

Information Usefulness and Usage in Business Decision-Making: An Activity-Based Costing(ABC) Perspective

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Activity-based costing(ABC)an information system developed in the 1980s to overcome some of the limitations of traditional cost accounting and to enhance its usefulness in strategic decision-making. The objective of the study is find out how managers feel about activity-based costing, especially how useful they believe it is in providing information and in helping them to make better decisions. Data was collected by means of an e-mailed questionnaire sent out to 181 ABC users consisting of executives at a large telecommunication company in South East Asia. ABC users were asked 24 items which assessed their perceptions of the information usefulness and effects on decision making of ABC usage. Descriptive analysis on the firm's experiences with the usefulness of ABC information in different business processes and how ABC information changed decisions is presented. Respondents were asked to indicate the significance of changes made as a result of ABC site implementation. Using this measure, when an ABC implementation causes a strong change in decisions, it is viewed as being successful; when it causes less change in decisions, it is viewed as not being successful. It also reports on the organisation's usefulness of ABC information in different business processes. By viewing an ABC system as an enabler to improve the operations business processes and decisions, it demonstrates that these systems enable executive and managers to enhance the process of decision-making. The study found ABC provided better information in areas of budgeting and planning and opportunities for improvement in other business areas. In relation to ABC making changes in business decisions, these were less successful in the various business functions. The implications of these findings share the experiences of the present organisation and their perceptions on the usefulness of ABC information and where it stands in changing business decisions in their operations

1. Introduction

The main purpose of this study is to report on the perceptions of ABC users in relation to the usefulness of ABC information usage and when ABC implementation causes a change in business decisions. Furthermore it gives information on the characteristics of ABC users, such as their level of training and knowledge about ABC concepts.

The paper is important for two reasons. First, ABC at the theoretical level is expected to help a South East Asia telecommunication organisation to evaluate their cost management

practices and how these systems could support their decision processes. Hence, the study

gives some indications about this organisation effort to seeing ABC usefulness in their business operations. Secondly, beside the great deal of interest, surveys conducted have shown that the diffusion process has been quite low as to why ABC implementations seem to fail

The study covers one large South East Asia telecommunication provider. Due to the exploratory theme of this study, no formal hypotheses were tested. Rather, the paper gives some descriptive statistics that outline the current general trends and use of ABC systems by the organisation. The paper is divided into five sections. Section two provides the theoretical background for the study which includes ABC implementation and success; section three describes the population selected. Section four reports and discusses the results achieved; and the final section concludes with a summary of the results and a discussion of the limitations.

2. The Relevant Literature

ABC Implementation

For many decades, management accounting had increasingly dedicated its effort in ensuring that financial accounting standards were satisfied and costing procedures were met (Garrison and Noreen, 2000). A number of recently developed management accounting techniques, such as ABC, product life cycle analysis, benchmarking, and value chain analysis, have been suggested as ways of linking operations with company strategies and objectives (Chenhall and Langfield-Smith, 1999). These techniques have not only increased the level of competitiveness and companies' strengths, they have gained a high profile in enhancing product cost accuracy (Cooper and Kaplan, 1987), and provided comprehensive cost data for performance evaluation (Joshi, 1998). Johnson and Kaplan (1987, p.1) made this observation, "Today's management accounting information driven by procedures and cycles of the organisation's financial reporting system, is too late, too aggregated, and too distorted to be relevant for managers planning and control decision"

ABC and its derivatives have now enjoyed almost a decade of high profile. In addition to its application, its adoption and application be used by public utilities, wholesale and retail organizations and by a range of service firms (Innes and Mitchell, 1995; Innes et al., 2000, Drury and Tayles, 2000) A number of recent advances in the theory of management accounting and organisational change (Burns, 2000), and in understanding the spread and growth of ABC and ABM (Armstrong, 2002; Jones and Dugdale, 2002), offer new opportunities that are unexplored in the area of indirect costs (Sojin et al., 2002).

