

# **Chapter 1**

## **INTRODUCTION**

### **1.0 Overview**

This chapter provides both background and introduction to the thesis. The problem statement and objectives of this research are outlined. The research questions for this particular study are stated, followed by a discussion on the significance and scope of this study. Finally, definitions of the research variables are explained.

### **1.1 Introduction**

Over the last few decades, dynamic and fast changes have taken place in the manufacturing and business environment. All those changes have resulted in the emergence of new management practices (Johnson & Kaplan, 1987; Cooper & Kaplan, 1992; Isa, 2006). To survive in this new competitive and dynamic environment, effective cost management information capable of providing better apprehension and helps in managing growing turbulent and complex manufacturing processes has become extremely important to drive improvement (Johnson & Kaplan, 1987).

However, despite the environmental, managerial and technological changes that have occurred in the last thirty years, the existing conventional cost management systems are basically the same with ones that have been used since the mid twenties (Johnson & Kaplan, 1987). Due to the increasingly turbulent and complex context, traditional cost accounting information could not provide an accurate picture of a firm's activity and

cost information. Moreover, Johnson & Kaplan (1987) argued that traditional management accounting information has been criticized for the distortion of cost and lack of relevance for the purpose of decision making process.

Numerous researchers have highlighted the consequences produced by the failures of the traditional management accounting systems. Johnson and Kaplan (1987) stated that conventional costing systems fail to provide timely and useful information and accurate product costs to decision makers. Under traditional costing system, costs are traced to products or services in an unsophisticated and random way that fails to symbolize the real demand of each product or services on the company's resources, and mostly it is unable to reflect the new competitive environment (Johnson & Kaplan, 1987). Drury (1992) stated that traditional costing systems provide distorted costing information, which resulted in inaccurate decisions.

Cooper and Kaplan (1988) proposed an alternative approach to trace overhead costs to products or services. It is well known as Activity-Based Costing (hereinafter referred to as ABC). The ABC system has aroused many interests and is believed to provide more precise cost information about overhead costs and activities that drive them (Gunasekaran *et al.* 1999). Cooper and Kaplan (1991, 1992) suggested ABC as the most suitable method as an alternative to the traditional costing accounting systems, since ABC is capable of making the processes and activities conducted in firms more noticeable and discernible. Also, previous research findings show that ABC application can reduce the distortion found in reported product costs, as well as reduce the product prices (Gunasekaran *et al.*, 1998). Furthermore, ABC system has been argued by

numerous management accounting literature and textbooks as “superior” to traditional costing systems (Byrne *et al*, 2009).

There are two major differences between conventional costing system and ABC system. First is the reflection of non manufacturing costs. Tho *et al*. (2006) highlighted that under traditional costing system, some non-manufacturing costs, such as product selling, product distribution costs, interest costs are all treated as period costs. In today’s competitive environment, these costs are becoming a larger proportion of the total costs. In a traditional costing system, there could be a significant cross-subsidization among products that have varying demand for non-manufacturing costs as the consumption of these costs by products is not accounted as product cost. However, under ABC system, various costs including manufacturing and non manufacturing costs in the processes and activities carried by business can be traced to products (Tho, 2006). The second difference is the selection of cost drivers. Traditional costing system relies on a single cost driver, such as direct labor or machine hours to assign overhead costs, which is only suitable for companies that manufacture a narrow range of products. If it is applied to firms producing a wide range of products it may lead to the distortion of products or services costs (Cooper & Kaplan 1992). Moreover, inaccurate information which is produced by traditional costing system may result in serious problems, such as, inappropriate pricing decision, improper “make versus buy” decisions and the misallocation of capital and resources, which could lead to much resources assigned to less profitable product/services and less resources allocated to profitable one (Clarke & Mullins, 2001). Clarke and Mullins (2001) pointed out that under ABC system, unlike traditional volume-based cost method; overhead costs are allocated to products or services by adopting multiple cost drivers, and these costs are assigned to products/services according to the use of activities needed to produce them.

