

IMPLEMENTATION OF ACTIVITY BASED COSTING IN THE TELECOMMUNICATIONS SECTOR

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ABSTRACT

The objective of this research is to investigate the implementation of activity based costing (ABC) in the Telecommunications Sector. It aims to examine the level of success that has been achieved and factors associated with it. It aims also to identify the challenges and issues that have been encountered by the telecommunication company (the case study) in implementing ABC, and the benefits obtained from its implementation. Methodology of a case study has been used for this research where the data are collected through face to face interviews, files and documents review. Findings indicate that XYZ company has been moderately successful in implementing ABC. Critical success factors that have been associated with the implementation of ABC are top management support, linkage to the competitive strategy, consensus about and clarity of objectives, training, and adequacy of resources. The most prominent challenges and issues that have encountered ABC implementation are factors related to the system's complexity and employees' reactions. The findings reveal a negative impact on ABC's successful implementation. They are:-, 1. non-finance (accounting) department's reservation about usefulness of ABC, 2. difficulties in defining cost drivers, and 3. Difficulties in allocating cost to each product and service. One implication of this research is that ABC implementation can be successful in the specialised service companies such as telecommunications. Another implication is that companies which intend to implement ABC successfully should place more importance on and give more attention to the behavioural and organisational factors.

Introduction

Management accounting lost its relevance in the second and third quarters of the twentieth century (Johnson & Kaplan, 1987). It was dominated by the organisations' financial reporting system which was not relevant for managers' planning and control. Consequently, management accounting systems failed to provide accurate costs for products and services and failed to help managers in their efforts to reduce costs and improve productivity. Roslender (1996) summarised the criticism of management accounting that was evident in the literature during the 80s in four aspects: First, the lack of technical developments in management accounting practices in response to the developments in the manufacturing technology. Second, the dominant role of financial reporting that has resulted in the reliance on historical information for planning and control. Third, academic management accountants have focused in their researches on the economic-based models rather than studies of best practice. The fourth criticism was related to the history of management accounting which was well-established in the 1920s and lost its relevance in the following decades.

Management accounting has regained its relevance in the last two decades as Kaplan argued, by introducing new management accounting initiatives such as Activity-Based Costing to aid managers in operational control, and provide information for process improvement, other than external reporting requirements (Brian, 1988). Activity-Based Costing is one of the management accounting innovations that gained much interest from different types of organisations such as manufacturing, wholesale, retail and service companies (Cooper & Kaplan, 1992) and is used in various cost management applications, other than purely product costing (Innes & Mitchell, 1995).

Researches that investigated the success of the ABC implementation showed a considerable variation in the level of success that companies have achieved (Shields, 1995) and moderate satisfaction with the system (McGowan & Klammer, 1997). However, most of the studies on the degree of success of the implementation of Activity-Based Costing s have been done on organisations in the developed countries; therefore, little has been known about ABC success in the developing countries (Liu & Pan, 2007). Specifically, few studies have been conducted in Asian countries (Duh,

Lin, Wang, & Huang, 2009). Moreover, studies on ABC have focused on the manufacturing industry.

This study will highlight the implementation of ABC in one of the Malaysian telecommunication companies. We will keep the name of the company anonymous for confidentiality purposes and will indicate the name as XYZ company. The study will give an insight on the level of success achieved, the factors associated with the given level of success, the challenges and issues encountered by the company, and the benefits obtained from ABC implementation.

There is a lack of research on the implementation of ABC in the specialised industries such as telecommunications, especially in the developing countries. Therefore, XYZ company, with its experience in ABC implementation, was selected as a case study to enhance this type of research.

Literature Review

Activity-Based Costing has emerged in the late 80s as a solution to the shortcomings of the traditional costing systems (Brown, Myring, & Gard, 1999) and a response to the technological developments and increased automation of the manufacturing processes. The increased competition, production complexity, and the change in manufacturing cost structure with increased indirect cost proportion, caused managers to consider Activity-Based Costing as their main costing system (Hilton, 2008). Robin Cooper and Robert Kaplan developed the Activity-Based Costing System and made it popular within the manufacturing companies (Kennett, Durler, & Downs, 2007). Cooper & Kaplan (1992) stated that “Activity-Based Costing assigns the organisation’s operating expenses to outputs based on the activities performed for these outputs (products, services, customers, projects, facilities, or any objects that create a demand for or benefit from organisational activities)”.

