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WHY ABC (Activity-Based Costing)?

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ABSTRACT

Activity-Based Costing (ABC) system is a fairly new management innovation. Basically ABC system improves the accuracy of product and service costing which is very important in today's business environment. Indirect costs are becoming more prominent with today's business where the emphasis is more on capital and technology intensive mode of operation. With intense competition, the need for the indirect cost to allocated accurately is even greater. Traditional costing system which emphasize on volume based allocation system is simply not adequate to handle the task of allocating indirect costs accurately to product and services. Empirical evidences found through out the late 90's strongly suggest there are benefits to companies from adopting the ABC system.

INTRODUCTION

The traditional costing system in allocating indirect overhead cost has its limitation in the present business environment. It often uses too few cost drivers, mainly machine hours and labour hours, to allocate costs to products and services. This resulted in allocations of indirect overhead cost that are overly broad averages, and managers are prone to make erroneous decisions about pricing and product emphasis. Hongren (1996) pointed out, using traditional costing system may lead to two possible outcomes. The first is a product or service may be overstate, especially the one that is produce in large quantities. In this case, managers are reluctant to engage in price competition with competitors as he is being misinformed by the traditional costing system, resulting in an unnecessary loss of market share. The second is a product or service may be understate, especially when it is produce in small quantities. Similarly, managers may make erroneous decision of setting the price too low, resulting in monetary losses. The scenario painted above may be extreme, but it reflects the general need for a more accurate costing system to help managers in decision making, especially on product costs and product-line profitability.

Kaplan (1986), a renowned management accounting researcher has warned the accounting fraternity of the need to stay relevant by improving the accounting system. He lamented that while businesses were making significant changes in the manufacturing operations, it seemed no comparable changes were made in its accounting and control system. The traditional costing system had been designed to accumulate cost and not to measure production efficiencies. The absorption rate used such as labour hours to allocate costs may not be relevant in the present manufacturing process. In the industrialized countries, the emphasis of manufacturing process is more on technology and capital intensive. The use of direct labour and material as cost drivers are becoming comparatively less significant by the days. In Malaysia a spokesman of a German plant Medical-Latex (Dua) Sdn Bhd, Karl-Heinz Rathsam, has pointed out only 5% of the total production costs of his company comes from the material that is rubber latex (NST, B1, Dec 2001). It means a great percentage of this company's total production cost is non-material or indirect costs that have to be allocated into each unit of product. The problem is the consumption of indirect costs does not usually vary proportionately with the volume or machine hours, or labour hours that are basically the cost drivers use under the traditional system. Kaplan further pointed out, when the traditional costing system was first devised 80 years ago, the emphasis then is on using labour and material efficiently, which apparently is not the case in many of today's businesses which are mainly driven by automation and technology.

Obviously, the issues raised by Kaplan and the accounting fraternity in the 80's on the deficiency of traditional costing system provide the impetus for others to search for a better costing system. A more accurate cost allocation system is vital in today's businesses. It is even more so to a business with high product diversification and facing stiff competition. On the global scenario, the opening of global economy for members of WTO (World Trade Organization), AFTA (Asean Free Trade Zone), NAFTA (North American Free Trade Zone), and the like, mean stiffer competition for businesses in those areas including Malaysia. Certain companies that have been enjoying the market protection provided by the state authority, like Proton of Malaysia, would have to have accurate costing of its product to enable it to engage in strategic pricing once the protection barriers are lifted.

The introduction of activity-based costing (ABC) in the mid 80's provides a better tool to allocate indirect cost to products and services. Initially, the response was lukewarm as companies are sceptical of ABC's usefulness. To compound the matter, most of the management accountants in the 80's and 90's are not well train on this method, hence very few have adopted ABC system in allocation of indirect overhead costs. However, the sheer need to be cost accurate and competitive in the modern business environment has forced some companies to adopt ABC system. A survey

made by Ashworth and Evans (1996) found businesses nowadays need changes urgently largely driven by the pressure on costs in the face of intense competition. Apart from giving accurate costing on product, ABC system can help the management to identify and eliminate duplicating process which would be a cost saving to the businesses. Another survey on the implementation of ABC system among large manufacturers in The United State conducted by Shim and Stagliano (1997) suggested many manufacturing companies are interested in the ABC system with 27% of the respondents indicate they have adopted the ABC system. The reasons some companies gave for not implementing ABC system were insufficient knowledge and insufficient training on ABC system.