ABC established a causal relationship between organizational activities and the products/services provided by assuming that products/services consume activities and activities incur overhead costs (Swenson, 1995). ABC can also help managers to identify and eliminate non-value added activities, so the use of ABC information should result in more accurate information for product costing and pricing, buy and make decision, as well as customer profitability information (Clarke & Mullins, 2001).

Due to its capabilities to provide detailed information to support strategic and operating decisions, such as product pricing, process improvement, improving product mix, and business performance evaluation led a growing number of large organizations ranging from manufacturing to non-manufacturing, from profit oriented businesses to non-profit organizations to adopt ABC system (Cooper & Kaplan, 1992; Swenson, 1995).

Motivated by ABC' benefits and importance, there has been an increase in the members of the business and academic committee began conducting research on ABC. Academician have done research on various aspect of ABC, for example, McGowan (1998) and Maher and Marais (1998) focused on evaluating the integrity of the ABC process; Cooper and Kaplan (1999) adopted a single case study to examine its application and implementation; while, others attempted to find out the level of interest and adoption (Innes & Mitchell 1995, 1997; Malmi 1999); and several researchers attempted to identify the factors influence the ABC success implementation (Anderson 1995; Shields 1995; Foster and Swenson 1997; Anderson and Young 1999).

## **1.2 Problem Statement**

Tremendous changes in the manufacturing environment make traditional costing system irrelevant and create a need for a new costing system. ABC was created in mid 1980s by Cooper and Kaplan as an alternative and innovative costing system to overcome the shortcomings of traditional costing system. ABC is argued to provide more accurate, relevant and timely information for managers under today's competitive circumstances.

Not long ago, a number of firms have designed and applied ABC systems. However, there is an abundance of evidence which emphasized that many of these firms are have problems in applying ABC and, in some serious cases, firms' ABC implementation is not successful, which later results in abandoning the ABC systems altogether, (Cooper *et al.*, 1992, Argyris & Kaplan 1994, Anderson, 1995, Shields, 1995). Therefore, understanding the factors that could influence ABC success is very critical in ensuring firms to gain the full benefits of ABC systems.

Numerous research have been undertaken to investigate factors influencing ABC's success implementation among ABC adopters, and most of them were conducted in developed countries. Shields (1995), Anderson (1995), Gosselin (1997) and Byrne and Stower (2009) conducted research in the U.K, U.S.A, Canada, and Australia respectively. Results from these studies have shown that the successful in implementation of ABC in Western and European firms depends on various behavioral, organizational, such as top management support, adequate resources, and training rather than technical factors, such as the involvement of consultants, identification of key activities, and the selection of cost drivers (Argyris & Kaplan 1994; Shields & Young 1989; Shields, 1995). However, very little evidence is found on the role of

organizational culture and organizational structure in predicting ABC's success implementation, thus more studies should be conducted to provide a better understanding on the role of these factors in influencing ABC's successful implementation.

Furthermore, in view of the vast number of research conducted in Western and European appears that only a small number of experiments have been conducted to test ABC implementation and its experiences in implementing ABC in the Asian countries, especially in the Chinese context. Since China joined the World Trade Organization (WTO) in the year of 2001, Chinese firms began adopting western management accounting practices, including, ABC (Yanren, Wenbin, & Thomas, 2008). Research undertaken on factors influencing ABC success was mainly generated in western countries (Lana & Pan, 2007). Developing countries adopt modern accounting techniques and practices from western countries, which may cause difficulties during implementation stage (Morakul & Wu, 2001). One cannot ensure whether the firms in China could implement ABC successfully (Islam & Kantor, 2005; Lana & Pan, 2007) and whether the roles of the behavioral, organizational, and technical factors in ABC success in the Chinese context would be different compared to those in the western context. Hence it is imperative to give this matter due attention so that it could conform with the Chinese way of doing business as they may have different ways of adopting and implementing ABC system. So far, only one case by Lana and Fei (2007) examined factors affecting ABC success in a state-owned business in China. Therefore, more studies need to be undertaken to investigate the critical factors in determining ABC success implementation in the Chinese context.

