
Integration of activity-based budgeting and activity-based management

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Abstract: Activity-Based Costing (ABC)/Activity-Based Management (ABM) was developed in the mid 1980s by Kaplan and it has been applied very popular in developed countries with obvious advantages. Although ABC system has more advantages than traditional systems, but in today's competitive economic environment it has not met fulfilled provision of sufficient information for decision-making. The ABC/ABM system alone, however, lacks the ability to support information for managerial decisions. We can summary the limitations of single ABC in today's business environment as follow: (1) ABC was originally developed because traditional costing appeared to be providing misleading product costs. Only single ABC using, it just provides an alternative way to trace costs to products, (2) lack of planning and control cost. ABC/ABM discusses a product has already been developed, has been incurred costs, and is ready to be marketed as soon as a price set, (3) limit in finding opportunities for innovation, (4) lack of support for short-term decision. How can we overcome these limitations of ABC/ABM? This paper draws the framework of integration of ABC/ABM with other management accounting methods as one way to overcome its limitation and innovation management accounting. In the cope of this paper, authors focus on one model in the framework that is the integration of ABB with ABM.

Keywords: Integration, Activity-Based Management (ABM), Activity-Based Budgeting (ABB)

1. Introduction

ABC/ABM has brought humongous advantages and profits for many organizations as visual evidences. However, with the rapid change of today's economic environment, advanced technology, and the requirements of the modern enterprise's management force companies produce and supply its products at the lower price than its competitors do. The same goods or the functions of goods are the same but how to supply it to customer with the lower price and meet the customer need, and raise customer value. To solve this question, managers need to focus on detailed cost information provided by costing system. They need to look the detailed cost information in the past, the present, and the future in order to control cost and look for opportunities to reduce costs. ABM provides reliable cost information that need for innovation of organization operation. Reliable product cost information is considered as a powerful tool in increasing a company's profitability

and competitiveness.

In the prior literature, there were many researches related to single ABC/ABM method. We can classify the prior researches into three perspectives. (1) The researches related ABC/ABM has many advantages than traditional system. (2) The researches related to disadvantages of ABC/ABM. (3) The researches related to implementation of ABC/ABM. The prior authors researched related to single ABC/ABM method such as Qayoumi, 1996^[22]; Hixon, M., 1995^[12]; Cooper and Kaplan, 1991^[8]; Akyol *et al*, 2005^[2]; Lewis, 1992^[16]; Cohen *et al*, 2005^[7]; Nassar *et al*, 2011^[21]; Innes *et al*, 2000^[14]; Baird, 2007^[3]; Chen *et al*, 1993^[4]; Liu and Pan, 2007^[18]; Zhang and Isa, 2010^[27]; Chongruksut and Brooks, 1993^[6]. A little written about the integration of ABC with other management accounting methods such as ABC with GPK, ABC with Target Costing, ABC with Economic Value Added (EVA), and ABC with Balanced scorecard (BSC) (e.g., Gunther Friedl *et al.*, 2005^[9]; Wilbur I. Smith *et al.*, 2002^[26]; Kaplan, 1998^[15];

Matthew and Miller, 1988^[19]; Roztocki and Needy, 1999^[23]; Chiadamrong, 2003^[5]; Huynh *et al.*, 2013^[24]; Mohamed *et al.*, 2012^[20]; Lim, 2001^[17]; Turney, 2005^[25]). However, the past literature lacks to research on ABB with ABM. This paper contributes to the literature the management method of ABB integrating with ABM.

By researching of the advantages and limitation of ABC/ABM and other management accounting methods, this paper finds the best ways to overcome the shortcoming of theoretical ABC/ABM. This research draws the framework of ABC with standard costing, ABC with Target costing, ABC with Economic Value Added (EVA), ABC with BSC, and ABC with traditional budgeting, and ABB with ABM as figure below.