ACTIVITY-BASED COSTING FOR GREATER COST ACCURACY AND COST EFFICIENCY

A common cause of inaccurate product costing is the usage of a single cost driver or double cost drivers under the traditional system and are widely seen today as obsolete. The cost drivers, namely the labour hours and machine hours, are too simplistic and resulted the resources being allocated to products and services in a uniform-way. However, different products and services use resources in a non-uniform way. ABC system eliminates this problem by using many cost drivers to increase product accuracy.

In many of today's business operations, enhancement in productivity and efficiency is achieved by investing in technologies and machines. This would comparatively increase the proportion of indirect overhead costs in the production cost structure. A significant percentage of these costs are not unit-based costs like product-sustaining cost and facility-sustaining cost. To allocate these costs using unit-based cost drivers such as direct labour hours or machine hours may not be appropriate. It may be more appropriate, for instance, to allocate research and development cost base on the time spent on each product line.

It is cited in the Fortune magazine edition 116, how the erratic sales of one of Rockwell International company lines of truck axles baffle its managers. What is more baffling is one of the company's star product was losing market share. Investigation subsequently revealed when the indirect costs are applied to products in direct proportion to direct-labour cost, they have resulted in major distortion in the product cost. The product cost for high volume axles were approximately 20% too high. The firm's practice of basing prices on reported product costs resulted in the overpricing of the high-volume axles and consequently Rockwell's competitors entered the market.

Implementing ABC system requires accountants to seek information on the firm's activities. This includes listing all kinds of activities happening in the manufacturing process such as material handling, inspection, process engineering, and product enhancement. Hogren, Foster, and Datar (1996) classified these activities into four levels of manufacturing costs. The levels are,

a. output unit-level cost,
b. batch-level cost,
c. product-sustaining cost, and
d. facility-sustaining cost.

At the unit-level, the activities performed are proportional to production and sales volume. The usage of traditional cost drivers such labour hours, machine hours, and sales dollar to allocate indirect cost do not significantly result in products or services to be undervalued or overvalued. It is at the batch-level, product-sustaining level, and facility-sustaining level where the traditional cost drivers fail to capture the activities performed. Most of the activities at these levels do not relate to labour hours or machine hours. It is more appropriate to capture these activities using cost drivers like the number of set-up, number of customer orders, production orders, total production runs and material movements.

Another benefit of implementing ABC system is accountants are more aware of the opportunities to reduce cost. The listing and documenting of activities would expose wasting activities and those activities that could be improved. In this way, the management could be better informed on the use and deployment of organization's resources.

RESEARCH FFINDINGS ON ABC SYSTEM

A research in Canada was conducted by Armitage and Nicholson (1993) with the objective of looking into the reasons behind the adoption of ABC system. This research found 14% of the respondents have implemented ABC system and another 15% of the respondents considering to implementing ABC system. The reasons for adopting ABC system according to ranking are as follows:

1 More accurate cost information for product pricing with 61% of personnel interviewed cited this reason.
2 More accurate profit analysis with 61% of personnel interviewed cited this reason
3 Improve performance measures with 43% of personnel interviewed cited this reason.

4 Improved insight into cost causation with 37% of personnel interviewed cited this reason.

This research indicates accuracy of cost as the most important reason and better insight of cost causation, interpret as cost control, as the forth most important reason for companies in adopting ABC system.

The notion that accuracy of cost and greater cost control as among the reasons why companies adopting ABC system is supported by another research made by Clarke (1995). The objective of Clarke's research is to investigate the benefits management have upon adoption of ABC system among manufacturing firms that have adopted ABC system in Ireland. The benefits to the management, rank according to percentage of response are,

1. more accurate cost information for product costing with 71% respondents
2. improved cost control and management with 66% respondents
3. improved insight into cost causation with 58% respondents
4. better performance measure, and
5. more accurate customer profitability analysis.