### **1.3 Research Questions**

Given the problem statement described in the previous section, this study aims to investigate the factors associated with ABC success implementation in China. Specifically, the following research questions have been developed;

- 1) Is there any relationship between ABC success and the behavioral and organizational variable in the Chinese manufacturing firms?
- 2) Is there any relationship between ABC success and technical variables in the Chinese manufacturing firms?
- 3) Is there any relationship between ABC success and organizational structure and ABC success in the Chinese manufacturing firms?
- 4) Is there any relationship between ABC success and organizational culture in the Chinese manufacturing firms?
- 5) Is there any difference in terms of the level of perceived ABC success among different types of strategy in the Chinese manufacturing firms?
- 6) Is there any association between firms performance and ABC success in the Chinese manufacturing firms?

### **1.4 Research Objectives**

#### **1.4.1 General Research Objectives**

Consistent with the research questions described in the previous section, the general objective of this research is to provide empirical evidence on the degree to which various behavioral, organizational, technical, organizational culture and organizational structure factors are associated with the success of ABC implementation, and whether the success of ABC implementation is associated with firms performance, namely, manufacturing performance, and business performance.

### **1.4.2 Specific Research Objectives**

Consistent with the above general research objectives, the specific research objectives are set as follows:

- 1) To examine the relationship between behavioral and organizational variables and ABC success;
- 2) To examine the relationship between technical variables and ABC success;
- 3) To examine the relationship between organizational structure and ABC success;
- 4) To examine the relationship between organizational culture and ABC success;
- 5) To examine the differences in terms of the perceived level of ABC success among different type of strategy, namely, prospectors, defenders and analyzers;
- 6) To investigate the relationship between ABC success and firms performance, including manufacturing performance, and business performance.

### **1.5 Significance of the Study**

This study contributes to both theory and practice perspectives.

#### **1.5.1 Theoretical Perspective**

The theoretical model adopted in the current research is an extension of Shields and Young's (1989) and Shields' (1995) models. Using their work as the basis, this study extends their models by adding two additional variables; they are organizational structure and organizational culture. Review of the previous research reveals that no studies have examined the combined effects of organizational structure, organizational culture with behavioral and organizational and technical variables in examining factors influencing ABC success. Therefore, the current research proposes a more comprehensive model of ABC success by examining the role of organizational culture



and structure together with behavioral and organizational, technical variables to determine the dominant factors influencing ABC success in Chinese context.

The effect of organizational structure on management accounting practices is stressed by many researchers. Damanpour (1991) stressed the importance of organizational structure, and he stated that whether an innovation can be successfully adopted or implemented to some extent is determined by the type of structure the firm adopts. Up to 2008, only one prior empirical research conducted by Gosselin (1997) among Canadian business units that examined the effect of organizational structure on ABC success comprehensively. Gosselin (1997) found a significant association between organizational structure and ABC implementation stage. However, at present very few studies including Gosselin (1997) and Lana and Fei (2007) in a Chinese state-owned enterprise that examined the role of organizational structure on ABC success implementation. Therefore, in this study, organizational structure is added as one of the predictors.

So far, the effect of organizational culture on ABC success was examined by only one research by Baird *et al.* (2007) among Australian firms. They suggested that it is necessary to examine the relationship between ABC success and corporate culture, as well as how important cultural factors might be relative to organizational, non-cultural factors. Therefore, a second additional variable is organizational culture, which consists of four dimensions, namely outcome orientation, innovation, team orientation and attention to details.

In addition, so far only one research by Lana and Fei (2007) that examined the factors affecting ABC success among a state-owned business in China. As China is fast becoming one of the leading economies of the world, it is imperative to understand whether the same factors would affect ABC success among the Chinese firms. Furthermore, China represents an Asian country with different cultural values and it is might be possible that these values would affect ABC implementation among Chinese firms.

### **1.5.2 Practical perspective**

For practical perspective, this research provides two major contributions to the practice, especially, for manufacturing companies:

Past studies found some critical factors in determining ABC success, such as top management support, training, adequate resources, centralized structure, link ABC to performance evaluation and compensation and so on. The findings of this research can help to create more awareness among Chinese firms of the merits of ABC implementation and the critical factors that influence ABC success. In this study, the survey results indicate top management support was the most significant determinant of ABC success and ABC was related significantly with both manufacturing and business performance. This suggests that the respondents perceived top management support as the most important factor in ABC implementation. Thus, in order for ABC implementation to achieve its intended aims, companies must ensure top management supports this initiative and appropriate actions are taken to promote ABC and convince the top management of its merits.