Activity-Based Costing System allocates cost first to the activities that consume resources. After that it reallocates the cost of activities to the cost objects that consume those activities. The ABC system uses the activities as a link between the resources consumed and products based on the cause

and effect relationship (Brown et al., 1999). The allocation of cost from activities to the outputs (products, services, customers etc) is based on cost drivers which are the factors that determine the efforts exerted for activities performance (Souissi, 2002).

Swenson (1995) conducted a study on 25 manufacturing firms that use ABC. He stated that ABC is used by those firms to obtain more accurate cost information for products and customers. Chong and Cable (2002) conducted a study on the implementation of activity based costing in an Australian Oil and Gas Company. Their results confirmed Swenson results about the objectives of the ABC system. They stated that, the main objectives of implementing ABC are more effective cost management, better cost control and more accurate costing information.

ABC Emergence

Traditional Costing Systems Shortcomings

Researchers and practitioners have criticized the traditional costing systems in recent years (Innes & Mitchell, 1995). Cooper and Kaplan (1988a) in their study (how cost accounting distort product costs) explained why costs should be allocated to the products based on cost drivers. They argued that, complexity of the production drives the overhead costs and not the volume of the production. They clarified this idea more by highlighting the importance of the transaction regardless of the size of the order being handled. Therefore, it is the volume differences and complexity that make traditional costing system unable to determine the products and services costs accurately which misleads decision making specially those decisions related to pricing and profitability analysis of the products and customers. Traditional costing system understates the profit of high-volume products and vice versa (Cooper & Kaplan, 1988b). This is because the traditional costing allocates overhead costs to products and services using direct labor or machine hours while products consumption of resources is not proportional to volume (Cooper & Kaplan, 1992).

Empirical researches have confirmed the previous claims. Duh, Lin, Wang and Huang (2009) performed a field study on a Taiwanese Textile Company

by gathering 39 months of field data. They came up with the results that the costing system of the company distorts products costs by overestimating high-volume products costs and underestimating high production-complexity products costs. The more the overhead cost in proportion to the overall costs, the more traditional costing system distorts production costs in an advanced manufacturing environment (Tsai & Kuo, 2004).

ABC for Improvement

Activity based costing has emerged to overcome the shortcomings of the traditional costing system. ABC attributes overhead costs to products by considering the relationship between activities and products. Activity based costing first allocates resources to activities, then reallocates resources to products or services indirectly through activities by the cause and effect relationship (Cooper & Kaplan, 1988). ABC is more useful in the companies where the indirect costs make up a large proportion of overall costs (Baykasoglu & Kaplanoglu, 2007). ABC has been used for products costing and for a wide range of cost management applications (Innes & Mitchell, 1995). It has been used for measuring operational performance (Maiga & Jacobs, 2008), customers and products profitability analysis (Nolan, 2004), decision making related to the use and exploiting of resources (Argyris & Kaplan, 1994), enhancing competitiveness (Cohen, Venieris, & Kaimenaki, 2005), and for continuous improvements (Cagwin & Bouwman, 2002).

Success of ABC implementation

Firms' Experience

Levels of success that companies have achieved in ABC implementation varies from one company to another. ABC implementation researches reported a variety of success/failure and satisfaction levels. In general, companies have achieved moderate level of success in ABC implementation and reported moderate satisfaction level with the system (Shields, 1995; McGowan & Klammer, 1997).

Firms which have adopted ABC have succeeded in utilising different applications of ABC and obtained benefits from at least one of its dimensions (Swenson, 1995). According to Innes and Mitchell (1995) survey, 65% of

respondents believe that they are fairly successful with ABC implementation. Only two respondents claimed they are very successful. Cohen et al. (2005) revealed successful implementation of ABC by Greek firms despite the acknowledgement of respondents that they don't use a big number of cost drivers and the ABC system design was not extensively detailed.

Critical Success Factors for ABC Implementation

A Large number of survey-based and case study-based researches have been conducted to explore the critical success factors for ABC implementation. These researches aimed to investigate the gap between the tremendous advocacy of ABC (by academicians, management accountants, and ABC adopters firms) and the low adoption rate. Why some companies have been successful in implementing ABC and reported substantial benefits from ABC implementation while others have failed.