2. The Framework of ABC/ABM Integration

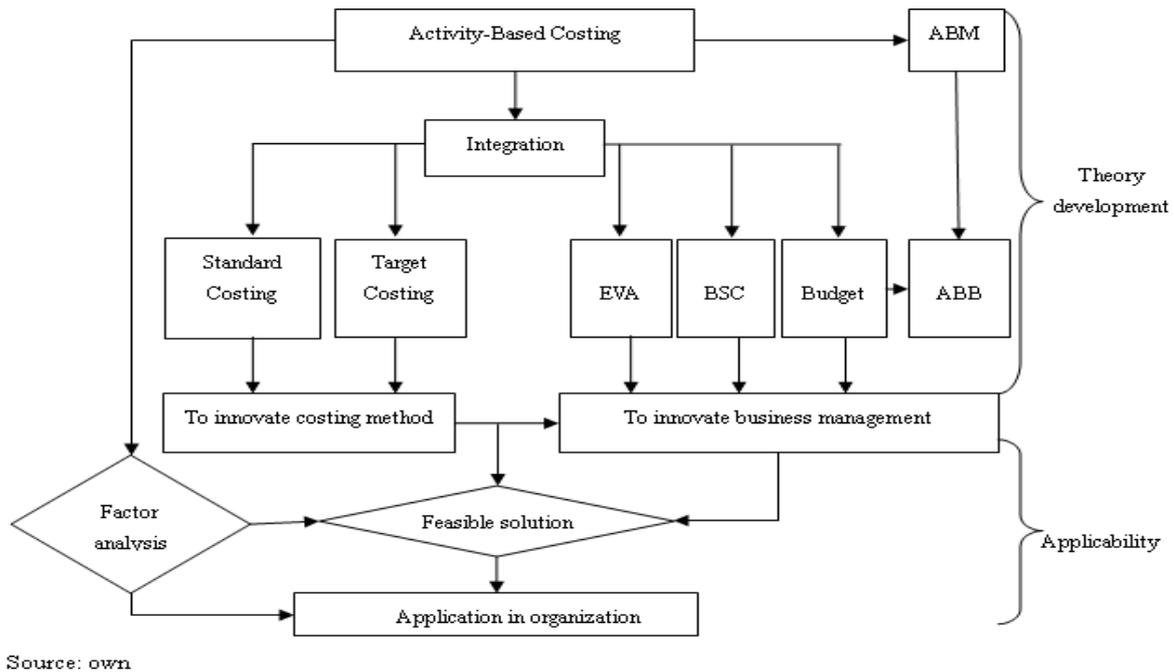


Figure 1. ABC integration with other management accounting methods

By integrating ABC with other management accounting methods, this research explores advantages of ABC, overcome its disadvantages and innovation a modern costing system based on ABC/ABM models. The above framework of integrating ABC/ABM with other management accounting methods supports guidance how to apply and expand them in the companies. In this paper, the methodology used is a type of theoretical mining and logical reasoning to explore the limitations of ABB and ABM, and then the components of ABB and ABM can be used to overcome the shortcomings of each other. Next section, we discuss the integration of ABB and ABM.

3. Overview of Activity-Based Management

3.1. Nature of Activity-Based Management

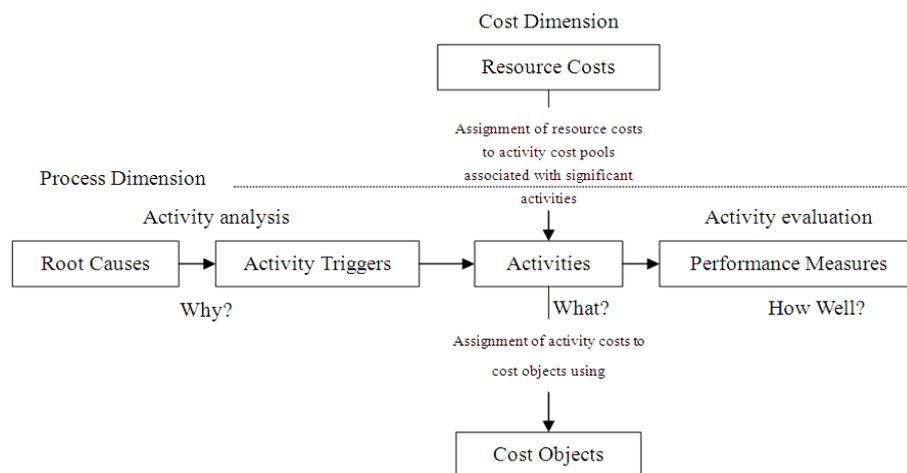
ABM is a system-wide, integrated approach that focuses management’s attention on activities with the objectives of improving customer value and the profit archived by

providing this value. ABC is the major source of information for activity-based management. Thus, the activity-based management model has two dimensions: a cost dimension and a process dimension.