This research also provides inspirations to policy maker, government body and professional accounting organizations, such as the Chinese Institute Certified Public Accountant (CICPA), the government and the professional accounting bodies to find ways to create awareness of the recent development in management accounting system and issues, such as ABC by publishing the information through various channels.

### **1.6 Scope of Study**

This study aims to examine the factors influencing ABC success in China and the effects of ABC success on manufacturing and business performance. In order to limit the scope, this study focuses on manufacturing firms from various industries listed on the directory of Chinese Chamber of Commerce and Industry (2008). Top management including chief financial officer, finance officer, finance director, chief accountant or other senior management from each firm were identified as the respondents for the mail survey. Non-manufacturing firms are excluded from this research. According to Rotch (1990), non-manufacturing industry is a much more heterogeneous group compared with manufacturers. For example, hospitals are different from banks and schools. And it is often hard to define its output due to activity following a service request is hard to predict, and in the same paper, Rotch (1990) also stressed that for non-manufacturing industry a higher proportion of total costs are contributed by its joint capacity and are often difficult to assign to output. In addition, Clarke, Hill and Stevens (1999) stated that unlike manufacturing firms, direct material costs and direct labor costs cannot be found in non-manufacturing businesses and a larger proportion of total costs are made up by its fixed cost. So, the differences described above made it difficult to consider ABC in non-manufacturing sectors.

Moreover, this study aims to examine whether an organization's structure has any impact on ABC success. As Gosselin (1997) stated that organizational structure, such as centralization, vertical differentiation and formalization link to industry closely. Different industry may have different degree of centralization, for example, and the degree of centralization for manufacturing industry is higher than that of service industry.

Due to the reasons described above, this study concentrates on examining the factors affecting ABC success from a sample of only manufacturing firms.

## **1.7 Definition of Research Variables**

This study involves an investigation of causal relationships of one dependent variable, four independent variables. The specific definitions of all the variables are as described as follows:

### **1.7.1 Activities-Based Costing**

The ABC defines costs in terms of an organization's processes or activities and determines costs associated with significant activities or events. ABC relies on the following three step processes (Cooper & Kaplan, 1988). Firstly, Activity mapping, which involves tracing and linking of activities in an illustrated sequence; secondly, activity analysis which requires defining and assigning a time value to activities; and lastly a bill of activities which involves generating a cost for each main activity (Cooper & Kaplan 1988). ABC is uniquely different from the traditional overhead allocation method which is based on a single cost driver whereas ABC uses multiple drivers.

Horngren et al. (2002, p. 140) define ABC as

A system that first accumulated overhead costs for each of the activities of the area activities being costed, and then assigns the costs of activities to the products, services, or other cost objects that require that activities. It identifies the activities performed, traces cost to these activities and then traces the cost of activities to products or services according to activities consumed, ABC is the foundation for better understanding the true profitability of products and services and to identify improvements initiatives.

### **1.7.2 Behavioral and Organizational variables**

In this study, behavioral and organizational variables were defined based on Shields and Young's (1989) and Shields (1995). Shields (1995) identified: top management support, linkage of ABC system to competitive strategies, linkage of ABC system to performance evaluation and compensation; sufficient internal resources; training in designing, implementing and using cost management system; non-accounting ownership; and consensus about and the clarity of the objectives of the cost management system as the seven behavioral and organizational variables that deemed to be important to the implementation of a cost management system.

### **1.7.3 Technical Variables**

In this study, the definition for technical variable was employed from Shields (1995) and Lana and Fei (2007). Lana and Fei (2007, p. 253) defined Technical Variables as:

Practical knowledge of applying the conceptual design of an ABC system within an organizational context, which mainly includes the identification of a suitable number of cost drivers and activities, selection of activities that relates to products, linkage between ABC and organizational strategic objectives, and an understanding of the capability of existing computer systems to support ABC systems.

