget behavior of budget subjects to achieve “self-restraint” and “self motivation” of budget subjects.

(3) Flexible and fast principle

Comprehensive budget management is a feedback mechanism. The complex and changeable dynamic environment requires the budget management to establish an efficient and timely budget information feedback system to feed back the budget information to the budget subject flexibly and quickly to ensure the realization of the budget objectives.

(4) Principle of full participation

Comprehensive budget management is a participation mechanism. Comprehensive budget management involves all levels, business departments and specific businesses of the enterprise. Full participation can effectively reduce the adverse factors brought about by asymmetric information, such as internal transaction costs, and truly reflect the operating conditions of enterprises.

2.2 Three Basic Backgrounds of Dynamic Budget Management

To construct a new budget management theory, its theoretical and practical basis should be multifaceted [10]. Different theoretical and practical support points will be found from different levels and angles. For the dynamic budget management theory to be constructed in this paper, the dynamic complexity, value creation and real-time control of enterprises and their business environment are selected as its theoretical and practical background. These three basic backgrounds can support the dynamic budget management to form its basic theoretical framework, and make this theory more feasible in practical practice and theoretical research. And the dynamic complexity of enterprise management environment have laid the realistic foundation of dynamic budget management theory. With this foundation, the establishment of dynamic budget management theory and model has its practical significance and value creation, which points out the basic direction of the theoretical innovation of dynamic budget management and the real-time control of its target, and provides the basic path for the realization of dynamic budget management. And the three have internal consistency, and jointly promote the formation of dynamic budget management theory and model. The internal relationship among them is shown in Figure 1.

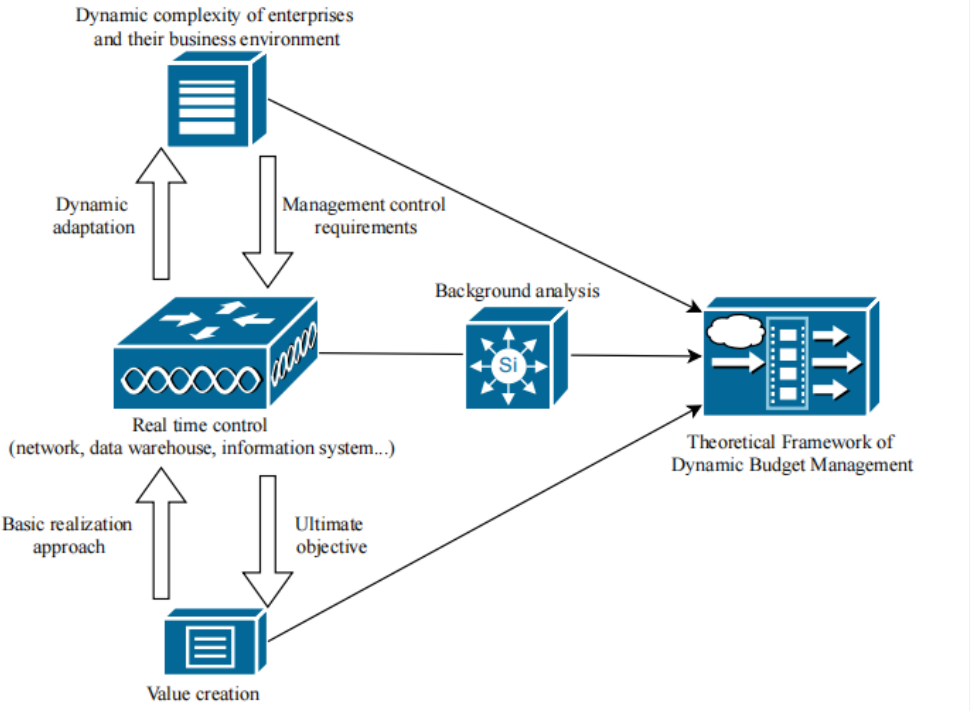

Figure 1: The Internal Relationship of Three Basic Backgrounds of Dynamic Budget Management

From Figure 1, the internal relationship between the dynamic complexity, value creation and real-time control of enterprises and their business environment is mainly reflected in that under the information technology conditions, real-time control is a technical platform connecting the dynamic

complexity and value creation of enterprises and their business environment. On this platform, enterprises can achieve the basic goal of value creation in a dynamic and complex business environment through real-time accounting control; The dynamic complexity of enterprises and their business environment puts forward the basic demand for real-time control of enterprise management control, and the ultimate goal of real-time control is to achieve the creation of enterprise value.

