

How to Develop a Model to Overcome the Difficulties of Implementing an ABC System

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ABSTRACT

In today's competitive world of business, having accurate information may be the key factor in distinguishing between the loser and the winner. ABC helps managers make better decisions about product design, pricing, marketing, and mix and encourages continual improvement by obtaining accurate information. Compared to the traditional costing systems, ABC can not only answer how much product cost is but also tell executives the factors triggering costs and the way to manage costs. This paper presents an approach for implementing of ABC. The results of experiment shows the rates of adopting activity based costing are now similar for service firms and manufacturing firms. However, Larger company are more likely to have adopted activity-based costing than smaller company, possibly because activity-based costing is more beneficial in larger company that have a diverse mix of products or services.

KEY WORDS: Implementation, Activity-based, Costing System, Traditional Cost Accounting.

1. INTRODUCTION

Activity-based costing (ABC) is a special costing model that identifies activities in an organization and assigns the cost of each activity with resources to all products and services according to the actual consumption by each. This model assigns more indirect costs (overhead) into direct costs compared to conventional costing models. Unlike traditional volume-based approaches, which are historically oriented, ABC concepts guide managers in seeking the best strategies to pursue in the future. This approach, apparently solved the inaccurate allocation of overhead by standard cost systems [1]. The Chartered Institute of Management Accountants (CIMA) defines this as "cost attribution to unit costs on the basis of benefit received from indirect activities e.g. ordering, setting-up, assuring quality" [2]. This product costing method can be a valuable tool in planning and managing costs not only in the manufacturing area, but also in all aspects of business operations, from product design to distribution. It enables managers to have a holistic view of cost management. In contrast to traditional cost-accounting systems, ABC systems initially accumulate overhead costs for each organizational activity, and then assign the costs of the activities to the products, services, or customers (cost objects) causing that activity.

In today's competitive world of business, having accurate information may be the key factor in distinguishing between the loser and the winner. Using more accurate cost information while determining the optimal product mix of a company may lead management to make better decisions, and as a result, may have a great effect on the success of a company.

This research is launched to 1) recognize the steps involved in ABC. 2) Determine the benefits of ABC versus traditional methods. 3) Determine the limitations of ABC. 4) Describe the steps involved in designing a model for implementing ABC. For this object rest of paper is organized as follows. Literature review section gives a review of the relevant literature. Specifically, it gives information about the principles of activity-based costing. Material and method section develops the proposed model that can be used to support implementation of ABC. Implication section presents results of implementing ABC. Conclusion section includes the conclusions derived from this research and the contribution of this research to the existing body of knowledge.

2. LITERATURE REVIEW

In the late 1980's, activity-based costing (ABC) gained the attention of academic researchers, consultants, and managers as a means of overcoming the disadvantages of traditional cost allocation methods. Cost accounting had traditionally allocated overhead to products or services using only one volume-sensitive driver, typically direct labor. For organizations with high overhead and a mix of products or services, using a single cost driver may distort cost estimates [3]. Traditional methods of allocating overhead were therefore believed to be deficient in terms of improving global competitiveness [4].

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At the present moment activity-based costing is considered to be a good costing system that can serve as a decision support system (DSS) for management. Initially, activity-based costing was perceived as overcoming the flaws of the traditional costing systems. In the USA, organization were eager to implement the activity costing system which had the great advantage that it could provide a better allocation of indirect costs to products in manufacturing industry.

ABC improves upon the traditional approach by using a two-stage allocation procedure and multiple cost drivers [5-7]. In the first stage, significant activities are identified and overhead costs are assigned to each activity in proportion to the resources used. Cost drivers are then identified for each of these cost pools. In stage two, the overhead is allocated from the cost pool to the final outputs, or cost objects, in proportion to the amount of the cost driver consumed.

During the late 1980's and early 1990's, the ABC approach was implemented in a number of large manufacturing companies. Managers armed with the ABC system were able to reduce costs, identify opportunities for improvement, and determine a more profitable product mix [8]. Because of its perceived superiority, ABC was expected to gradually replace traditional methods. The results of earlier studies suggest, however, that the rate of diffusion of ABC has been slower than expected [9,10]. Having in view the successes and failures of companies that considered implementing ABC, neither the former, nor the latter is absolutely right. It is necessary to install a good approach for implementation of ABC.

3. MATERIALS AND METHODS

A joint study by Cooper and Kaplan [11] identified four primary steps for designing and building an organization's activity-based cost model:

1. Identify and analyze activities performed
2. Trace the usage of organizational resources to these activities
3. Define the outputs produced
4. Link the activity costs to the outputs

In the following we describe these steps for implementing activity based costing

3.1. Identify and analyze activities performed

This is the planning phase for the ABC system where the needs of the organization are established. La Londe and Ginter [12]. People who have a strong understanding of the operations of the business should be involved. A multi-functional team is more productive than just working with a finance staff. In this stage the company's critical issues and difficult decisions are assessed. Accuracy and adequacy of the existing cost system are assessed. Two factors – the organization's culture and current approach to financial management – are critical success factors and an essential part of the design process.