This research also employed Lana and Pan's definition for technical variable to examine the effect of technical variables on ABC success implementation.

#### **1.7.4 Organizational Culture**

Higginson and Warder (1993, p. 11) defined organizational culture as “a set of shared values, norms and beliefs that get everybody heading in the same direction”. Baird *et al.* (2007) argued that culture could generally influence the success of business practices. Baird *et al.* (2007) divided organizational culture into four dimensions; they are outcome orientation, innovation, team orientation, and attention to details. This study adopts Baird *et al.*'s (2007) definition of organizational culture on ABC success.

#### **1.7.5 Firms Performance**

Firms' performance was divided into two perspectives; they were manufacturing performance and business performance.

##### **1.7.5.1 Manufacturing Performance**

Time, quality and cost are three elements in manufacturing performance (Ittner *et al.*, 2002; Banker *et al.*, 2009). Performance improvements represents reduction in manufacturing cycle time and customer waiting time, decrease in manufacturing cost and quality cost, as well as the enhancement in product quality.

In this study, manufacturing performance also refers to quality, manufacturing cycle time, customer lead time, and reduction in manufacturing costs. This study aimed to examine the association between ABC success and decrease in manufacturing cycle time and customer leading time, improvement in quality, as well as reduction in manufacturing costs.

### **1.7.5.2 Business Performance**

New Management accounting and control system (MACS) could result in the improvement in business performance (Mia & Clarke, 1999). A research by Isa (2004) found a moderate relationship between MACS change and business performance among manufacturing firms in Malaysia. ABC as an important technique of MACS, its success is expected to lead to the higher level of business performance. Therefore, this study also examined the effect of ABC success on firms' business performance.

Mia and Clarke (1999, p. 158) viewed the business performance as:

The extent to which the organization has successful in attaining its planned target or targets, Examples of performance criteria are: attainment of targets related to productivity, costs, quality, delivery, service, sales volume, market share, and profit.

In this study, Mia and Clarke's (1999) definition was adopted to measure business performance.

### **1.7.6 Success ABC implementation**

ABC success implementation is defined based on McGowan's (1998) view on ABC success. McGowan (1998) segmented ABC success into four perspectives, they are user attitude toward ABC implementation, technical characteristics rating, perceived usefulness in improving user job performance, and impact on organizational process.

McGowan (1998) highlighted that if a firm implements ABC successfully, it will result in positive attitude toward ABC, users will perceive the high technical characteristics of information produced by ABC, more useful in improving their job performance, and results in more improved organizational processes than traditional costing system.

This definition of ABC success is strongly supported by Byrne and Stower (2009). In their research they stressed that McGowan's (1998) view of success provides the most robust basis for the measurement of ABC success up to date. So this study also adopted this measure for ABC success implementation.

### **1.8 Organization of the Thesis**

The thesis will be organized into six chapters. Chapter 1 provides the overall view of the whole research. It highlights the background, problem statements, questions, objectives, significance, and scope of the research.

Chapter 2 covers literature in the areas of Activity-Based Costing system, behavioral and organizational variables, technical variables, structure variables, cultural variables, ABC success and performance of an organization. The study of the literature is based on the contingency theory and organizational change theory.

In Chapter 3, the framework and hypotheses of the current thesis are developed from the general consensus in the literature regarding the relationship among main research variables, namely, behavioral and organizational variables, technical variables, organizational structure variables and corporate cultural variables and ABC success implementation. Also, hypotheses were proposed to examine the effect of the ABC success implementation on the firms' performance.



Chapter 4 illustrates the methods used in the research and it is intended to explain how the research is to be implemented in order to gather the data which will subsequently be used to test the proposition which originated from Chapter 3.

Chapter 5 shows the results obtained from the data analysis techniques used in this study. The chapter contains the discussion on the profiles of the sample firm and respondents, preliminary data screening procedures, descriptive analysis and hypothesis testing.

Chapter 6 provides an extensive discussion on the findings and outcomes of this study which can provide additional insights on the findings of prior research. This chapter will also explain the theoretical and practical implications of this study. Lastly, it touches on the restraints affecting this research and suggestions for future research as well as research findings.