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## The study on economic development using activity-based management

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### ABSTRACT

Since reform and opening, China's economic growth was mainly extensive economic growth, enterprises achieved scale expansion rely on the advantages of human resources and large consumption of resources, they had few pressure in cost control. At the same time, traditional costing management also had some flexibility at that time, and its drawback is not completely exposed. At present, China's economic development has reached a certain scale and level, and the social and economic environment has change dramatically. It is impossible to continue to achieve business objectives rely on the extensive mode of growth, and the advantage of human capital is gradually reducing or losing, the constraint of the consumption of resources has become a hard bound one. So along with the intensification of international competition, the pressure of cost control is bigger and bigger, the shortcomings of traditional costing management are more and more obvious.

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### KEYWORDS

Activity-based costing;  
Cost management;  
Transformation of economic  
development.

### INTRODUCTION

At present, Chinese per capita GDP is nearly 4000 U.S. dollars. From international experience, this stage is the critical period of shifting economic development mode. Accelerating the transformation of economic development is profound changes in China's economic and social fields throughout the whole process and in all areas. This changes the external operating environment of enterprises greatly, so enterprises must change their development mode. Along with the changes in the pattern of economic development in society, market competition aggravates and consumption concept changes, enterprises face more and more pressure of costs control. But traditional cost management is a relatively crude and simple cost accounting method; it can't effectively address the growing costs pressures faced by enter-

prises. A more scientific way of cost management must be sought, Activity-Based Costing method (ABC) and Activity-Based Costing Management (ABCM) adapts to the requirements for more accurate and realistic costs information addressed by enterprises. Since the reform and opening-up, as the world's fastest-growing developing countries, China has achieved remarkable achievements in economic and social development. But Chinese rapid economic growth and construction achievements are at a cost of huge consumption of resources and environment destruction, and it has becomes increasingly acute between the two. To this end, when drawing up the "China 12th five-year plan", our government adheres to the requirements of letting building a resource-saving and environment-friendly society as a key way to accelerate the transformation of economic development. So the society should thoroughly

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implement the basic national policy of conservation of resources and protection of environments, save energy and reduce greenhouse gas emissions intensity, develop circular economy, promote low-carbon technologies, actively respond to climate changes, promote the coordination between economic and social development and population, resources and environment, implement a sustainable development way<sup>[1]</sup>. This requires enterprises to strengthen costs control, implement intensive production, while the traditional cost management is an extensive type of management, cost accounting is unscientific, cost information is not accurate, and can't effectively reduce costs and conserve resources, this also affects the economic efficiency of enterprises.

The transformation of economic development of the overall national economy forces enterprises must also change their development mode, from the scale, extensive mode to intensive resource and environment-friendly mode. Enterprises shall adjust the existing product structure well targeted, vigorously develop products that market needs and profitability is strong, especially the products with high added value, low resource consumption, high production efficiency, low production costs, independent intellectual property rights, high technology, so to achieve the upgrading of product structure according to the market demands at home and abroad. With the acceleration of product upgrades and the developments of high tech, CNC machine tools and robots, computer-aided designing, computer-aided manufacturing and flexible manufacturing system are more and more widely used in manufacturing technology, enterprises gradually increase the degree of automation. The change of production mode makes the value, maintenance costs and other indirect costs of machinery and equipment increase rapidly, thus resulting the significant changes in product cost structure: the costs proportion of direct labor costs greatly reduces, but the proportion of indirect increases significantly. In such environment, if enterprises still follow the traditional costing method to calculate costs, use direct labor as the single allocation standard to allocate the indirect costs which are much higher than itself, then the cost information will inevitably be seriously inaccurate: overestimating the cost of fewer varieties and higher quantity, underestimating the cost of more varieties and fewer quantity, thus leading the enterprises choose the

wrong product mix and price wrong, finally affecting enterprises' decisions of production and management.

In fact, the occurrence of indirect costs has a variety of reasons in production, and the various reasons have various impacts on the cost of various products. Therefore, in order to calculate product costs accurately, indirect costs must be decomposed based on the caused of their occurrence, the different indirect costs are allocated to the corresponding products by different standards, so the product costs are calculated correctly. Traditional costing methods can't do this, and ABC is designed based on this need.