The paradigm of ABC has helped many organisations improve their competitiveness by enabling them to make better decisions based on better understanding of their cost structure. ABC started in the 1980s to meet the need for more accurate information on resource demands by individual products, services, customers, and channels. Kaplan and Cooper (1998) indicate ABC systems enabled indirect and support expenses to be driven,

first to activities and processes, and then to products, services, and customers. The systems gave managers a clearer picture of the economics of their operations. In technical terms,

ABC aims to determine an accurate cost trail between resources and cost objects. The cost trail is accomplished using two stages: 1) involves transformation of general ledger costs into activity costs and 2) transforms activity costs into product costs.

ABC distinct between the traditional cost accounting is as follows: traditional cost-accounting techniques allocate costs to products based on attributes of a single unit. Attributes include the number of direct labour hours required to manufacture a unit e.g. purchase cost of merchandise resold, or a number of days occupied. Allocations, therefore, vary directly with the volume of units produced, cost of merchandise sold, or days occupied by the customer. In contrast, ABC systems focus on activities required to produce each product or service's consumptions of the activities.

By using ABC, overhead costs are traced to products or services by identifying the resources, activities and their costs and quantities to produce output. A unit of output (a driver) is used to calculate the cost of each activity. Cost is traced to the product or service by determining how many units of output each activity consumed during any given period of time.

The literature on ABC in the past two decades has featured ABC in a number of perspectives. These include the drivers of adoption (Anderson, 1995; Gosselin, 1997; Anderson and Young, 1999; Anderson et al., 2002), factors associated with successful implementation (Innes and Mitchell, 1995; Shields, 1995; Foster and Swenson, 1997; McGowan and Klammer, 1997; Innes et al., 2000; Cotton et al., 2003) and outcomes that have been associated with ABC adoption (Bhimani and Pigott, 1992; Friedman and Lyne, 1997; Cagwin and Bouwman, 2002).

Against this background, the implementation of ABC faces tremendous challenges. There is the need for evaluations of ABC once implemented. Literatures on ABC success covers a wide variety of success measures being used that shall be the next discussion of this study.

ABC Success

Success of ABC has long been questioned. It is up to the organisation to evaluate whether the implementation of ABC is predominantly successful. As Shields (1995) explains, ABC success relates to,

“Providing a definition of [ABC success] was problematic, as the literature is vague about what constitutes success, and discussions with ABC experts during construction of the survey did not result in consensus about a tangible definition. For example, success can include top management not rejecting it, an implementation of ABC per se, use of ABC information by non-accountants, gaining competitive advantage and providing additional profits. Thus, the approach [we] adopted was to let the respondent rate the degree of success with whatever definition he or she deemed relevant. Future research can attempt to catalogue the various definitions or types of success.”

ABC can be applied to many aspects of business. A study by Foster and Swenson (1997) survey indicated that ABC/M was used more for decision-making for identifying

opportunities for improvement, product management decisions, and driving process improvement decisions. Secondly, in relation to the usage of ABC/M to assist in making decisions, the areas with the greatest changes made were processes, pricing strategy, component parts, and strategic focus.

Researchers such as Swenson (1995) looked at the benefits of ABC to the manufacturing industry. One aspect of ABC evaluation related to the frequency with which ABC information is used to support decision making in different areas of the business. The study found broad support for ABC/M systems among the sampled firms. The results represented a wide variety of industries, and each industry did gain benefit in at least one dimension of the ABC system. Without exception, all respondents reported an improvement in at least one dimension of their cost management systems following the implementation of ABC. The respondents reported the most improvement for product costing and cost control efforts, but they also reported significant improvements in their performance measurement systems. Following the implementation of ABC, they reported high levels of satisfaction with their cost management system changes.