Some researches emphasise the role of technical factors such as information technology, computerised systems, quality of ABC software, and adequate knowledge of the process of ABC implementation (designing the system, identification of activities, selecting of cost drivers etc), and other technical issues (Anderson, 1995; Krumwiede, 1998). Another stream of researches emphasises the importance of behavioural, organisational, and administrative factors above the technical factors. Shields (1995) found a significant exploratory power in the behavioural and organisational implementation variables. Shields reported a positive and significant association between the behavioural and organisational implementation variables (top management support, linkage to competitive strategy, linkage to performance evaluation, training, non-accounting ownership, adequate resources, and consensus about and clarity of the objectives of ABC) and ABC implementation success. Many researchers have suggested that successful implementation of ABC is linked to the behavioural and organisational factors (Agbejule, 2006; Chong & Cable, 2002; Foster & Swenson, 1997; Gosselin, 1997; Innes et al., 2000; Jarrar, Smith, & Dolley, 2007; Krumwiede, 1998; Major & Hopper, 2005; McGowan & Klammer, 1997; Shields, 1995).

Shields (1995) considered ABC as an administration innovation and not a technical innovation. Therefore, its success depends on behavioural and organisational factors. These factors represent the perspective of individuals

(top management and employees) and how the system meets their needs, goals, preferences, and agendas. Managing behavioural and organisational factors together with the characteristics of the system and individuals (preparers and users) will assist in reducing resistance and increase the chances of successful implementation (McGowan & Klammer, 1997). Table 1 presents a summary of critical success factors revealed by some of ABC implementation studies that have used both, survey-based and case study-based researches.

Table 1 : Literature Summary on Critical Success Factors

Study	Author	Critical success factors
An Empirical Analysis of Firms' Implementation Experiences with Activity-Based Costing	Shields (1995)	Top management support Linkage of the cost management system to competitive strategies Linkage of the cost management system to performance evaluation and compensation Sufficient internal resources Training in designing, implementing and using cost management systems Non-accounting ownership Consensus about and clarity of the objectives
Measuring the Success of Activity-Based Cost Management and Its Determinants	Foster & Swenson (1997)	Top management support Implementation training Linkage to performance evaluation and compensation Link to quality Resources adequacy Number of primary application Average years of primary application
Satisfaction with Activity-Based Cost Management Implementation	McGowan & Klammer (1997)	Top management support The adequacy of training Training resources The linkage of ABCM to performance evaluation systems User involvement in the implementation Perceptions of the quality of information produced by the system

Cont...

<p>The Implementation Stages of Activity-Based Costing and the Impact of Contextual and Organisational Factors</p>	<p>Krumwiede (1998)</p>	<p>Top management support Non-accounting ownership Training Information technology</p>
<p>Activity-based costing in the U.K.'s largest companies: a comparison of 1994 and 1999 survey results</p>	<p>Innes et al (2000)</p>	<p>Top management support The company is in the manufacturing sector Use of ABC in performance evaluation and improvement Use of ABC in quality management policies</p>
<p>A Study on the Implementation of an Activity-Based Costing (ABC) System in an Australian Oil and Gas Company</p>	<p>Chong & Cable (2002)</p>	<p>Top management support Well organized and advised project team Good information flows between users and preparers Sufficient resources provided</p>
<p>Motivation for activity-based costing implementation Administrative and institutional influences</p>	<p>Agbejule (2006)</p>	<p>Management support Education Information technology</p>
<p>Perceptions of preparers and users to accounting change: a case study in an Australian university</p>	<p>Jarrar et al (2007)</p>	<p>Top management involvement and support for the ABC project Linkage to competitive strategies Linkage to continuous improvement programs Training provided to employees at all levels concerning designing, implementing and using the ABC system Ownership by non-accountants Organisational culture within the implementing organisation that permits change to be embraced</p>

ABC in Malaysia

Management accounting techniques application in Malaysia is still very low (Abd Rahman, Omar, & Abidin, 2003). The researchers found that companies are using financial accounting information for organisational planning, control and decision-making. Maelah and Ibrahim (2006) conducted a survey-based study on the companies listed in KLSE main and second boards. They distributed 1257 questionnaires but the rate of response they received was very low at 11.54% (145 responses). Within those respondents, adoption rate of ABC was 36%. Various variables have been tested to examine the factors that influence ABC adoption. Decision on the usefulness of accounting information, internal measure of performance, and organisation support were found to have a positive relationship with ABC adoption.

Smith et al. (2008) studied the development of management accounting practices in Malaysia and the factors that influenced their adoption. Their findings indicated a low adoption rate and a slow development of management accounting innovations in Malaysia. They stated that financial accounting dominated the accounting practices for management control. Even in the large companies, the adoption of innovative management accounting tools was low. They argued that the low adoption of management accounting innovations was due to the low level of automation where production relied to a large extent on labor forces. A summary of the Malaysian situation is that, the majority of Malaysian companies still use the traditional management accounting practices and when they adopt a new innovation they operate it with the traditional system simultaneously rather than replacing it.