### ABC AND ABCM

ABC is a costing and management method by means of tracking the dynamic reflection of activities, measuring the cost of activities and cost objects, evaluating activities performance and resource utilization<sup>[2]</sup>. ABC is activities centered, it allocates the costs of resources to activities according to the consumption of resources by activities, and then allocates costs to products or services according to the consumption of productions or services. ABC is a costing method which allocates enterprises' general overhead in accordance with a more realistic assessment instead of direct labor hours or machine hours<sup>[3]</sup>. It can be seen, the purpose of ABC is affirming and calculating activities' value of resources consumed by different cost objects, and rationally allocates the costs to corresponding products or services. The allocation bases used in ABC and traditional costing method have qualitative and quantitative differences. ABC uses multivariate allocation bases, fully considers non-financial factors, excludes the limitations of a single allocation base, and greatly improves the accuracy and authenticity of cost information. ABC doesn't completely deny traditional costing methods, but through more detailed analysis of production process, ABC more accurately allocates indirect manufacturing costs. In addition to providing activity-related cost information for enterprises, ABC can help managers identify value-added activities and non-value-added activities in production process, so it provides a reliable basis for improving workflow, and enterprises can more effectively reduce and control costs. Activity-Based Costing Management (ABCM) is continually improving busi-

ness operation through cycling improvement, making managers more clearly observe problems and room for improvement than ever, thorough analyzing and coordinating arrangement of production.

The purpose of ABCM is to enhance customer value, increase profits of the enterprises, it is a new centralized management method based on ABC. Through the recognition and measurement of activities and activities costs, ABCM finally calculates the costs of products, it makes the cost calculation down to activities level, traces all activities of enterprises and dynamically reflects then, analyzes cost chain, including the motivation analysis, activities analysis, etc. and provides accurate cost information; ABCM can guide enterprises to effectively perform the necessary activities, eliminate and streamline the activities that can't create value, so to reduce costs and improve efficiency.

### THE APPLICATION OF ABCM DURING THE TRANSFORMATION OF ECONOMIC DEVELOPMENT

China is in a period of accelerating the transformation of economic development, the external environment enterprises face is in a constantly change, which will inevitably have a significant impact on the internal management of enterprises, and make enterprises face greater risk of business failure. Therefore, enterprises in the period of transformation of economic development must more closely focus on all aspects of their operations by various advanced management tools and management concepts. Unfortunately, the cost information provided by traditional costing method is distorted in this environment<sup>[4]</sup>; it is not conducive to business management, and ABC system can provide more accurate and systemic costs information to adapt to the new requirements of costing proposed by the transformation of economic development. Therefore, the acceleration of transformation of economic development requires us actively promote ABCM to replace the traditional cost management method, so to service for the improvement of enterprises' management level.

The substance of ABC can be summarized as "products consume activities and activities consume resources", enterprises purchase resources and then resource costs occur, the activities in the production pro-

cess consume corresponding resources and then activities costs occur, products and services consume corresponding activities and result product costs. When applying ABCM, Enterprises should follow the following basic procedures in the period of transformation of economic development.

#### The description and definition of activities

Activities are collection of human, technology, raw materials, methods, environment and other resources consumed by enterprises in order to provide a certain number of products or services. Every aspect or process of production during business process can be regarded as an activity. In order to practice ABCM, enterprises first need determine and describe various activities that enterprises perform for providing products or services for customers, and describe and definite these activities. The division of activities can be started from product design, then to material supply, to all aspects, assembly, and quality inspection of process, and to shipment and sale.

#### The calculation of the costs of activities

In order to conduct ABCM, enterprise must make the costs of activities clear; this requires cost calculation deep into the level of every activity and calculates the costs of activities.

Firstly, enterprises consume a variety of resources in the process of producing products or supplying services, enterprises should respectively set corresponding resource cost database, and measure the consumed resource value during a certain accounting period, and accumulate the measurement results to corresponding cost pools of resources; Secondly, enterprises make sure the main activities, and set corresponding cost pools of activities; Thirdly, according to the resources consumed by activities, enterprises allocate the value assembled from cost pools of resources to cost pools of activities. For the same resources consumed by a number of activities, enterprises calculate the resource cost allocation rate according to resource drivers, and allocate resource value to every activity by allocation rate, the added costs of resources allocated to cost pools of activities format their value, that is activities costs assembled by project of cost pools of activities; Fourthly, select cost drivers of activities and divide the costs in

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activity pools by the units of cost drivers, so to calculate the allocation rate of each cost driver; Finally, according to the number of cost drivers consumed by products and the allocation rate of cost drivers, enterprises calculate the activities costs borne by corresponding product, sum up all activities costs that particular products should bear, then the total cost of the products can be obtained, of course, the corresponding unit costs is able to be obtained.