In the first step of developing an ABC system, the organization identifies the set of activities being performed by its indirect and support resources. According to the ABC Guidebook (1995), the name, "Activity-Based Costing" implies that the managerial cost data cannot be applied until the activities are defined for the organization model or the selected portion of the organization under review by the project team. The creation of the activity model is not traditionally considered as an integral part of the activity accounting structure, but cost allocation cannot take place without it, hence it is the first step, and therefore, necessary knowledge to the activity accountant.

3.2. Trace the usage of organizational resources to these activities

According to Cooper and Kaplan [11] a resource usage driver should be used to trace resource costs to activities and a cost driver should be used to trace activity costs to individual customers or customer groups. Cost drivers should be chosen because the activity cost that they represent tends to increase when they increase (Figure 1).

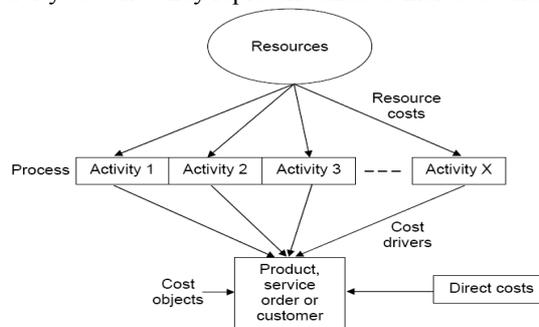


Figure 1: ABC Model

According to the ABC Guidebook (1995), the costs should be gathered and allocated within the organization at the lowest possible structural layer. This will normally be the smallest element that has an assigned manager, whether it is a team, unit, or branch. Where there are multiple teams or units with similar missions within a single branch or element, it is not necessary to differentiate, since the functions performed are more important than the organizational components. Having all of the costs at the lowest level greatly facilitates translation from the organization to the activity model. If costs are at too high a level, it will be harder to subdivide costs by functions. Costs are usually allocated based on interviews with managers on the functions. Estimates become more reliable when managers are closer to the actual work. The philosophy of the procedure is showed in Figure 2.

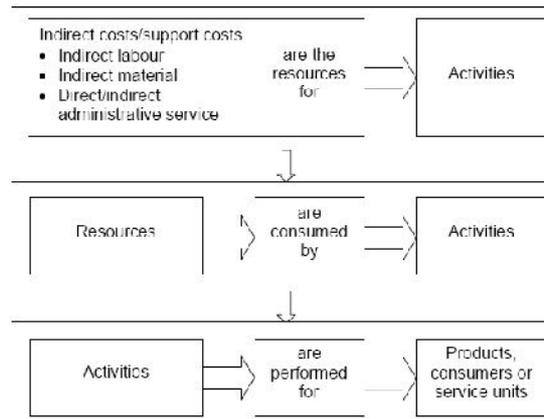


Figure 2: Activity-based costing philosophy, Source: Lewis (1995).

In fact, this procedure does not really differ substantially from that done by a standard costing system. The main difference is that standard costing systems drive indirect expenses only to other responsibility centres, typically production cost centres. ABC systems can also drive expenses to production cost centres where the activity is part of the actual product conversion process. But, in addition, the ABC system drives operating expenses to activities that are not directly involved in converting materials into intermediate and finished products, i.e. setup machines, schedule production runs [13].

After the activities have been identified the cost of resources consumed over a specified period must be assigned to each activity. The aim is to determine how much the organization is spending on each of its activities. Many of the resources will be directly attributable to specific activity centres but others (such as labour and lighting and heating costs) may be indirect and jointly shared by several activities. These costs should be assigned to activities on the basis of cause-and-effect cost drivers, or interviews with staff that can provide reasonable estimates of the resources consumed by different activities [13].

3.3. Define the outputs produced

The outputs in the ABC system are the cost objects, such as products, customers, territories, services or special projects. In this step, outputs with distinct, identifiable activities must be carefully specified. If the activities are ambiguous, the assignment of resource costs to activities will be inaccurate. All outputs must be identified so that the total activity costs will be accounted for and not charged to the wrong output.

3.4. Link the activity costs to the outputs

An activity-cost driver is a quantitative measure of the output of an activity and it links activity costs to cost objects. There are three ways to link activity costs to the outputs: direct charge, estimation and arbitrary allocation. In manufacturing processes, only direct material and direct labor are charged directly to the product. According to Cooper and Kaplan [11] a variety of coding schemes is used in designing the ABC system in order to summarize the classes of activities. Activity attribute is the name of concept coding schemes that facilitate reporting of activity costs.