3. Establishment of Dynamic Budget Management Model

3.1 Dynamic Budget Forecast

A key to the dynamic budget management culture is the budget execution culture, which is the culture that regards execution as the code of conduct and the ultimate goal of budget management, and ultimately embodies in the awareness, attitude and behavior of managers and employees at all levels of budget management. From the perspective of enterprise value creation, combined with the basic framework and ideas of the balanced scorecard, Break down the four levels of BSC (balance score card) passed by EVA that reflect the value creation of the enterprise into specific KPI (Key Performance Indicators), and use these indicators to break down and form the budget implementation plan of the enterprise. The focus of the model validation case study in this chapter is to take the constructed KPI system as the input variable and EVA as the output variable, and use these indicators to break down and form the budget implementation plan of the enterprise ANN model to establish a prediction model based on key budget indicators. EVA covers all production factors. Compared with traditional indicators such as accounting profit and cash flow, EVA is more related to market value increment. Therefore, taking EVA as the measurement index means taking EVA as the starting point of the budget, decomposing and establishing the budget index system within the target enterprise, so that the enterprise can formulate more accurate and reasonable business objectives, and ensure its realization with the budget system that is suitable for it.

In order to truly reflect the economic value creation of enterprises, EVA needs to be calculated. The calculation process is as follows:

EVA calculation formula:

$$EVA = NOPAT - (WACC \times IC) \tag{1}$$

$NOPAT$ is net profit after tax plus adjustment items, and IC is total assets plus non-interest current assets plus adjustment items.

WACC calculation process:

$$WACC = Kd(1-T) * D/(D+E) + Ke * E/(D+E) \tag{2}$$

Kd is the capital cost of interest-paying liabilities, Ke is the capital cost of equity, D is the total amount of liabilities, E is the total amount of shareholders' equity, and T is the real tax rate.

In this study, the capital asset pricing model is adopted to estimate the cost of equity capital, and the formula is as follows:

$$Ke = Rf + \beta(Rm - Rf) \tag{3}$$

Among them, Rf is the risk-free interest rate, β is the risk coefficient of individual stocks, and Rm is the return rate of portfolio in the stock market.

3.2 Implementation of Dynamic Budget Management

Budget control is the core link in the process of comprehensive budget management, and its implementation effect determines the role of budget management. The control of dynamic budget management based on value chain analysis is mainly manifested in three aspects: first, prior control. That is to say, when preparing the budget, we should comprehensively analyze the vertical, horizontal and internal value chains to ensure that the preparation basis is reasonable. Second, control in the process. That is to say, it is not difficult to establish a budget information system by using the current information technology in the budget implementation process, but how to effectively integrate business management and budget, as well as business information and budget information, is an urgent problem. The collection and feedback of budget information is an important prerequisite and basis for the realization of budget control function in the budget implementation process, so a perfect information feedback system must be established. The ERP (Enterprise Resource Planning) system reflects and monitors the implementation of the budget in real time, analyzes its differences in real time, and takes necessary measures in time to ensure the realization of goals. Third, control after the event. That is, the actual budget results are comprehensively analyzed and compared, and improvement measures are proposed and fed back to the next budget.

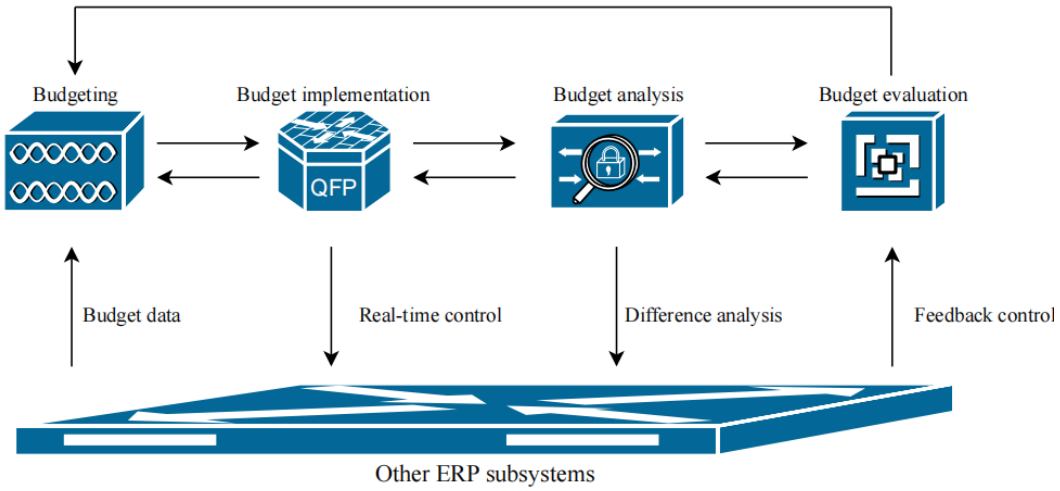

Figure 2: Integrated Mode of Enterprise Comprehensive Budget Management and ERP System

It can be seen from the above Figure 2 that through the integrated use of budget management and ERP system, the ERP system has realized the management of value activities, so that its ongoing management and post analysis can be extended to pre prediction and simulation, further enriching the methods of in-process real-time control and post dynamic analysis. According to the general work plan, focus on the control of budget implementation, so that control permeates into every department of the unit. During the tracking control process, each unit shall focus on self control. Self control refers to the control of each responsible unit over its own budget implementation process. The advantage of self-control is that in the process of budget preparation, responsible departments at all levels have participated in the budget preparation process. They already know the budget well before the budget implementation, which is conducive to giving play to their subjective initiative in the implementation process. In the budget real-time control cycle, the decomposition of budget objectives defines the objectives and responsibilities of each responsible unit. Through the appropriate decentralization mechanism, the responsibility and power of budget management and

decision-making are transferred from the traditional high-level to the more direct responsible person. In combination with the incentive system, the responsibility, power and interest are closely combined, and real-time, open and transparent budget information is provided to them through the information system. This will be more conducive to giving full play to their subjective initiative in the budget implementation process, consciously correcting adverse activities that deviate from the budget objectives, making decisions quickly and effectively, and mobilizing the enthusiasm of responsible units to implement self-control.

