

Activity – Based Costing

Is It From Pain to Joy?

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Abstract—In recent years the world of costing systems have shown major developments in costing techniques, specifically a major contribution of activity-based costing (ABC) in manufacturing and services organizations. This study aims to identify the reasons why activity-based costing is preferred to traditional costing tools in modern manufacturing environment; why managers are showing their interests in the adoption of ABC to improve their financial performance, managerial and production efficiency; how ABC helps managers to eliminate production inefficiencies; how ABC facilitates adaptive and generative learning in organizations and the usefulness of ABC in vendor selection, service sector and SME's. Traditional measurement methods of cost accounting proved insufficient on these issues, which leads to the invention of activity-based costing.

I. INTRODUCTION

Traditional method of costing has the essence of dealing with overheads by splitting them into variable overheads and fixed overheads. If we are using absorption costing, we will first decide the suitable basis for absorption, then we will absorb all the overheads on that basis. The traditional costing methods were designed around 1870-1920. It changed rapidly from 1960's – particularly 1980's due to the problem of increased lack of relevance of traditional cost accounting methods. Activity – Based Costing (ABC) is based on the insight that activities create costs, while products consume activities. ABC is a costing technique that first identifies the major activities that give rise to overhead costs, then groups activities having same cost drivers into cost pools and finally assigns total overhead costs to each product or service by calculating absorption rate for each cost pool.

Traditional systems often rely on unpredictable allocations of indirect costs; particularly they rely extensively on volume-based allocations. Volume based activities are those which have high correlation with number of units produced. It will lead to over costing of high volume products and under costing of low volume products, which will further provide misleading information. So if you want to control your costs, you have to first

control the activities that cause the costs to be incurred. ABC may help to identify value added activities and non-value added activities, which will help managers to control their costs by eliminating non-value added activities or at least reducing number of cost drivers of non-value added activities. There are two phases of activity accounting. First phase is called Activity-Based Accounting (ABC) where it tells us how we can improve our competitiveness by managing our resources more efficiently. It does not only provide accurate costs but it is a mechanism for managing costs. Second phase is called Activity-Based Management (ABM) which is an important tool for achieving continuous improvement. Managers generally achieve improvements by managing activities in four ways:

- Activity reduction – by reducing the time required to perform activity.
- Activity elimination – by eliminating the entire activity.
- Activity selection – by selecting the low-cost activity from set of activity alternatives.
- Activity sharing – here managers make such changes that allow them to share activities with other products to achieve economies of scale.

This study aims to present that ABC is preferred to traditional absorption costing in the modern manufacturing environment because now indirect costs constitute greater proportion of total product costs due to product's complex specifications, widespread use of computer control and automation and increased use of just-in-time (JIT) production methods which will ultimately improve the financial performance of organizations. When you implement ABC in your organization a change in the management structure should occur, managers can adapt ABM by using the information provided by ABC to achieve required profits. Application of ABC is a team work and requires a lot of manpower training.

II. KEYWORDS

Activity-based costing, activity-based management, modern manufacturing environment, sport organizations, cost accounting, management accounting.

III. LITERATURE REVIEW

Some authors reported that there is an association between use of activity-based costing and improvement in financial performance of organization and results show that there is indeed a positive association between ABC and improvement in financial performance when we use ABC with other strategic initiatives such as total quality management (TQM) approach, just-in-time (JIT) manufacturing methods, business process reengineering (BPR) and flexible manufacturing systems (FMS), these strategic methods will help to reduce non-value adding activities when we use ABC in specific conditions such as in complex and diverse firms, where managers give importance to costs in decision making process, where there is limited number of intra company transactions and unused capacities and where there is huge competition.

Whereas if company is having sophisticated technology, cost of data collection and processing will be reduced, this will make the use of ABC more beneficial. It shows that usefulness of ABC is having positive relationship with sophistication of technology. If you do not have enough technological resources first update your resources otherwise you will have to bear huge costs (Sohal & W.C. Chung, 1998). It is ABC's beauty that it deals with non-volume related costs and provides true and accurate costs of products (Sohal & W.C. Chung, 1998 – p, 137). You can achieve better results by allocating indirect costs to total product cost (Snyder and Davenport, 1997) and in this way management will have better control over decision making process. We can also combine the benefits of ABC with the benefits of cash flow based accounting with the help of logistics management accounting framework to support logistics management decisions (van Damme and van der Zon, 1999).

People should understand the difference between value-added and non-value added activities by understanding the reasons why an activity is called as value or non-value added (Miller 1996). ABM helps managers to eliminate inefficiencies by redirecting resources towards value adding activities (Needles & Crosson 2002). Horngren (1977), Miller & Vollman (1985) and Johnson & Kaplan (1987) argued that if you want to increase managerial and production efficiency, you have to deal with some hidden factors very carefully that influence the general industrial and manufacturing expenses. Because of the deficiency of traditional costing technique in improving global competitiveness, organizations hesitate to use it (Johnson, H. T., 1990).