### The improvement and enhancement of activities

Enterprises should analyze various activities that constitute enterprises' activities chain, evaluate the effects of activities from the perspective of customers and markets to see whether the activities create value to meet customer's needs. Without creating value for customers, the activity should be judged whether it must be present to maintain the process of production and operations from the whole enterprise's perspective. For non-value added but necessary activities, enterprises should appropriately reduce the allocation of resources and the absolute amount of resource consumption without affecting the production and function; for non-value added but not necessary activities, enterprises should eliminate or gradually reduce the activities, and then eliminate or reduce the resources that the activities consume.

### Performance evaluation of activities

The performance evaluation of activities, on the one hand is to summarize the activities' completion of the current production cycle, more importantly, is to provide an important basis for the improvement of activities, optimization of activity chain and activity resource for the next production cycle.

The performance indicators of activities focus on three main areas: efficiency, time and quality

y. Efficiency mainly embodies the input to output ratio of the activities; the time of performing activities is also very critical, a longer time often means more resource consumption and poor ability to respond to customers needs; Quality is mainly reflected in the goodness that an activity completes in a certain consumption of resources<sup>[5]</sup>.

### Continuously improvement and enhancement

Based on activities analysis and cost drivers analy-

sis, enterprises shall establish appropriate performance measurement system to assess and evaluate the effects of the control of activities costs, and then through the performance feedback information of the control of activities costs, enterprises re-operate the next higher level activities analysis and cost drivers analysis, so to promote enterprises to continuously improve the efficiency and quality of activities, the enterprises will be put in a continuous improvement environment, the value chain will be optimized and sustainable costs reduction will be achieved, which are shown in Figure 1.

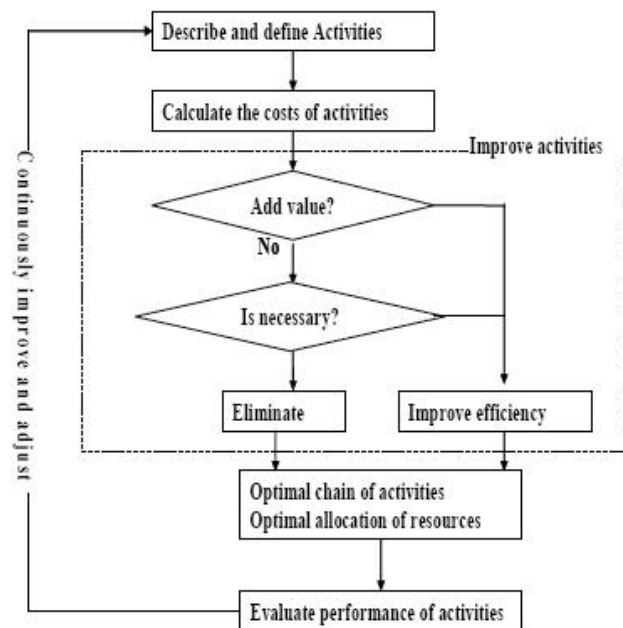


Figure 1 : Flow chart of ABCM

## THE KEYS OF IMPLEMENTING ABCM DURING THE TRANSFORMATION OF ECONOMIC DEVELOPMENT

ABCM is an advanced concept and method of cost management, which can provide enterprise with more accurate cost information, avoid business decision-making mistakes caused by the distortions of cost information. But enterprises will inevitably encounter some difficulties and problems when shifting the traditional cost calculation and management into Activity-based Cost calculation and management, especially in the period of accelerate transformation of economic development, the rapidly changes in external economic conditions, legal status, social conditions will have serious implications and impact on enterprises, and let enterprises' produc-



tion and operation in constant adjustment and change, which make the implement of ABCM more difficult. In order to effectively implement ABCM and make advanced concepts and method of cost management achieve desired effect, enterprises shall pay particular attention to the following problems.

### **Combines with the corporate strategy**

Strategic management refers to a series of business management which combine the daily business decision making with the long-term plans<sup>[6]</sup>. The key of developing and implementing strategy is analyzing the external economic environment, reviewing the internal conditions and quality, and determining the strategic objectives based on them so to reach a dynamic equilibrium between the three. But in the period of transformation of economic development, the external environment of enterprise changes constantly, customer behavior, product substitution, suppliers, international market and so on are all in constant adjustment and change, and this will inevitably lead to enterprises need continue to adjust and reform their strategies. The adjustment and reform of strategies will cause changes in behavior of internal production and management, which of course include the changes of cost management. So, along with the acceleration of transformation of economic development and changes of external environment, the demands for cost information of internal enterprises are also changing, this requires enterprises dynamically adjust the content of ABCM, so to make it consistent with the overall strategies and service for the overall strategies.