ABC in Telecommunications Sector

The first use of the ABC system was in the manufacturing industry. The design of the ABC model was intended to be implemented in the manufacturing companies which were characterised by the production process. Nevertheless, ABC can be applied successfully in the service sector as well (Kennedy & Graves, 2001). In this regards, Cagwin and Bouwman (2002) stated that manufacturing firms can obtain more benefits compared to non-manufacturing firms. Cohen et al. (2005) argued that service companies

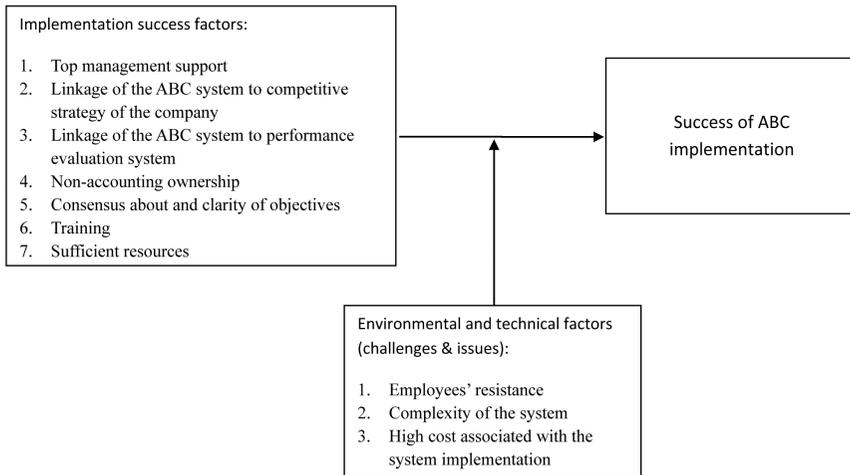
in Greece use the ABC system to a larger extent compared to manufacturing and retail companies.

Telecommunications companies have adopted ABC as indicated by the literature. In the survey done by Innes and Mitchell (1995), three telecommunications companies were included in the survey, two of them adopted ABC and the other one had rejected it. Bromwich and Hong (2000) reported the use of the ABC system by the British Telecom (BT) as a standalone costing system for pricing purposes. Major and Hopper (2005) also reported the use of ABC by Portuguese Telecommunications Company and indicated problematic situation when managers and engineers of production department had a negative view about ABC and resisted it.

Research Methodology

A case study methodology is adopted in this research to investigate the ABC implementation in XYZ Company. Researchers increasingly use a case study as a research method for management accounting practices (Scapens, 1990). Case study research is used to develop a real picture and intimate knowledge about the actual management accounting (Keating, 1995) and to provide an in-depth analysis of a particular company or situation (Shields, 1995). It helps understand management accounting practices, its procedures, challenges, issues, and benefits derived to a specific organisation.

Research Conceptual Framework



Implementation Success Factors

The independent variables in this research have been adopted from Shields (1995) who identified seven behavioural and organisational implementation factors for ABC success. These factors are supported by a large number of researches that have investigated ABC implementation and factors that influence its success/failure (Agbejule, 2006; Chenhall, 2004; Chong & Cable, 2002; Duh et al., 2009; Foster & Swenson, 1997; Gosselin, 1997; Innes et al., 2000; Jarrar et al., 2007; Krumwiede, 1998; Liu & Pan, 2007; Major & Hopper, 2005; McGowan & Klammer, 1997; Shields, 1995). ABC has been considered as an administration innovation and not a technical innovation. Therefore, its success depends on behavioural and organisational factors. These factors represent the perspective of individuals (top management and employees) and how the system meets their needs, goals, preferences, and agendas. Managing behavioural and organisational factors together with the characteristics of the system and individuals (preparers and users) will assist in reducing resistance and increase the chances of successful implementation (McGowan & Klammer, 1997).

Success of ABC

Dependent variable in this research is the success of ABC implementation in XYZ Company. Until today, there is no specific and agreed-upon definition for successful implementation of ABC in the management accounting literature. Researchers have used various methods to measure the success of ABC implementation. To measure the dependent variable in this research on the success of ABC implementation, consideration should be given to the definition of success. Shields (1995) stated that determining what constitutes success is problematic as there is no clear definition of ABC success in the literature. Cinquini and Mitchell (2005) conducted a comprehensive study on the measurements of ABC success that have been used in the literature. They concluded that there is no agreement about a specific definition of success in management accounting context. A considerable number of researchers have measured ABC success by ABC users' perception of success (Foster & Swenson, 1997; Innes & Mitchell, 1995; McGowan & Klammer, 1997; Shields, 1995; Swenson, 1995). This measure of ABC success will be used in this research.