ABC is a tool that helps managers to think about organizations more effectively and about how value is created (Cooper et al. 1992). In ABC and EVA system, rate of consumption of resources and capital demand is included in cost of activities. This increased competition and technology has led manufacturing companies to adopt new manufacturing techniques and methods such as TQM, JIT and FMS (p, 286). This model suggests us that if you want to implement ABC in your organization, you have to first consider conditions and factors that favor and are against

the application of ABC (p, 289). In this way you can achieve your profit objectives with the help of ABC and ABM (p, 292). ABC is a guide that gives management actions a direction towards high profits (Cooper and Kaplan 1991). Application of ABC requires total commitment from top to bottom; management should clearly understand the benefits offer by ABC by communicating achievable objectives to everyone in the organization. It is management's duty to educate and train everyone in the organization about the system which is going to be implemented so that everyone understands the complexity of project and its impact on the performance of organization (Sohal & W.C. Chung, 1998 – p, 144). ABC facilitates adaptive and generative learning by supporting continuous improvement at individual and organizational level and management of existing knowledge (Argyris 1977; March 1991; Appelbaum and Goransson 1997) as well as development of a learning culture to let organizations become more empowered and team-oriented (Cooper et al. 1992; Michelman et al. 1999). Try to keep implementation process as simple as you can otherwise employees will get irritated. You must have enough resources and time to get ABC success. ABC/M success relates with top management support, training of staff, availability of resources required to implement this system, performance evaluation and compensation systems (Mitchell, p, 66; Shields 1995; young 1989).

Determination of selection criteria depends on the needs of the firm and level of success of selection criteria to fulfill these needs (Swift Owens 1995; Brown 1998). By using ABC for vendor selection process, purchasing company will be able to predict and see internal production costs caused by the vendor, can design different situations by reducing different costs drivers, this system will help vendors to review their strategy by the indication of customer's satisfaction and offers improvement in vendor purchaser relationship (Roodhooft and Konings 1996). Because of the usefulness of ABC/M, it is not even adopting by manufacturing companies to get competitive advantage but many services organizations (Innes & Mitchell 1995; Drury & Tayles 2000) and SME's are taking advantage from these management accounting systems. The implementation of ABC in SME's can help them in improving their financial and non-financial performance. It will help to reduce direct labor components, continuous skill development, reengineering and developing positive attitude of workers that contributes toward successful implementation of operations (Sage and Fox 1989). Chan, Keung and Chung (2000) conducted a study to invoke an empirical approach with the help of which we can design an ABC template to use it as a tool for easy assimilation in an SME environment. No doubt ABC was first designed to fulfill the cost management needs of manufacturing and industrial organizations but researchers soon realized that they can also apply this system in services sector. Kaplan (1994) documents that since 1980's many firms working in services sector. If organizations with diverse products and services use single cost driver to absorb high overheads, may distort its cost estimates (Cooper and Kaplan, 1988).

Initially ABC was used only by manufacturing companies and industries and many researchers discuss its usefulness in marketing decisions. Stevenson et al., (1993) introduces ABC as a powerful tool for industrial marketing decision makers with emphases on the impact of ABC on profitability measures. John C. Lere (2000) states the importance of manufacturing costs in considering price negotiations. Feature of ABC is its recognition that cost does not only vary with volume but it can also vary with some other activities i.e. unit-level activities, Batch-level activities and Product-level activities (Cooper, 1990). Steve R. Letza and Ken Gadd (1994) examines the use of ABM with TQM in total quality organizations to identify their common features and compatibility as management tools. They stated that by using the accounting information generated by ABC, TQM can evaluate costs effectively. Charles Praker (2000) comments on the use of ABC and balanced scorecard as the more modern approaches to performance measurement as it helps a lot in making judgments and decisions. We use ABC data as input to measure performances.

IV. METHODOLOGY

This study is based on documentary analysis. Extensive literature has been reviewed to arrive at the conclusion with regard to the significance and application of ABC in different organizational settings. Findings of 33 researchers published through various research channels in different countries has been quoted to arrive at general research outlook on the topic on the basis of these researches. The common findings are generalized henceforth.

V. FINDINGS

- Horngren (1977) argued that there are some hidden factors that influence the industrial and manufacturing expenses, if you want to increase managerial and production efficiency you have to deal with those factors very carefully. Activity-Based costing is a technique which helps us in finding the way to reveal those factors. Miller & Vollman (1985), Johnson & Kaplan (1987) and Johnson, H. T. (1990) supported this argument.
- Because of the usefulness of activity-based costing, many services organizations such as hospitals, universities, libraries, sport organizations, banks, logistic companies etc. and SME's are adopting this new costing technique to improve their financial and non-financial performance by reducing direct labour components, continuous skill development and reengineering. Kaplan (1994), King et. Al (1994), Antikainen, Roivainen, Hyvärinen, Toivonen, Kärr (2005), Granof, E. Platt, Vaysman (2000), Snyder and Davenport (1997), Ellis-Newman (2003), Sage and Fox (1989) support this fact.
- Usefulness of ABC in marketing decisions, importance of manufacturing costs information provided by ABC in considering price negotiations, use of ABC and balanced scorecard as the more

modern approaches to performance measurement, use of ABM with TQM in total quality organizations as management tool and usefulness of ABC in firms having diverse products, services and processes let managers think that activity-based costing is the most appropriate costing technique in modern manufacturing and services environment than traditional costing techniques. Stevenson et al. (1993), John C. Lere (2000), Charles Praker (2000), Steve R. Letza and Ken Gadd (1994) and Cooper and Kaplan (1988) support this fact.

So all the authors irrespective of culture are of one view that activity-based costing is from pain to joy.

VI. CONCLUSION

From all of the above discussion and findings on the basis of thorough research review it is concluded that there are many issues (discussed above) which cannot be dealt Traditional measurement methods of cost accounting proved insufficient on these issues, which leads to the invention of activity-based costing.

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