4. Result Analysis and Discussion

This paper makes an empirical and model verification on the application of a certain automobile company through dynamic budget. With the three stages of financial management development of automobile companies, their budget management has also gone through three stages as shown in Table 1.

Table 1: Development History of Budget Management of Automobile Companies

Stage	Management model	Problem
Phase 1	Financial budget	Poor management effect
Phase 2	Comprehensive budget	The budget is carried out with the responsible unit as the center, and the business awareness is weak
Phase 3	Operating budget	Backward management means

From the above development history of budget management of automobile companies, multi business comprehensive budget management is the current basic budget management mode of automobile companies.

The sales revenue of the automobile company increases year by year, and its annual sales revenue has a certain rule for the year. By analyzing the financial situation of the automobile company, it can be predicted that its future development trend will be relatively stable. Therefore, you can use the regression straight line method to forecast the company's sales revenue, as shown in Figure 3.

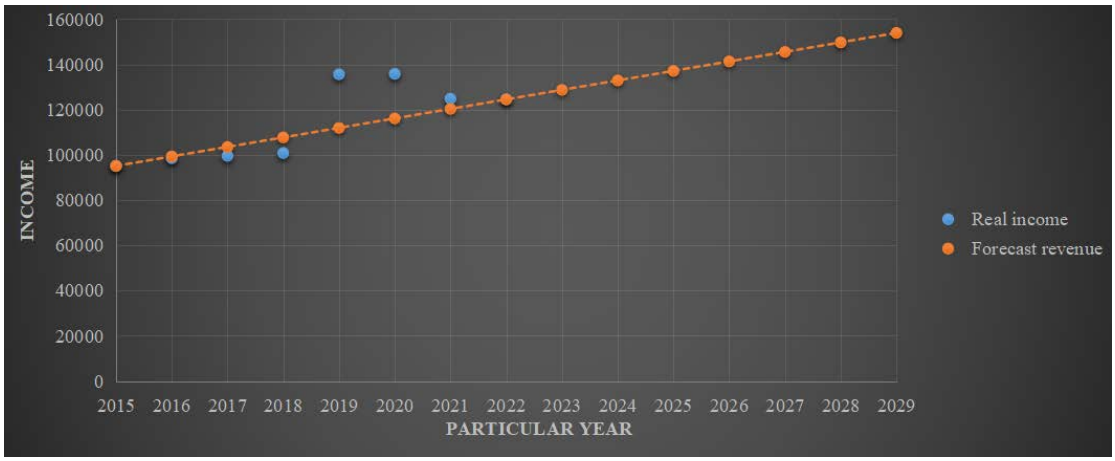

Figure 3: Sales Revenue

The results show that under the dynamic budget management mode, the profitability of automobile companies has been significantly improved, which proves that the dynamic budget

management model studied in this paper meets the actual requirements.

5. Conclusions

The arrival of the era of knowledge economy, the rapid development of information technology, the ever-changing market environment, and the increasingly fierce market competition have changed the business philosophy, mode of operation, and mode of competition of enterprises, posing challenges to the traditional fund management model, management concept, and management mechanism. Only by constantly introducing new fund management models, management concepts, management mechanisms, and management methods. To adapt to the requirements of this environmental change. Studying the dynamic budget management mode and its operation mechanism of innovative funds in high-tech enterprises has important guiding significance for reducing the liquidity risk of innovative funds, realizing the dynamic budget management and optimal allocation of innovative funds, improving the decision-making efficiency of enterprise financial management, and enhancing the innovation ability and core competitiveness of enterprises.

In a word, in the current environment of rapid social and economic development, the management level of public institutions has been constantly improved to promote better development of institutions. In practice, public institutions need to start from the perspective of financial management, apply the concept of comprehensive budget management, scientifically build a comprehensive budget management system, increase budget implementation, and improve the level of budget management. At the same time, public institutions should formulate reasonable budget management plans, scientifically set budget management objectives, strictly implement budget management according to requirements, improve budget management level, give play to its due value, and promote the healthy development of public institutions.

As budget management itself is a comprehensive and complex problem, the research on dynamic budget management based on strategy is only a preliminary attempt and exploration, and due to the limited ability and the constraints of data, time and other factors, the research in this paper can only be limited to a certain scope and level. There are still many problems to be further studied: the prospect of the innovation of dynamic budget management model based on enterprise group strategy in this paper is just some preliminary assumptions, and how to better combine the strategic objectives of enterprise groups with dynamic budget management needs further exploration and research.

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