According to Cooper [11] business activities can be classified along an important cost hierarchy dimension. Most common are unit, batch, and product sustaining and customer-sustaining activities as indicated below:

- Unit-level activities are the activities that have to be performed for every unit of product or service produced. The quantity of unit-level activities is proportional to production and sales volumes, i.e. inspection. Batch-level activities are the activities that have to be performed for each

- Batch or setup of work performed. Batch activities include setting up a machine for a new production run, purchasing materials and processing a customer order.
- Product-sustaining activities are performed to enable the production of individual products or services, i.e. maintaining and updating produce specifications.
- Extending this notion outside the factory leads to customer-sustaining activities. These activities enable the company to sell to an individual customer but are independent of the volume and the mix of the products and services sold and delivered to the customer, i.e. technical support provided to serve individual customers (Cooper, 1990:35).

Determining a software: Cost management software products are but tools which companies use in order to have more accurate information about their cost management objectives: target costing, customer profitability, and so forth.

A company must first determine what it wants from its cost management system at a conceptual or design level. Only then should implementation issues be considered, one of which is the selection of software to help in cost management process.

The research about the most famous ABC software packages starts with a 1994 article in which Borden made a review of the main ABC software players. The software packages commented in the article is grouped in two categories: the first five products are designed by independent software vendors, and the remaining four packages are developed by the big accounting firms.

4. RESULT AND DISCUSSION

Comparing the firms that have already implemented ABC with those still using traditional cost accounting, we find results comparable to those based upon the questions related to familiarity with ABC. Only the 215 respondents who provided information on the implementation of ABC in their companies are included in this analysis. Overall, nearly 22% of the respondents indicated that their firm had already implemented ABC. Figure 3 examines ABC implementation by economic sector and shows that implementation rates are quite similar across both the manufacturing and service sectors. There is no statistically significant relationship between ABC implementation rates and economic sector for firms in this sample.

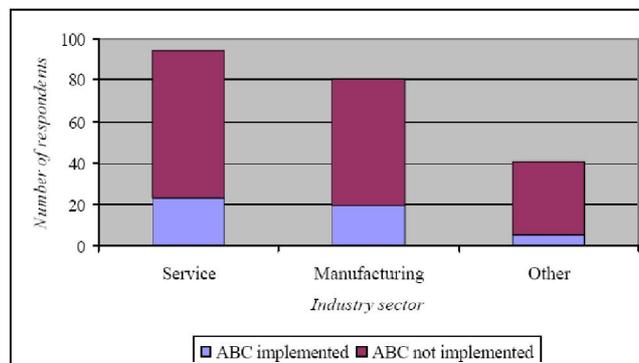


Figure 3: ABC implementation and industry sector

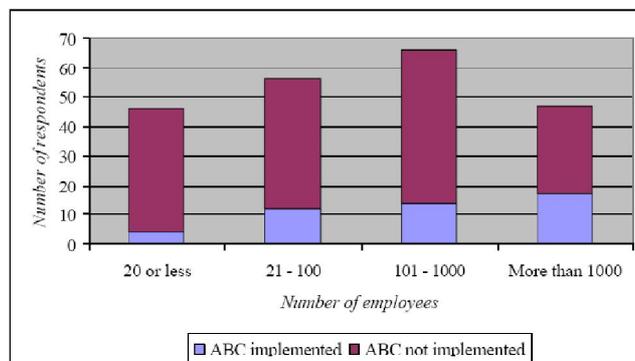


Figure 4: Implementation of ABC and firm size

The relationship between company size and implementation of ABC is examined in Figure 4. The Pearson Chi-square statistic indicates that the relationship between these variables is significant at the .05 level. As expected, the largest firms were the most likely to have already implemented ABC while the smallest companies were the most likely to still be using traditional cost systems. This is consistent with the finding of earlier studies suggesting that not many small companies apply modern managerial tools such as ABC [14]. Smaller firms may not have the diverse mix of products or services that would make the use of ABC beneficial. Also, small firms often operate in a business environment characterized by lack of resources [15]. Without a large staff of specialists, small companies would tend to use a simple costing system [14].

5. Conclusion

ABC has helped enterprises in answering the market need of better quality products at competitive prices. By ascertaining the product profitability and customer profitability, this method has contributed effectively to the top management's decision-making process. With ABC, enterprises were able to improve their efficiency and reduce the cost without sacrificing the value for the customer. This has also enabled enterprises to model the impact of cost reduction and subsequently confirm the savings achieved. ABC is a practical tool that can be used by companies of all sizes not only to better determine the cost of their products, but also to better understand why they cost what they do. In competitive environments, managers require better information, not only about their products and services cost, but also about the cost of the different activities needed to create these products or services. Traditional accounting systems do not provide this information. The activity-based management approach allows everyone in the organization to understand where costs are being incurred, why they are being incurred and how these activities contribute to a higher value added to customers. Additionally, ABC seeks to identify activities that can be eliminated or improved. It can also be added that, if all company employees follow the activity-based approach, communications improve and changes are easier to make.

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