

## ORIGINAL ARTICLES

### Activity Based Costing System

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#### ABSTRACT

Recent work in the field of manufacturing, cost accounting and related activities has shown that rapid development in manufacturing industries, competition in domestic and international market, technology innovation and consequent change in the cost of the product (combined overall cost of the product) is one of the most current significant discussions in academics and practice. This shows that producers of products and services to better understand the new accounting system exist they need a rapid speed in information system. If the evaluation of management accounting system is not compatible with organization's corporate objective will result to a negative adverse effect (disrupt) on the changing environment. Organisation operating in dynamic environment with required information must rely on management accounting. In this new trend, management accountants must also develop and apply methods that respond to company's requirement. In this regard management accountants (practitioners) developed the system requirement with utmost caution and long term focus. ABC is developed to determine the cost of the product because of its significant advantage over traditional system (cost based on volume). This discussion focuses on the aim of ABC system in calculation of manufacturing overhead and elimination of the traditional system of accounting. Despite the efficacy of ABC system yet is faced with resistance by employees, costly and complex in its application, untimely and reliability of the information, even total quality management cannot solve this problem. This paper intends to examine and be familiar with ABC system in manufacturing companies.

**Key words:** ABC system, traditional system and overhead manufacturing cost.

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#### Introduction

In the recent past there is a shift from conventional business to business competition to drastic increased in competition in domestic and foreign markets with responsive innovative information technology. Followed by changes in the cost of the products (combined associated cost), producers of goods and services need to search and a better understand the concept of accounting system with regard to fast and accurate speed in information system. However, in the past decade manufacturers were not producing variety of products. Labor (direct labor), is the main ingredient in the product cost structure. But, currently due to variety of customer demand and products, decreased of labour rate and wages and increasing of overheads, allocation of overheads cost of the product and services is difficult to calculate. Therefore, companies should adopt new methods for calculating the cost and a global world view approach to such overheads system calculation. Currently, different improved methods of allocating these overhead are available. The best method so far is ABC system which is related to manufacturing overhead cost. This new method (ABC) has already attracted most attention because of its flexibility and ability to allocate overhead. Many companies have already chosen and implement the ABC system in order to improved cost and performance of the products and services. Henced, this is based on the "market economy" perspective.

The main objective of management accounting systems, is to provide relative and timely information for the management of an organisation. Thus, management is in a better position to support and appropriate competitive measures based on cost, quality and profitability. Cost accounting can calculate the cost of the product which aid management in planning, analysing and monitoring to determine the price of the product. The costs of the products include direct materials, direct labour and manufacturing overhead. Normally direct materials and direct labour are easy to ascertain, because it is related directly to the product or specific (order tracking can be detected) production activity. But the problem of manufacturing overhead cost is the determination of which items of overhead is related to product cost. On the other hand, the complex structure of the company and technological innovations lead to a decreased of direct materials and labour, nevertheless, overhead cost of the products seems to be increasing. Therefore, the aim of cost management system is to identify, evaluate and eliminate the overall non value adding items in cost of manufacturing a product. ABC system of accounting is

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based on the activity level of work and process undertaken in manufacturing of products and service companies during the course production. This system claims that products and services are not consuming resources directly, rather the activities involved leads to allocation of such cost (causative cost of product). As a result the cost of products and services are based on the accumulated benefit of the activity. The implementation of the ABC system on the complex new production methods and its management has fervently increased. Although, this system outperforms the traditional system of cost accounting management, but there is no consensus as to how to solved all this problems due to the fact that there exist non availability of correct and accurate information which is necessary for management corporate decision making and planning to be executed efficiently. The aim of this paper is to critically examine, investigate and discuss the advantages and disadvantages of ABC system (Innes, and Mitchell., 1991).

*Literature review of ABC system:*

In 1990s the cost accounting was a part of managerial accounting. ABC proposed by Johnson and Kaplan (Johnson and Kaplan1987) because of the weaknesses and shortcomings of the cost volume system. They subsumed that traditional cost system is not only lacking useful information but tends to mislead managerial decision making because of inclusion of irrelevant information. In their book titled “irrelevant information, rise and fall of management accounting”. The activity of the system is the source of creating the cost as a result make a proposition that, allocation of the cost of the products is based on the already activity which has taken place. In line with the aforementioned proposition (Kohler and Astabas, 1930) since, then to a great extent has contributed in the practical and theoretical design of such system of accounting.