Data Collection

Data were collected through interviews and review of relevant documents. Ten visits were made to the company's head office from 15 of December 2009 until the last visit on 2 March 2010. In those visits 13 face to face interviews were conducted and recorded with nine individuals, five from Centralised Strategic Costing Management and four from the other departments.

Relevant files and documents of ABC implementation were reviewed including ABC implementation steps, forms of ABC data collection, ABC data processing, ABC output reports and other relevant documents such as charts of costing department, sample of network operation departments charts (Johor State) and customer and service management chart.

Data Analysis Techniques

Documents were reviewed and interviews were recorded. Transcripts of interviews were written and analysed. Interviews and documents contents were compared to insure the reliability and validity of the analysis.

Common and special perceptions about ABC implementation variables were distinguished.

Results and Discussion

Documents related to ABC implementation were reviewed. Interviews were conducted with managers from various departments such as finance, costing, auditing, procurement, and operations in addition to ABC team staff. Interviews were recorded, transcribed and compared to facilitate the analysis of common and special perceptions about different aspects of ABC implementation. Table 2 presents the interviewees profile.

Table 2 : Interviewees' Profile

Person	Title	ABC involvement
1	General Manager Centralised Strategic Costing Management	Manager and supervisor of all costing systems including ABC
2	Assistant General Manager Product & Network Costing Centralised Strategic Costing Management	Responsible of ABC implementation for products and networks
3	Assistant General Manager SSO Cost Management Service & Consultancy Centralised Strategic Costing Management	Responsible of ABC implementation related to Shared Service Operation (SSO) departments such as finance, human resources, procurement and IT.
4	Assistant General Manager Business Finance Government	Use of ABC information
5	Assistant General Manager Operation & Development 3 Network Operation	Use of ABC information
6	Manager Group Internal Audit	Previous ABC team
7	Manager Procurement	Use of ABC information
8	Assistant Manager	ABC team
9	Assistant Manager	ABC team

ABC Implementation Perceived Success

Activity based costing system implementation at XYZ has been perceived successful by all levels of XYZ personnel in all departments that have been interviewed such as finance, costing, auditing, procurement and operation. In spite of the consensus about the success of ABC implementation, there are a variety of opinions regarding the level of success. Views of managers differ from the views of employees especially those who are closer to the implementation process of ABC, i.e., ABC team. While managers perceive ABC implementation at XYZ as very successful with their justification for this opinion, employees who work on ABC perceive it as being successful but not very successful. The employees are more conservative when they express their opinion about the success of ABC. Managers justify their opinion in different ways. One of the managers said;

“ABC is very successful, because it is used widely and we have been doing ABC more than 10 years.”

Other added;

“ABC is very successful. Everybody in XYZ is aware of ABC.”

On the other hand ABC team justify their opinion by indicating that the company is not implementing full scale of ABC, which has been implemented in selected units or selected areas. They attribute the partially implementation of ABC to the large size of the company and limited staff involved in ABC implementation. Assistant General Manager for Product & Network Costing, Centralised Strategic Costing Management stated that;

“We have only two employees for ABC while we have 200 to 300 cost centers that should be addressed by ABC if we want to go for full ABC implementation.”

Moreover, employees indicate that in spite of considering ABC implementation as successful, the results of ABC cannot be relied upon 100 percent. According to them, ABC is useful and can be used for benchmarking of activities, departments, states and other parts of the company. Personnel outside cost management such as procurement and

operation did not express their opinion about the level of ABC success; rather they emphasised its usefulness and importance. Assistant General Manager for Operation & Development, Network Operation stated that;

“ABC is important no doubt about it.”

To stress on the usefulness of ABC for the non-finance departments in making decisions he added;

“ABC assists us to know how much we should pay for the work that we assign to the contractors.”

To come up with clearer findings about the success of ABC implementation at XYZ considering the nature of the business, the resources dedicated for the system and the benefits obtained, interviewees were asked whether the ABC system was worth implementing when comparing its cost with its benefits. Results of the interviews transcript analysis revealed a consensus about this issue. All interviewees considered ABC worth implementing. Their assessment revealed that the benefits of the ABC system derived in XYZ outweigh the cost of its implementation. ABC is a successful investment as suggested by Assistant General Manager for Product & Network Costing, Centralised Strategic Costing Management. That is because it enables the management to increase revenue through proper pricing policy, eliminating non-value added activities and reducing costs.

