Target Costing Implementation and Organizational Capabilities: A Research Framework

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ABSTRACT

Target Costing (TC) has been successfully implemented to bring customers' needs back to the products design and development stage. The best practice of TC depends aggressively on organizational capabilities (OCs) where organizational functions are combined with cross-functional teams. This paper reviews the literature carried out from 1993-2012 on TC implementation and OCs as the success factors influencing TC. The review revealed that there were two research gaps; firstly the dimension(s) used by the literature to represent OCs as success factors for TC implementation has been fairly simplistic, emphasizing on "financial" or "non-financial" variables. Secondly, the OCs dimensions have not been specifically measured. Based on the research gaps identified, a research framework is developed. The paper intend to develop a framework that link the TC principles of "Price-led", "Customer-focused", "Design-centered", and "Cross-functional" with the four BSC's perspectives of "Financial", "Customer", "Internal Process", and "Learning and Growth". The proposed framework aims to get the right balance across the crucial elements of TC including cost reduction, quality, functionality, and lead time.

Keywords: *Target Costing – Organizational Capabilities – Research Framework*

INTRODUCTION

Due to diversity of products and increasing competition, manufacturing companies today are looking for ways in which they can make their products more competitive. Target Costing (TC) has been proposed as one of the ways that companies can adopt to ensure product competitiveness in terms of design, development and cost. It has been described in the literature as a multidisciplinary technique used for managing products costs by individual efforts shared across organizational functions. Recent attention of many manufacturing companies worldwide towards TC adoption has created a need to radically change their Organizational Capabilities (OCs) so that TC can be successfully implemented.

TC was developed by TOYOTA in the beginning of the 1960s and it has been used since by the Japanese automotive industry in general (Afonso *et al*., 2008). Adopting TC is initiated at the ealier stages of products life cycle as a cost management technique to manage product features; cost, quality, and functionality. According to Cooper & Slagmulder (1997), TC is a feedforward cost management technique rather than the traditional feedback techniques used to manage products cost during the production stage. In general, TC enables Organisations to manage their future profit target by determining the products' features.

The Consortium for Advanced Manufacturing-International's (CAM-I, 1999) defines TC as "a system of profit planning and cost management that is *price-led, customer-focused, design-centered and cross-functional*". Tanaka *et al*. (1993) define TC as "the process established to set and support the attainment of cost levels, usually, but not exclusively, expressed as a product cost which will contribute effectively to the achievement of an organization financial performance". On the other hand, Kato (1993) stresses that the "…target costing is not a simple cost-reduction technique, but a complete strategic profit management system". This is supported by Cooper & Slagmulder's (1997) that the term of TC should be a "cost management" and not a "cost reduction" technique. This justifies the vital role of TC in providing products with a desired function and better quality at lower costs.

However, there is supportive evidence in TC literature suggesting that the most important benefit of TC is to assist companies in making the right

trade-off between products cost, quality and functionality. It has been widely noted as a practice to support New Product Development (NPD) by keeping constant vigilance on the cost, quality, and functionality of products, and establishing tools to close the gap between current and desired costs (Ellram, 2006). Hence, OCs in the form of relevant information to product's cost as well as a careful decomposition of product's cost elements during the early stages of product life cycles determine the success of TC adoption. This requires Organisations to effectively maximize its capabilities and infrastructure throughout its value chain.

Joshi, 2001; Swenson *et al*., 2005; Kocsoy *et al*., 2008; Huh *et al*., 2008, recognized OC as the most important factor for TC implementation. Much attention was given in addressing the influence of OCs on the successful implementation of TC. However, the definitive measurement of OCs was confined to only financial and non-financial issues. This paper has two main objectives. Firstly, to identify and develop the dimension(s) used in addressing OCs as an influential factor of TC implementation. Secondly, to propose a framework based on the different dimensions. The paper is organized as follows: Section 1.2 discusses the selected studies pertaining to the TC implementation and OCs factors. Section 1.3 discusses the research gap of previous studies reviewed in the paper. The research framework based on the research gap identified is presented and discussed in section 1.4. Finally, the paper is concluded in section 1.5.

PREVIOUS RESEARCH

Selected empirical studies pertaining to TC implementation and the effect of OCs have been reviewed. The studies were collected from different refereed journals in management accounting field. In most of these studies, OCs have been identified as the main contributing factor to the success of TC implementation. Table 1.0 summarizes some of the main studies implicating TC implementation with OCs in different countries.