*The necessity of applying the ABC system:*

During 1980s, uncertainty exists among many managers on the complexities and divergent chaos as a result of applying a traditional cost accounting system. Some companies due to been unsatisfied from the common accounting system started utilising the ABC system. However, there are several reasons which make management to accept the ABC system, the first reason is; allocation of some items of manufacturing overheads to fixed overheads, labour is costly. On the other hand, the allocation of cost is optional. And in some cases, allocated items are not related to the products. If company want to increase their profit they resorts to; elimination of the unrelated cost of products and since the elimination of unrelated cost is not possible as a result lead to using ABC systems. Invariably, ABC system application provides relevant information relative to decision making process. Cost accounting system provides information in order to aid executive managerial commitments towards managing and monitoring of the cost of the product. Managers expansion of the production line, signify the fact they are trying to coordinate the accounting with new process. A well managed activity relative to reduction of the cost of the product ensures a sustained competitive advantage. Managers are more concern with the current traditional system hence tends to focus on the financial accounting which rarely provides relevant information to determine and evaluate the cost of the product. By and large this traditional view lead to inaccurate decision in the perspective of products, yield and company performance. The recent philosophy of information technology innovation makes it easier to gather, assess and analyse information needed by the ABC system. Cost of the product is ascertain due to implementation of the ABC system. There are variety of key performance indicators which shows the significance of the new methods of cost evaluation such as:

1. Choosing direct labour hour for calculating of overhead absorption is erroneous in practice, because in production unit resources are often unrelated to direct labour hour which leads to unprofitable production.
2. The cost of the product in traditional accounting is distorted due to using only one measure for allocation of manufacturing overhead within the products. Because in production process involves a connectivity of related and unrealeted activities, which makes it improper to use one factor for allocation of product cost.
3. More complex production processes
4. Marketing employees are not satisfied with the cost of the product because of low volume sales (due to increase in the cost of product)
5. Most managers are not comfortable with the cost of the product.
6. No relationship between sales and profit (sales increase vis-a-vis decrease in profit)
7. Highly profitable products are not sold because of lack of substitute product that will compete in the market.
8. Reduction in labour (direct labour cost) and increase of general items (manufacturing overhead cost) due to technological innovation (high production automation). Overall change in the composition of cost of products, labour downsizing ultimately the cost of the product now is direct material and manufacturing overhead (the above mentioned requires ABC handling principles).
9. Diversification of production ( production of diverse products or different services)
10. Low pricing of products by competitors (lower sales price)

11. Some products identified as profitable products while its price determine based on market price
12. Responsive to customer Satisfaction and increasing the quality of the products at a lower cost
13. Consistent activities for sustainable competitive advantage i.e countries like Japan for instance, applied the new accounting technique
14. Some researches undertaken were leveraged to use the new method due to its advantage over the traditional method.

#### *The Importance of ABC:*

ABC is an important component in the accounting environment it plays a key role in the production and cost accounting measures. It is based on two stages:

Determine the important activities and manufacturing overhead of each activity, the determination of this overhead comprises of repository of activity cost. After determining of manufacturing overhead for repository of activity cost, the cost of repository is determine. Secondly, manufacturing overhead of repository cost for each product line is ascertain to a specific driver, for employing such techniques companies can established a new department as an accounting activity system section. This department is to be charge with the responsibility of overlooking revenue and cost of each activity. Thus, planning, managing and monitoring of such an activity for the betterment of a firm. With the support of the management this department can organise each activity as a profit center. The key role of activity accounting unit are (Eyske, Frause, and Rosentiel, 1997) support this idea:

1. Resource allocation is determine based on the activities and plan
2. The revised activities, correlate to determining, evaluating and planning
3. Cost is charge according to activities

Therefore, ABC system is an information system which shows the cost and profitability structure in an organisation. By applying this system (responsibility accounting) appropriation will be fully utilized.

#### *Elimination of Non Value Adding Activities in ABC System:*

ABC system was widespread in the academic discourse and practice that a number of organizations sought to determine the cost of the product according to the different activities relating to specific product. This information will help managers to identify non value added activities, leading to resource wastages, disruptions among others. This involves inefficient or high wastage or overall does not have any value added. For instance activities such as storage (stock) planning, moving from one warehouse destination to another and disruptions in production process (order of material), investigation, monitoring, control that do not add any value in the value chain stream. The information from this cost method encourages manager to revise productivity activity more expansively from the normal perceived expected cost until lower cost is feasible.

#### *Relationship between activity based Management (ABM) and activity based costing (ABC):*

ABC is essentially a subset of ABM, and ABM is applied as information based activities in order to improve activity management. The aim of ABC, is to increase the value of product and services delivered to customers and also increase profitability through achievement of added value with lower cost. ABM on the other hand, is using information based on the activity from the following perspectives:

1. Examine and implement corporate strategy priority
2. Opportunity to reduce cost and improve product quality
3. Identifying an effort to improve and eliminate non value added activities
4. Capital expenditure is directed towards the most profitable activities

#### *Comparison of ABC and VBC System:*

However, these rapid changes in the new accounting methods of managing manufacturing production in the past decades has seen a significant development and diffusion of the best accounting system in many firm. Both ABC and VBC are quite similar in some respect unless:

1. In ABC system the center of indirect items is more than the traditional cost system, that is to say ABC uses more cost drivers
2. ABC manufacturing overhead absorption is determined based on the activities rate which may be one overhead absorption rate or more. While in traditional cost accounting system is on one absorption overhead cost rate which is based on direct labour or machine hours.
3. ABC is more complex and costly while traditional cost accounting system is simple and less expensive.
4. ABC is more suitable for firms that are capital intensive while traditional is based on the labour engagement.