Critical Success Factors

Top Management Support

Top management support for ABC implementation is emphasised by all interviewees, managers and employees. From the time of ABC initiation, top management provides support for the system and continues to support its implementation until the current time in terms of providing consultants – at the designing stage – creating a special unit for ABC implementation and devoting adequate resources for it. Top management of XYZ is undertaking strategy for operational excellence. To help this initiative to succeed, top management support of ABC is important as one of the bases for operational excellence.

One of the ABC team members stated;

“When we need anything, for example software, top management will not hesitate to buy it. They send us to training courses when we need.”

XYZ management is going to adopt beyond budgeting initiative as a new management tool for planning and conducting business. The view of management is that adopting beyond budgeting will raise the need for detailed information about activities, resources used, the change in performance efficiency, cost efficiency and other effects of beyond budgeting implementation. Information provided by the ABC system about resources consumption by activities, identification of non-value added activities and other ABC information will play a vital role in the management planning, monitoring and control in the absence of budget control due to the implementation of beyond budgeting initiative. The management looks at ABC as a precious source of information in this regards and emphasises its support for improvement in the implementation of ABC. This is apparent in the discussion of Centralised Strategic Costing Management’s managers about the proposal they are going to send to the top management to buy new ABC software called (PRODACAPO) to enhance the ABC system features and improve its functions.

Linkage of ABC to Competitive Strategy

The ABC system at XYZ is linked to the competitive strategy of the company indirectly through utilising of ABC information in the enhancement of operational excellence. XYZ is well known for implementing the Balanced Scorecard for performance evaluation and competitive strategy. According to Assistant General Manager for Product & Network Costing, CSCM, this factor of ABC implementation – linkage to competitive strategy – is planned to be achieved with the proposed software (PRODACAPO) which has the features to link ABC results by the balanced scorecard strategy.

Training

Training is provided through the designing stage of ABC project and continues to be provided through the implementation stage. Consultancy is also provided for designing stage when a professor from Australia has been invited to establish the model of ABC for XYZ business. A workshop of cross-functional team for ABC is formed with the Australian professor's aid for a few months. Regular courses also are provided by Certified Management Accountants (ICMA Australia) annually. Cost management employees join these courses which include ABC as one of its core subjects.

Another type of training is provided by the ABC software (SAS) supplier. When purchasing the software, the software owner provides training for XYZ employees from the set up phase of the system until the results are obtained. When they were asked whether they received sufficient training, ABC team's reply was yes. Nevertheless, the process of job rotation may change ABC team from time to time which makes a variance of training levels that creates the need for additional training for the new ABC team. One of the ABC team members who joined ABC recently suggested that if there were more training, it would be better.

Non-Accounting Ownership

The ABC system at XYZ is owned by the accounting personnel. The unit of ABC implementation is under the Centralised Strategic Costing Management which is part of the Group Finance. The non-accounting personnel role is limited to providing data for the ABC team when requested about their activities, time spent on activities and other information needed by ABC team. At the initiation stage, a cross-functional team was formed and the model was designed. After that, operating and responsibility for the ABC system is restricted to the accounting personnel in the CSCM. Assistant General Manager for Operation & Development, Network Operation commented;

“ABC implementation is not fully correct because those actually who plan for ABC other than the users. Sometimes I need certain output of ABC but the ABC system does not serve for that request.”

Participation of non-accounting departments is not based on the ownership of the system, but because of the top management directions. As a result, non-accounting departments sometimes deny the results of ABC although they are based on the data provided by them. They may attribute this to the lack of understanding about the ABC data needed when they are requested to provide or because the lack of time to prepare the correct information or any other reasons.

Linkage of ABC to Performance Evaluation System

Activity based costing at XYZ is not linked to the company's performance evaluation system. Employees are not evaluated and compensated based on ABC information. Therefore, there is no link between the individual's personal advantage and the system to affect his or her attitudes towards the system. Instead, when the system started to be implemented, the results showed the cost of activities and departments' management decided to reduce cost based on this information. When the managers and employees realised that their budget would be reduced according to ABC results they disliked the system and showed resistance by refusing to provide accurate information about their activities as ABC inputs requirements.