Table 1.0: Target Costing Implementation and OCs

OCs Classification	Previous Studies	Findings related to OCs Factors
Organizational Structure	Kato (1993)	Target Costing Support System
	Tani *et al.* (1994)	Target Costing Management (TCM)
	Chenhall & Langfield- Smith (1998) Joshi (2001)	Large firm size effect.
	Rattray *et al.* (2007) Smith *et al.* (2008) Juhmani (2010)	No significant relationship between TC adoption and firm size.
	Juhmani (2010)	High percentage use of low cost strategy in adopting TC.
	Kocsoy *et al.* (2008)	Pre-design customer analysis for setting TC Long-Term Product and Profit Planning The use of competition-oriented pricing method Determined of Cost estimations during the product design phase.
Organizational Culture	Huh *et al.* (2008)	Top management support Employed project manager
	Hibbets *et al.* (2003)	The impact of competitive environment and strategy.
	Joshi (2001)	Uncertainty avoidance, conservative attitudes of managers, quite expensive to adopt, and lack of training and expertise.
	Chenhall & Langfield- Smith (1998)	Close culture and business
	Filomena *et al*. (2009)	Break down cost targets into: product parts, product features, and product common elements
	Ax *et al.* (2008)	A negative relationship between TC adoption and PEU The positive effect of intense competition on TC adoption is moderated by PEU in a negative direction.
	Juhmani (2010)	High adoption rate of TC in redesigning existing products.
	Huang & Chen (2012)	Educational and Functional knowledge of TC team
	Tani *et al.* (1994)	Strong power of managers of product planning, development, detailed design, production engineering, purchasing and sales.

Organizational Relations	Kato (1993) Tani (1995) Feil *et al.* (2004)	Engineering function involvement Involvement of financial and accounting function at the final stages
	Hibbets *et al.* (2003)	A very tight linkage between supply management and the design function in the TC practice
	Ellram (2006)	The involvement of R&D, supply management and suppliers in the early stages of TC process
	Rattray *et al.* (2007)	High involvement of manufacturing, product development and design in TC process Suppliers are not involved in TC process
	Dekker & Smidt (2003)	The involvement of product development and design departments No involvement of accounting department.
	Juhmani (2010)	High involvement o manufacturing department in TC.
	Feil *et al.* (2004) Kocsoy *et al.* (2008)	Simultaneous engineering involvement High use of simultaneous engineering.

From these studies, OCs were classified into three main categorize namely; organizational structure, organizational culture, and organizational relations.

Organizational Structure

Organization size, measured in the selected studies either by sales volume or number of employees, has been found to be varied between the effect and not effect on TC implementation. For example, the studies of Chenhall & Langfield-Smith (1998) and Joshi (2001) among others argue that the organization size is an important factor in influencing the adoption of modern management accounting techniques. They reported that the application level of these techniques, such as more complex methods as TC, is shown to be higher in large size companies compared to medium and small companies. In Joshi's (2001) study, the company's size is a major influence in adopting TC among Indian companies. This clearly indicates that large size companies have adequate resources to support the implementation of such techniques. These new techniques would be suitable for their complex operations. Moreover, large size companies have relatively greater access to expertise in management innovations. In a case of New Zealand companies, Rattray *et al.* (2007), did not find any statistically significant relationship between

company's size and the application of TC. Similarly, Juhmani (2010) , found that there is no statistically significant relationship between the adoption of TC and Bahraini manufacturing firms. In addition, Smith *et al.* (2008) found that the TC technique is not significantly correlated with technological innovations as well as (number of employees and sales turnover).

TC, as one of many management accounting initiatives, must be driven by top management (Swenson *et al.,* 2005). Therefore, Huh *et al.* (2008) found that the most important factor for the successful implementation of TC among Japanese companies are top management support, linkage to profit planning, and cross-functional team. According to Tanaka *et al*., (1993), management considerations should be taken into account before setting TC. This includes the definition of TC scope (e.g. planning and design costs; manufacturing costs; selling expenses; customer's costs), the choice of full/ partial variable costs that must be made, the decision made on how the TC is to be set, the expectation of the production volume, period, speed and cost reduction rate, and the basis of the TC. Hence, top management decision to support all these considerations must be consistent with strategic targets is a top-down commitment towards TC setting.

Huh *et al.* (2008) examined the relationship between the three dynamic capabilities; local capabilities, architectural capabilities, and process capabilities; as success factors of TC implementation. They found that the architectural capabilities, such as management support, linkage of profit planning, and cross-functional team, are the most important factors for successful implementation of TC. These factors have a positive relationship with the three major elements: efficiency, marketability, and cost reduction. Huh *et al.* (2008) also found that the next important factor for the success of the TC is the process capabilities, whereas the impact of local capabilities is found to be relatively weak on TC performance. These results are supported by the results of Kato (1993), Swenson *et al.* (2005), and Kocsoy *et al.* (2008).