5. If the companies can produce various products, the result of ABC and traditional cost system has a significant difference with each other. And if there is no variety of products (a product) the result of the both system will not be differentiated.
6. ABC system shows the high cost product as having low volume while the low cost as having high volume.
7. Cost drivers used in ABC system is financial variable and nonfinancial variable. While in traditional system the cost driver is just financial variable.
8. ABC system usually chooses the optimal combination of the product (select an optimal method of production between two or more method of production). But, traditional cost accounting system for managerial decision in order to choose the optimal combination of the product is complex and misleading.
9. In traditional cost system is based on allocating indirect items to the cost of product which may or may not be actually incurred. While in ABC is usually actual.
10. The main target of traditional cost accounting provide information relative to profitability of the product, but the ABC system is to provide information in respect to customer satisfaction, quality products, competitiveness at an international level and ultimately the profitability of the product.
11. Traditional cost system is employed only for a simple and standard product line. While ABC system is used for simple and complex product line.
12. In traditional system of accounting the cost of products includes direct material, direct labour and manufacturing overhead. While in ABC system the cost of product includes direct material, direct labour, manufacturing overhead and other production items such as quality control cost, competitive etc.
13. In traditional cost system it involves short term view of managers by dividing manufacturing overhead into fixed and variable cost. While in ABC system is a long term view of overall manufacturing overheads considered as a variable cost.
14. In traditional cost system there is no cause and effect relationship between cost factors and overhead items (such as direct labour hours). While ABC system is based on selected activity and overhead item is related.

#### *Advantages of Using ABC System:*

ABC system because of its several advantages is used in most companies, the most important of these systems is that it provides detailed information regarding overhead item, which lead to managerial right decision making for calculating the cost of products and services. The other advantages of these systems include (Cokins,2004):

1. Better understanding of cost of product and creating a logical and accurate sales price for products.
2. Better understanding of opportunity to reduce cost of mentioned items in a desired manner through its emphasis on activity that overhead is high.
3. Changes managers attitude towards indirect items of product (manufacturing overhead cost)
4. Motivate manager to monitor and reduce the indirect cost of a product
5. Opportunity for designer of product to reduce cost of product by applying the new insight and how to better, manage resource and expenditure.
6. Reduce production cost by eliminating non value added activity and applying other activity efficiently.
7. The exact calculation of inventories (finished and work in process) and all other expenses (cost of goods sold) help to prepare financial statement and management report.
8. Reasonable application of accounting principles and assumptions such as principle of matching revenue with expenses and cost principles.
9. Identify and eliminate products with high actual cost.
10. Choosing a better combination of product through accurate calculation of product and services cost.
11. Relative profitability of a product and company is identified.
12. Justification of marginal (profit) sales of products.
13. Facility profitability
14. Improvement of cost system and allocate the cost of the company favourably
15. Applying an appropriate analysis of absorption cost system and variable system to identify the behaviour of overhead cost in relation to cost factor.

#### *Disadvantages and Difficulty of Using ABC:*

Although, ABC system has advantages it also have its own disadvantages and difficulties as well. Some of the disadvantages and difficulty of this system in the companies is described as:

1. Like any other organisational change applying the ABC is faced with serious resistant from employees and managers disagreement. This system is often looked at as a threats for management of the company. The extant literature has it that many employees and managers are opposition to this system. Employees and

- managers of companies fear the acceptance of ABC system because it leads to changes in the entire firm's current power structure.
2. Training for staff at all levels to applying ABC system recorded another difficulty.
  3. Due to problems in data collection system in ABC method applying the standard cost system (standard figures) is faced with numerous problems regarding manufacturing overhead.
  4. In some companies the benefit of using some systems such as TQM, JIT etc have been developed, while applying the ABC the implication is that it caused many problems.
  5. One of the obstacles to implementing the ABC for compatibility is needed for appropriate management intellectual thinking and plan. However, companies are now updated that management of activities is more difficult than its application.
  6. Under ABC system each repository often is decomposed to activities and identify and gather related information require multiple investigation. Also computing variety of absorption rate is complex and need much expenditure to its application. Therefore, will reduce profit in short term. That is why some managers are not willing to implement this system.
  7. Identify driver activities of cost is faced with problems
  8. In some cases due to lack of competition between company production unit for selling products, managers are skeptical to implement this system.
  9. Lack of attention to customer needs results to some of reasons for reluctance to applying such a system.

#### *Conclusion:*

Today many companies are faced with increasing competition. More technological upgrading, quality products, changing consumer needs, have direct influence on competition as well. Invariably this leads to manufacturing companies to improve production system with an automated and flexible production process responding to customer demands. Consequently, both domestic and international companies require consistent innovative improvement for competitive advantage. The new production system with high quality serves as a substitute to the existing products in the market, new processes must continuously be use to produce more effective product. But, companies identified with the products inaccurate pricing due to traditional system approach. With this kind of problems ABC system was implemented in various manufacturing companies because the realization of the advantages accrued to ABC over the conventional system of accounting. ABC system is designed as a useful guideline for managerial decision making for high productivity and profitability. But implementation of this system has problem of complex implementation, costly and resistance of employees, difficulty and unreliability of data collected which is supposedly aid in corporate management decision making.

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