Other research by Cagwin and Bouwman (2002) investigated the improvements in financial performance with the use of ABC, and the conditions under which such improvements are achieved. The finding of this study is aligned and consistent with statements of other researchers that management accounting systems are meant to be efficient in supporting firms' operational effectiveness (Granlund, 1997; Granlund and Lukka, 1998). There was evidence supporting previous analytical and theoretical research regarding the conditions favourable to obtaining benefits from ABC. It showed that there is a positive association between ABC and improvement in return on investment (ROI) when ABC is used concurrently with other strategic initiatives, when implemented in complex and diverse firms, when used in environments where costs are relatively important, and when there are limited numbers of intra-company transactions to constrain benefits. ABC contributes positive benefit, but not in all firm circumstances. Furthermore, there is the need for the practitioner community to have knowledge of the appropriate conditions for maximising the efficacy of ABC. There is also the indication that other enabling conditions (i.e. information technology sophistications, absence of excess capacity, and a competitive environment) affect the efficacy of ABC. There is also evidence that the previously used measures of ABC success, satisfaction with ABC, and financial benefit obtained from ABC (Shields, 1995; Cagwin and Bouman, 2002; Cotton et al., 2003) are predictors of improvement in financial performance.

Past review on ABC implementation has indicated that the relationship between ABC implementation factors and success dimensions of ABC is somewhat mixed. Several studies (i.e. Shields, 1995; McGowan and Klammer, 1997; Krumweide, 1998; Anderson and Young, 2001; Anderson et al., 2002) have produced significant similar results on some of the factors, although they may vary in some of the dimensions. Top management support and adequacy of training and education for developers and users seem to be the most significant implementation factors in ABC implementation. With relation to effective ABC, dimension of organisations achieving financial benefit (Shields, 1995;

Cagwin and Bouwman,2002;Cotton et al.,2003),and use of information in decision-making and changing business decisions (Foster and Swenson,1997;Innes,1999;Gupta and Galloway,2003) figure most for evaluating effective ABC implementation

These implementations thus bring us towards acknowledging that many measures of ABC evaluations have been used.Overall,these literatures have shown a profound interest in the importance of ABC evaluations for effective systems.

3. Case Background

A large provider of telecommunication products and services in South East Asia went through companywide interventions which involved the development and implementation of ABC systems.To begin the study,243 ABC users across 16 ABC systems were selected,each representing a different ABC systems implementation.The subjects' chosen were selected based on their experiences with using the ABC systems in their particular division.These users are mainly executives and managerial level employees in the divisions.Subsequently,a set of questionnaires containing 14 information usage items and 10 business decision items were sent to these users across the 16 ABC systems in the organisation.Of the 243 questionnaires mailed,181(74.5%of 243)were completed and returned.All questionnaires were checked for reliability of answers and were all usable questionnaires.Based on several demographic distributions,the representativeness of the sample appears to be adequate.The following section will discuss characteristics of the respondents.The distribution of these characteristics is so diverse that it allows us to use the sample means as the estimated average importance ratings on the entire population.

Survey Design

The methodology employed in this study was a case study using a postal survey.Yin (1994,p.26)points out that

“Case study research is remarkably hard,even as case studies have traditionally been considered to be ‘soft’research.Paradoxically,the ‘softer’a research technique,the harder it is to do.”

Yin(1994,p.13)defines the case study as an empirical inquiry where 1)it investigates a contemporary phenomenon within its real life context,2)when the boundaries within phenomenon and context are not clearly evident,and in which 3)multiple sources are used.A case study usually implies a single unit of analysis and is usually used with the term ‘fieldwork’(Ryan et al.,1992).According to Yin(1994,p.3),in many situations, the use of case studies arises out of the desire to understand complex social phenomena Yin states.

“The case study allows an investigation to retain the holistic and meaningful characteristics of real-life events -such as individual life cycles,organisational and managerial processes,neighbourhood change,international relations,and the maturation of industries.”

The inquiry relating to the case study approach 1) copes with the technicality distinctive situation in which there will be many more variables of interest than data points and, as one result, 2) relies on multiple sources of evidence, with data needing to converge in a triangulating fashion and, as another result, 3) benefits from the prior development of theoretical propositions to guide data collection and analysis. (Yin, 1994, p.13).