A case study on a utility company, Kansas City Power and Light (KCPL) was conducted by Merrill Lynch, a leading U.S investment banker, in 1994. The study focuses on the uses of ABC system to gain competitive advantage. The major finding form this study is that after implementing ABC system, managers began to check the dollar amount being spent. Before, the managers focused more on costs incurred by their own cost centres. With ABC system, the managers can see not only the total dollars being spent company-wide for a process, but also the cost centres incurring the costs and the business unit which the costs apply.

Another case study was made by Davis and Darling (1996) on the usage of ABC system in Super Bakery Inc., a bakery company. The bakery company is a supplier of donuts and other baked foods to the institutional food market. The company's main concern has been to coordinate and control the various functional activities performed outside the company by brokers and contractors. The challenge consists of two problems, controlling the quality of products and the cost of products. The usage of ABC system enables the company to track the profitability of each customer (broker). Another finding is ABC system enables the company to track the performance of contractors more closely. There is also an improvement in handling the cost after adopting the ABC system. With the ABC system, the handling cost is assigned based on the number of orders that have to be processed. This leads to a much more accurate cost of processing order for each customer (broker). Previously, the handling

cost of sales order was allocated on a percentage of sales. This has resulted in the escalation of handling cost and inaccurate handling cost per customer.

Yet another case study made by Borjesson (1997) on Hagglunds Drive AB, a large Swedish manufacturing firm producing large, high torque hydraulic motor and power transmission unit. The market for the firm's products is highly competitive with plenty of substitute products from other manufacturers. The firm also found it is impossible to change its product mix and thus it is impossible to increase profitability. Therefore the only solution is to reduce costs by focusing on controlling the manufacturing activities. After the ABC system was implemented in Hagglunds Drive AB, then it was possible to control the indirect cost.

On the local scene, a study made by Daud (1998) with the objective of relating the variables influencing the adoption of ABC system among selected largest Malaysian based manufacturing companies found Malaysia companies are slowly adopting the ABC system. The variables found to influence these companies are the high product diversity and higher indirect cost. It is not too speculative to reason out the need for accurate product costing is more wanting when a company has many product lines and has substantial percentage of indirect cost in its cost structure. Although many of the company participated in this study are foreign-owned, it has nevertheless refreshing to know Malaysian based companies are not lagging behind their western counterpart in taking up new management innovation like the ABC system.

Having presented above the benefits of adopting ABC system, there are 'failure-story' on the implementation of ABC system by companies. The implementation of ABC system in Hewlett Packard Colorado Springs Division in 1993 has brought out a mixed result due to the poor choice of cost drivers and too many cost drivers. At Hewlett Packard, practically just about every activity in the manufacturing process is given a cost driver. As a result the Divisions had about 20 cost drivers for process areas in manufacturing and the Division simply lost focus on the critical areas that it should have been concentrated. Another reason cited for the failure of ABC system at this company is the lack of proper administration of the ABC system. Successful ABC implementation requires among others a persistent follow through by the management.

CONCLUSIONS

The increase use of technology and capital in manufacturing operations resulted in higher proportion of indirect fixed overhead in a company's cost structure. The complexity of some of these costs cannot be allocated accurately to products and services using the traditional costing system. The traditional costing system uses too few cost drivers and based on volume has resulted in a broad average allocation of

cost. Such allocation can lead to two possible extreme results. A product can be overstated and understated. Managers relying on the traditional costing system are at the disadvantage when it comes to price competition and are prone to make wrong decision.

Unlike the traditional costing system, the ABC system relies on many cost drivers to allocate cost accurately. The cost drivers are chosen during the implementation process, where a company's activities are documented. It involves many parties such as the engineers, production managers, sales managers, and other to ensure the appropriate cost drivers are identified and selected. Assuming the appropriate costs drivers being chosen, the costing of products and services per unit will be more accurate.

The dominance of market economy in this new millennium couple with the opening of markets around the globe spells intense competition lies ahead. More and more companies are relying on technology and capital to hold on to their product edges or more likely just to survive the competition. Malaysian companies are no exception and the adoption of ABC system might just be the answer to stay competitive in the market.

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