The cost dimension provides cost information about resources, activities, and cost objects of interests such as products, customers, suppliers, and distribution channels. The objective of cost dimension is improving the accuracy of cost assignments. As the model (figure 2) suggests, the cost of resources is traced to activities, and the cost of activities is assigned to cost objects. This activity-based costing dimension is useful for product costing, strategic cost management, and tactical analysis. The second dimension, the process dimension, provides information about what activities are performed, why they are performed, and how well they are performed. This dimension’s objective is cost reduction. This dimension also provides the ability to engage in and measure continuous improvement (Hansen and Mowen, 2003)^[10]. ABC system is used to improve the operations of an organization in ABM. Costs are incurred in organization because of activities. A key feature of activity-based costing

systems is that they measure and track the costs of significant activities over time. In addition, using the activity cost information collected in an ABC system, ABM involves the collection of financial or operational performance information about significant activities in the enterprise. The motivation for this process is twofold. First, the costing system attempts to assign the costs of significant activities to the products that cause those costs to be incurred. Second, by identifying the cost of activities, managers can attempt the reduction or elimination of unnecessary costs. ABC and ABM tend to strike a familiar chord with a variety of managers and employees throughout an enterprise. Activities are expressed in terms of events that are familiar to such diverse people as sale personnel, engineers, purchasing managers, inspectors, material handlers, production employees and shipping personnel (Hilton, 2002)^[11]. In today's business environment, ABM is a useful cost management system. One of the most useful applications of ABM is distinguishing between value-added costs and non-value-added costs. Another ABC related technique that has gained popularity is benchmarking, the continuous process of comparing products, services, and

activities to the best industry standards. ABC system also focus on activities, its results are a very useful tool in cost management systems. ABM is using the output of an ABC system to aid strategic decision making and to improve operational control of an organization in order to achieve the aims: to improve the value received by customers and profits by identifying opportunities for improvements in strategy and operations. According to Kaplan (2008)^[1] ABM refers to the actions managers take, on the basic of an ABC study, to improve the efficiency of the activities and the profitability of products. Other ABM actions aim at improving processes, particularly the processes performing batch and product-sustaining activities. Another ABM action for transforming loss products into profitable ones is to impose a minimum other size to eliminate short, unprofitable production runs. The ABC system has provided managers with many insights that they can exploit to transform their currently unprofitable operations into profitable growth. Thus, to establish and apply ABM system to improve product quality, reduce costs in order to improve quality of life, eliminate poverty, and create wealth for social. It is the mission of the enterprise.



Source: Hilton (2002)

Figure 2. Two dimensions of Activity-based Management

3.2. Benefits of ABC and ABM

ABC/ABM systems bring many advantages for many companies applied them. They were focused by many several researchers as Kaplan *et al* (1998)^[15], Atkinson *et al* (2008)^[1], Hansen and Mowen (2003)^[10], Horngren *et al* (2007)^[13]. As we known, traditional costing system is inexpensive to operate and simply to apply than ABC, but it leads to large distortions in reporting the cost of activities, processes, products, services, and customers. Based on its information, managers may make serious mistakes in decision-making. An ABM system is more detailed and more accurate than a functional-based cost management system, has created a demand for strategic-based cost management. Horngren *et al* (2007)^[13] presented that although ABC systems are rather complex and costly to implement, more and more organizations in both

manufacturing and nonmanufacturing industries are adopting ABC systems for variety of reasons:

1. Fierce competitive pressure has resulted in shrinking profit margin. Companies may know their overall margin, but they often do not have confidence in the accuracy of the margins for individual products or services. Some are winners and some are losers – but which ones? Accurate costs are essential for answering this question.

2. Greater diversity in type of products and services as well as customer classes results in greater business operating complexity. Therefore, the consumption of a company's shared resources also varies substantially across products and customers.

3. New production techniques have increased the proportion of indirect costs. That is, indirect costs are far more important in today's world-class manufacturing environment than they have been in the past. In many

industries, automated equipment is replacing direct labor. Indirect costs are sometimes more than 50% of total cost.

4. The rapid pace of technological change has shortened product life cycles. Hence, companies do not have time to make price or cost adjustments once they discover costing errors.