Resources Adequacy

XYZ is a large company which has a large number of employees, departments, branches, products, services, activities and customers. To implement ABC that covers the whole company, adequate resources should be devoted in terms of funds, employees and time. That is not the current case of XYZ ABC project. Despite the top management's support for the system, the ABC team consists of three employees (two executives and one supervisor). The team is not capable to implement ABC for the whole company whatever the amount of other resources dedicated for the system. This is the reason which stands behind the partial implementation of ABC on selected units or activities based on request and not on a continuous basis. General Manager of CSCM stated;

“If I have 10 to 20 people to implement ABC I will do everything.”

Funds have been provided sufficiently. This is apparent by the approval of top management to change ABC software more than one time in addition to the dedicated resources for training with international experts such as ICMA Australia professors.

Consensus about and Clarity of Objectives

There is a relative consensus about the objectives of ABC, at least the main objective which is to determine the cost of XYZ products and services. Managers and employees in the cost management, finance and non-finance departments who were interviewed expressed their views about the objectives of ABC which were clear to them. Nevertheless, there is still some kind of objective unclarity when management requests ABC information. *“Sometimes we don’t know what they want to see,”* said an official.

Environmental Effect and Technical Factors (Challenges and Issues)

ABC implementation at XYZ has encountered several challenges and issues that relate either to the ABC system or to the environment in which ABC is implemented. Challenges and issues that have faced ABC implementation can be categorised into three main categories; employee’s reaction and behavioural issues, technical issues and cost of the system.

Employee’s Reaction and Behavioural Issues

When activity based costing was first implemented at XYZ, it was perceived positively. Non-finance departments cooperated in providing information about their activities and tasks. But when the results of ABC were revealed, they did not like it. According to the General Manager of CSCM;

“They realised that they are very costly and they can be more efficient.”

Based on ABC results, the management decided to reduce costs which is something that staff do not like. Following this, employees resisted providing information or they attempted in some cases to input inaccurate

information. This problem continued for approximately six months. Then cost managers reconciled this problem by unlinking the ABC information to the budget of the non-financial departments. Cost management then decided to implement ABC for a higher level rather for going to the very details of departments and activities. GM of CSCM added;

“If you want to make ABC successful, don’t link it directly to budget.”

CSCM General Manager suggested that it would be better when implementing ABC to measure people but not to cut cost directly;

“They will know their level, they will compete with each other and they will cut their own cost. ABC is to make people understand their cost so that they will be responsible. At least they are not so blind.”

Employees’ perception about ABC implementation was that, management wanted to reduce the number of employees as a tool for cost reduction. Assistant General Manager for Product & Network Costing, CSCM stated that;

“We changed our strategy in the last two years. When we conduct ABC we mention to the employees that it is not a cost reduction initiative but it is just to identify the activity costs.”

Nevertheless, employees believe that ABC information will affect at least their key performance indicators (KPI). Findings of interviews analysis also shows that, when the request for ABC information primarily is initiated by the management of network departments, employees respond better and help provide data for ABC input. But when the request for ABC information comes from the cost management, network departments, employees feel that they are targeted and resist providing accurate, timely and relevant information for ABC input. These findings are consistent with many studies in the literature that have addressed the accounting management changes or the adoption of new management accounting innovations specially ABC (Argyris & Kaplan, 1994; Cohen et al., 2005; Drennan & Kelly, 2002; Innes & Mitchell, 1995; Innes et al., 2000; Liu & Pan, 2007; Major & Hopper, 2005; McGowan & Klammer, 1997).

Technical Issues

Activity based costing system is considered a complicated methodology for product and services costing. This is due to the difficulties encountered by the ABC project team in identifying the activity cost pools and selecting the proper cost drivers in a telecommunications business environment in addition to the difficulty of collecting data on a timely basis. The ABC implementation team which consists of accountants has difficulty understanding the telecommunications network. As mentioned by ABC employees, when technicians explain the network, they present it from the technical side and not from the side which accountants need to look at as relevant to the ABC system. One of ABC employees stated;

“Sometimes technicians tell things which are not important to me as an accountant who wants to do ABC and at the same time they ignore important things.”

Non-finance employees are busy with their operational day to day work. When ABC employees ask them to perform extra work for providing data, it causes them a problem and they complain for that additional burden imposed by ABC requirements. An ABC employee commented;

“Employees don’t like to be involved in data providing, some answer by saying - I am not sure.”