### **Increases all-members' awareness of cost**

There exists a great difference in concepts between ABCM and traditional cost management, the operating principles and methods of ABCM are also entirely different from the current cost management methods. So enterprises shall comprehensively improve the quality of financial officers, and strengthen the training of theories and processes of ABCM.

In addition, ABCM relates to the whole process of production and operation management, it is not just an issue of cost accounting, and therefore it needs not only the involvement of finance staff. ABCM relates to the determination of cost drivers, the decomposition of ac-

tivities, and the analysis, reorganization and improvement of activities' process, it relates to senior leaders as well as general staff in all sectors and at all levels, and it also involves all aspects of enterprise management, so ABCM requires a variety of professional personnel involve it. Therefore, the enterprises must form a consensus from top to bottom for the implementation of ABCM. This requires enterprises do well in the training of all staff to improve the cost awareness of all staff, to prevent and eliminate ineffective activities, to eliminate the resistance of human factors in the implementation, and to promote lower costs and improve efficiency.

### **Combines with the current cost accounting method**

ABC is a new full-cost system and expands the scope of cost calculation, product cost in ABC includes the overhead which can not be retroactive, the value of cost calculated by ABC is very different from corresponding value calculated by traditional costing method, they are not directly comparable with each other<sup>[7]</sup>. In addition, traditional cost accounting system is compatible with the national associated accounting regulations and systems, the cost data provided by it can be directly used for the preparation of financial reports and other public and formal documents, while the cost information obtained from ABC can only be used for internal operation and management, outside investors and relevant regulatory bodies don't recognize the cost data by ABC. Therefore, enterprises shall pay attention to the interface and integration with the existing costing system in the implementation of ABC.

### **Follows the principle of cost-effectiveness**

The implementation of ABC should follow the principle of cost-effectiveness, which has two meanings. First, under the causal relationship, ABC uses a variety of criteria to allocate indirect cost, providing a more objective and accurate cost information. However, a cost system is not necessarily the more accurate, the better, the corresponding cost must also be considered. ABC adds a lot of work, such as the analysis, validation, recording and measurement of activities, increases the selection of cost drivers and the allocation of activities costs, so ABC costs more to calculate costs<sup>[8]</sup>. Thus, while ABCM achieves a certain effect, but the principle of cost-effectiveness should also be considered, that is,

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enterprises shall consider the proportion of indirect costs in all costs, the degree of distortion of cost information by traditional cost accounting methods and other factors to weigh whether implement ABCM.

The second is the implementation of ABC requires certain basic conditions, such as computers, enterprises should do what they are capable of, they shall identify the level of details of activities account settings according to their own extent of accounting computerization and the progress of the network. An enterprise that implements ABC can identify hundreds or even thousands of activities, if the enterprise establishes cost pools of activities one by one and chooses cost drivers for them, the cost calculation can be very precise, Carsten Homburg thought that higher number of cost drivers would produce more accurate cost information<sup>[9]</sup>. However, the increase in the number of cost drivers will no doubt result the related costs of collection, storage and information process. Also, the errors in data collection, reporting, evaluation of raw data and the conflicts in different systems and different cost drivers may cause errors in the calculation of product costs. Merchant and Shields said that, a ABC system with a low complexity and less cost drivers not only cost few in the implementation, but also be easily understood by managers<sup>[10]</sup>. If there are too many cost drivers for planning and control, the calculation of product cost will become neither efficiency nor lack of effect. Therefore, enterprises should not arrogant, blind to set too many accounts that are not inconsistent with their basic conditions, resulting in unnecessary economic losses, distortion of cost information and control of activities costs; Moreover, with the transformation of economic development and the change in the external environment, the more detailed in the setting of cost drivers, the more often needs to be adjusted, which is detrimental to the relative stability of cost information and not conducive to cost analysis and comparison.

## CONCLUSIONS

ABC and ABCM is a more precise cost calculation and management method, which can effectively overcome the shortcomings of traditional costing management and provide accurate and reliable cost information for the management of enterprises. Therefore,

in order to speed up the transformation of economic development, enterprises should actively abandon traditional costing management and introduce ABCM.

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