5. The costs associated with bad decisions that result from inaccurate cost determinations are substantial.

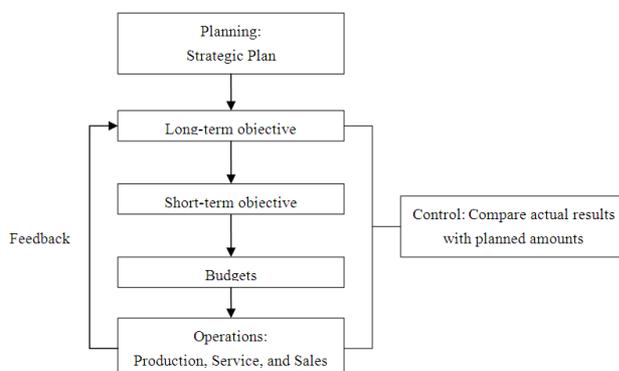
6. Computer technology has reduced the costs of developing and operating the ABC systems.

In addition to helping managers understand manufacturing costs, ABC also enables managers to analyze customer profitability, redesign products, product substitution, improve processes and operations strategy, technology investment, and eliminate waste products.

4. Overview of Activity-Based Budgeting

4.1. The Role of Budgeting In Planning and Control

Budgeting plays a crucial role in planning and control. Plans identify objectives and the actions needed to achieve them. Budgets are the quantitative expressions of these plans, stated in either physical or financial terms or both. When used for planning a budget is a method for translating the goals and strategies of an organization into operational terms. Budgets can also be used in control. Control is the process of setting standards, receiving feedback on actual performance, and taking corrective action whenever actual performance deviates significantly from planned performance. Thus, budgets can be used to compare actual outcomes with planned outcomes, and they can steer operations back on course, if necessary. The illustration of the relationship of budgets to planning, operating, and control showed as below. Budgets evolve from the long-run objectives of the firm; they form the basis for operations. Actual results are compared with budgeted amounts through control. This comparison provides feedbacks both for operations and for future budgets (Hansen and Mowen, 2003)^[10].



Source: Hansen and Mowen (2003)

Figure 3. Purposes of Budgeting

Budgets are usually prepared for areas within an organization (departments, plants, divisions, and so on) and for activities (sales, production, research, and so on). This system of budgets serves as the comprehensive financial plan for the organization as a whole and gives an organization several advantages: (1) it forces managers to plan; (2) it provides resource information that can be used to improve decision making; (3) it aids in the use of resources and employees by setting a benchmark that can be used for the subsequent evaluation of performance; (4) it improves communication and coordination. Budgeting forces management to plan for the future: to develop an overall direction for the organization, foresee problems, and develop future policies. When managers spend time planning, they grow to understand the capabilities of their businesses and where the resources of the business should be used. Budgets enable managers to make better decisions. They help managers foresee potential differences especially in shortfalls. By analyzing differences to find the cause, help managers improve organization activities in order to achieve the plans. Budgets set standards that can control the use of a company's resources and control motivate employees. Fundamental to the overall success of a budgetary system, control ensures that steps are being taken to achieve the objectives outlined in an organization's master plan. They also serve to communicate the plans of organization to each employee and to coordinate their efforts. Accordingly, all employees can be aware of their role in achieving those objectives. This is why explicitly linking the budget to the long-run plans of organization is so important. The budget is not series of vague, rosy scenarios, but a set of specific plans to achieve those objectives. Budgets encourage coordination because various areas and activities of the organization must all work together to achieve the stated objectives. The role of communication and coordination become more important as an organization increases in size (Hansen and Mowen, 2003)^[10].

4.2. Activity-Based Budgeting

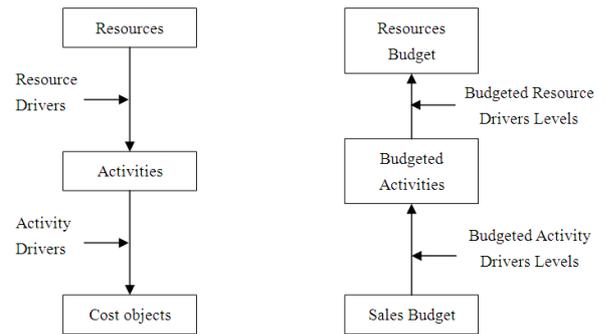
Hornegren *et al* (2007)^[13] presented most business organizations use budget to focus attention on company operation and finances, not just limit to spending. Budgets highlight potential problems and advantages early, allowing managers to take steps to avoid these problems or use the advantages wisely. A budget is a tool that helps managers both their planning and control functions. Budgets help managers plan for the future. However, managers also use them to evaluate what happened in the past. Study after study has shown that the budget to be one of the most widely used and highest rate cost-management tools for cost reduction and control. Advocates of budgeting go so far as to claim that the process of budgeting forces a manager to become a better administrator and puts planning in the forefront of the manager's mind. Actually, many seemingly healthy businesses have died because managers failed to draw up, monitor, and adjust budgets to changing conditions. The major benefits of budgeting can summary