In principle, the survey consists of three parts. The questionnaire was adapted from ABC survey used in Foster and Swenson (1997) on ABC evaluations in the US. Each survey subject was asked to evaluate the use of ABC information and ABC information change in decision actions. The first part asks respondents to rate their current perception of using ABC information as compared to their previous cost management system, in the 14 specific decision areas listed in Table 1. Respondents were asked to rate ABC information use on a measurement scale of "1"=Poor, to ""=Excellent. The latter asked respondents to indicate the significance of changes made as a result of ABC implementation in their particular division on a 10-item construct. This measurement used a five-point scale ("1"=No changes, to "5"=Very significant changes). Both constructs were tested for reliability of questions and prove to be very satisfactory at the 0.95 and 0.98 Cronbach Alpha. The third section seeks the respondent's educational background, level of training provided and knowledge of ABC concepts.

4. Results

Case Study: Company XYZ

This organisation is based in the service sector and has offices throughout the world. Company XYZ is a large organisation that directs its business to providing telecommunication services. In South East Asia it has developed rapidly, and now accounts for almost 100% of a country's telecommunication industry. Its vision is to be the communications company of choice - focused on delivering exceptional value to its customers and other stakeholders

With its massive growth both in services and monetary, the introduction of ABC in the organisation was to be an enterprise-wide implementation, with its original contribution solely meant for transfer pricing purposes. Currently, ABC is a widely used tool to improve strategic process and product pricing, mix decisions, and to facilitate product and process improvements. In other words, ABC was geared more towards operational excellence. Company XYZ was a government organisation until 1987, when it was privatised, and the government still holds 33% of the shares. The company provides a total solution to telecommunication consumers and also to its competitors in providing telecommunication infrastructure. In 1995, due to a restructuring exercise, the management divided the organisation into three business units: Telco (Fixed Telephony), Cellular and ServiceCo (Support Services). Indeed with the changes about to occur, the need to have ABC systems began here - their main intention for ABC was solely for transfer pricing between these units.

ABC Implementation

The wide implementation of ABC in XYZ involved 16 divisions where all exist separate ABC systems to support their business operations. ABC implementation in XYZ was initially using the 'top-down' approach, where its business purpose was meant for transfer pricing. This was carried out in most of the Service Co. divisions. The approach for ABC was rather less detailed as to why they used the 'top-down' approach. Top-down approach explains what things cost and is sometimes called the cost object view. This approach is very effective at capturing how the diversity of things, like different products or various customers, can be detected and their costs reassigned by first measuring resources through their consuming activities and then into the form of final cost object. The top-down approach was also mainly for looking at product and regulatory costing. The implications for using the top-down approach was to allow XYZ to have a 'bird's-eye view' of XYZ operations in order to see how resources were being used in their activities. At the same time, it was mainly to see cost cutting of the network functions that uses the bulk of the operating costs in Company XYZ. The implementation of ABC using the top-down approach involved most Service Co divisions and bottom-up approach was later ruled out to Telco divisions. ABC implementation in XYZ involved three types of ABC models:

1. Embedded model (EM)-This is a generic ABC model designed within a particular division with the intention of being applicable for a wide range of purposes (e.g. transfer pricing, operational excellence, improving business operations, and budgeting). The model is updated frequently, and is currently being integrated into the company's financial information system.
2. Stand-alone model (SAM)-This is a generic model designed for transfer pricing, budgeting and improving business operations. It is less frequently updated.
3. Ad hoc models (AHM)-This model is quite simpler and normally developed to meet a particular purpose. Typically, it will take less time to develop, involve fewer staff, and the decision to develop will be taken at a lower managerial level. The models are never updated and no review is being made of them.

In this company, there are two main ABC models that can be classified as EM. They are the EMA1 and EMA2 models. These models go through a longer period of development process and normally require the assistance of consultants. McKinsey Consulting recommended implementing ABC in XYZ in 1995 during a restructuring exercise involving XYZ as a whole. The main reason for ABC implementation at that time was for transfer pricing - to establish rates for Service Co so that it could transfer its cost to respective service users in Telco and Cellular. The purpose of transfer pricing in XYZ initially was due to the restructuring process involved how much in profit and loss for each particular division.

One of the bigger implementations of ABC was in EMA2. The ABC division implementation was originally started in EMA2, and then was further developed in

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