To the non-finance employees, ABC is time consuming and not relevant compared to their operational work. In many cases they tend to provide data which is not accurate enough and this is the biggest challenge as mentioned by an ABC employee. These findings are consistent with the literature of both case study researches on ABC (Chong & Cable, 2002; Waeytens & Bruggeman, 1994) and survey research on ABC implementation (Cohen et al., 2005; Innes et al., 2000).

Cost of ABC Implementation

Cost of ABC implementation is one of the challenges that have been indicated by the majority of interviewees. Given the size of the company, the variety of its activities and the time that should be dedicated for data gathering and analysis, ABC seems to be very costly. These findings are consistent with survey research on ABC implementation (Brown et al., 1999; Innes & Mitchell, 1995; Innes et al., 2000; Liu & Pan, 2007).

Benefits of ABC Implementation

Several types of benefits have been obtained from ABC implementation. Interviewees emphasised the benefits of ABC in supporting decision making. According to the General Manager of CSCM, ABC assists management in making informed decision. She commented that

“Information is power.”

She also added;

“ABC has spread the culture of cost consciousness and changed employees’ behaviour towards more efficient resource usage”.

The perception of managers and employees is that ABC assists XYZ management in making better decisions relating to pricing, cost control, cost reduction, outsourcing and many other important decisions. It has assisted in identifying non-value added activities and shed the light on the resources consumed by unnecessary activities. It has helped allocate shared costs to the company’s products and services and supported better product and customer profitability analysis.

Conclusion

ABC implementation has been moderately successful as perceived by XYZ employees in different departments whether finance or non-finance. This perception about the level of ABC success is due to the partial

implementation of ABC on specific units and cost centers of the company. Nevertheless, managers and employees emphasise that ABC is worth implementing and in general, its benefits outweigh its cost.

Behavioural and organisational factors are found to be the critical success factors that assist in successful implementation of ABC at XYZ. Based on Shields' model (1995) for ABC to be successful, the determinants specify seven behavioural and organisational factors. The successful implementation of ABC at XYZ is found to be enhanced by five behavioural and organisational factors: top management support, linkage of the ABC system to competitive strategy of the company (represented by operational excellence), consensus about and clarity of objectives, training for designing, implementing and using ABC and adequacy of resources. These findings are consistent with researches that emphasise the role of behavioural and organisational factors over the role of technical factors for ABC success (Argyris & Kaplan, 1994; Chong & Cable, 2002; Foster & Swenson, 1997; Jarrar et al., 2007; Major & Hopper, 2005; McGowan & Klammer, 1997; Shields, 1995).

Despite the presence of many success factors that result in the successful implementation of ABC at XYZ, there are several challenges and issues that have been encountered in the implementation which have moderated the effect of success factors on the level of success. In addition to an insufficient number of ABC staff to handle the ABC project for a large company such as XYZ, there are other environmental and technical issues that have affected ABC implementation progress. Factors that have been found to hinder ABC success are non-accounting departments' reservation regarding ABC usefulness, and difficulties in defining cost drivers and allocating cost to all products and services.

The operational department's reservation about ABC's usefulness and their concerns regarding the effect of ABC information on them have been reflected by some kind of resistance. Employees have a fear that top management's efforts for cost reduction through the use of ABC information may result in a cut on employment or might result in minimising their departmental budget or at least it will affect their key performance indicators (KPI). Moreover, operational employees perceive ABC as an extra burden on them because they have to provide much of the data for ABC while

they are busy with their day to day work. Hence, employees in some cases refuse to provide information or they might provide inaccurate information in addition to delay which makes ABC data collection untimely and less reliable. These findings are consistent with many researches that indicate the employees' reservation about the ABC system (Argyris & Kaplan, 1994; Cohen et al., 2005; Drennan & Kelly, 2002; Innes & Mitchell, 1995; Innes et al., 2000; Liu & Pan, 2007; Major & Hopper, 2005; McGowan & Klammer, 1997).

Complexity of ABC implementation in telecommunications environment due to the difficulties in identifying cost drivers, collecting data and allocating different costs from multiple activity cost pools to each product and service has added other challenges for the successful implementation of ABC at XYZ. Complexity of ABC has been reported by researches that have been done on different type of manufacturing and service companies (Chong & Cable, 2002; Waeytens & Bruggeman, 1994; Cohen et al., 2005; Innes et al., 2000). XYZ management has realised considerable benefits from ABC implementation. ABC has assisted XYZ management in the improvement of decision making and cost control. It has also assisted in reducing costs by identifying non-value added activities and resources consumed by those activities.

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