as follow: (1) budgeting compels managers to think ahead by formalizing their responsibilities for planning, (2) budgeting provides expectations that are the best framework for judging subsequent performance, and (3) budgeting aids managers in coordinating their efforts, so that the plan of an organization's submits meet the objective of the organization as a whole (Hornngren et al, 2007)^[13]. However, in today's business environment, a number of organizations and people have been very critical of the traditional budgeting process. These critics argue that the traditional budgeting process does following: (1) reflect a top-down approach to organizing that is inconsistent with the need to be flexible and adapt to changing organization circumstance, (2) focuses on controls rather than focusing on helping the organization achieve its strategic objectives, and (3) causes resource allocations to be driven by politics rather than strategy. That is, political power in the organization drives resource allocations rather than the strategic needs that drive traditional budgeting (Kaplan 1998)^[15].

A recent approach to budget is activity-based budgeting that is based on ABC. Activity-based budgeting uses knowledge about the relationships between the quantity of production units and the activities required to produce those units to develop detailed estimate of activity requirements underlying the proposed production plan. The two main benefits of ABB are: (1) it identifies situations when production plan require new capacity – both physical capacity and capacity in people resources – to deliver much of support and service activities in organizations. (2) It provides a more accurate way to project future costs (Kaplan (2008)^[15]. Hansen and Mowen (2003)^[10] presented that the ABB begins with output and then determines the resources necessary to create that output. Ideally, the organization translates its vision into a strategy with definable objectives in order to create value. Ways of creating value include growing market share, improving sales rates, reducing expenses, increasing profit margins, increasing productivity, and reducing the cost of capital.

We can look at a budget from three perspectives: a traditional functional-based approach, a flexible budgeting approach, and an activity-based approach. Traditional budgeting relies on the use of functional-based line items, such as salaries, supplies, depreciation on equipment, and so on. The flexible budget uses knowledge of cost behavior to split the functional-based line items into fixed and variable components. The ABB works backward from activities and their drivers to the underlying costs.

Traditional budgeting focuses on the result, not the process or root cause. ABB, by focusing on the process, give managers guidance in the way to achieve the desired results. When activity-based budgeting is used, the root causes can be identified, and this knowledge can be used to effect process and cost efficiencies (Hansen and Mowen, 2003)^[10]. A comparison of ABC and ABB is shown in figure 4 as follow:



Source: adapted from Hornngren (2007)

Figure 4. ABC and ABB compared

ABB process is a reverse process of ABC approach. The above figure highlights the main concepts and differences between ABC allocation of resource costs to activities and products, and ABB does. ABB begins with the forecasted demand for goods (sales budget). It focuses on estimating the demand for each activity's output as measure by its cost driver. Then using the rate at which activities consume resources to estimate or budget the resource needed. ABB emphasis on activities and their consumption of resources, some managers believe that it is more useful for controlling waste and improving efficiency. According to Hansen and Mowen (2007)^[10], in order to build an ABB four steps are needed.

Step 1: The output of the department must be determined;

Step 2: The activities needed to deliver the output, along with their related drivers, must be identified;

Step 3: The demand for each activity must be estimated;

Step 4: The cost of resources required to produce the relevant activities must be determined.

It is critically important to see that ABB is based on expected output. Traditional budget often plans forward from last year's experience, while ABB plans backward from next year's output. The differences between the two approaches are more than semantic. In addition, the ABB approach, using resources and activities to create output, gives the managers much more information as well as ability to consider eliminating non-value-added activities. (Hansen and Mowen, 2003)^[10].

5. Activity-Based Budgeting and Activity-Based Management Integration

Controlling and improving efficiency are the primary objectives of a budget. As we analyzing above, ABB have many advantages compare with traditional budgeting. However, ABB just emphasizes the planning and control purpose of cost management. ABB lacks of in how to manage organization operating to achieve what ABB drawn. ABB drawn the target and encourages managers to works toward achieving the organization's goals. How can managers run the actual organization's operating to reach

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