Organizational Culture

According to Swenson *et al.* (2005), Organisations should evaluate three areas to determine its readiness to implement TC. These include: (1) organization's culture and infrastructure, (2) TC's principles, and (3)

procedures and tools needed to support TC implementation. The influential factors of culture include managers' attitudes, believes, values, and society norms. Many studies, as reported by Joshi (2001), found an impact of these factors on certain management accounting practices including TC. In the comparative study between Indian and Australian contexts, Joshi (2001) investigated the effect of other culture dimensions developed by Hosftede (1980). This includes; power distance, uncertainty avoidance, individualism, and masculinity. He also found that the large power distance associated with individualism factors have a great impact on management accounting practices such as TC in both countries. Interestingly, Joshi (2001) found that the conservative attitudes of Indian management and the lack of training and expertise were seen to be the main factors explaining the low adoption rate of the TC.

Organizational Relations

In setting TC, a cooperative effort of organizational members from various functional areas is required (Swenson *et al.,* 2005). Based on CAM-I definition of TC, the principle of cross-functional team is essential in TC setting and this involves participants from within and outside an organization. According to Swenson *et al.* (2005), inside participants include marketing, purchasing, production, servicing and accounting departments, whereas the outside participants include suppliers, dealers, distributers, and recyclers.To identify the departments involved in the application of TC, many literatures on this subject confirm the importance of Target Costing Management (TCM) team in any organization. According to Tani *et al*. (1994), TCM can be used to derive target costs as well as a tool for planning the development and detailed design of new products. They argue that Japanese companies have adopted TCM as a response to the increasing environmental uncertainty. Similarly, Tani (1995) found that the managers of product planning, development, detailed design, production engineering, purchasing and sales have relatively strong power in the TCM.

Ellram (2006) found that the TC process of 11 Organisations in the US were not extremely different from the process of the Japanese companies. However, he found there are different parties involved at different processes. For example, R&D, supply management, and suppliers are more involved in the early stages of TC process in US than in Japan. This implies

the importance of supply management in the US as part of continuous improvement efforts. Kocsoy *et al.* (2008) found that low participation rate (2.91 – 29.6 per cent) of suppliers is a constraint for the success of TC activities within Turkish companies. The Juhmani's (2010) results similarly revealed that the extent of suppliers' involvement in Bahrain is low. However, the Ellram's (2006) finding contrasts with that of Rattray *et al.* (2007) where he found that suppliers are not considerably involved in TC practices among New Zeeland companies. This, however, may stem from the lack of trust or lack of awareness on the benefits from the organizational relationship with suppliers. According to Huh *et al.* (2008), the dynamic capabilities of managers to integrate, build, and reconfigure of various competencies are examples of an organization's competitive advantage. They classified organizational dynamic capabilities into local capabilities, architectural capabilities, and process capabilities. This was based on the model proposed by Kusunoki *et al*. (1995).

Gaps from Previous Research

In this section identifies two research gaps. The first gap relates to the definitional concept of product's quality and functionality as the main focus of TC. Due to this lack of conceptual definition, much focus has been given on cost reduction as the main priority for TC (it should instead have been a spin off effect) which could adversely affected the quality and functionality of a product. Some of the studies reviewed examined OCs variables that influence TC implementation from the financial perspective. For example, Rattray *et al.* (2007), Kocsoy *et al.* (2008), Ax *et al.* (2008), and Juhmani (2010) investigated the factors that may have impact on cost reduction objectives. These factors may have different impact on the extent of non-financial elements; quality and functionality. Other studies stressed the involvement of suppliers, design and development whilst ignoring the involvement of the accounting and financial department involvement (e.g. Kato, 1993; Tani *et al*., 1994; Tani, 1995; Feil *et al*., 2004). Hence, this may not be in line with the the trade-off objectives between cost, quality and functionality.

According to Cooper (1995), Organisations should ensure the minimum level of the three dimensions; cost, quality, and functionality, in order to survive and compete in today's highly competitive market. In his study of Japanese companies implementing TC, he developed a framework called

the *Survival Triplet*. The framework includes three elements namely: cost, quality, and functionality. However, the concepts of quality and functionality have not been adequately addressed in the current literature as they have been defined from a narrower idea. Researchers have reported that the most important benefit of TC is to assist companies in making the trade-off between cost, quality and functionality (e.g. Kato 1993; Cooper, 1995; Cooper & Slagmulder, 1997; Cooper & Slagmulder, 1999; Ax *et al*., 2008). Other researchers have found that the reason for a lower adoption of TC is that it results in a lower quality as the product has to become cheaper (e.g. Rattray *et al*., 2007; Kocsoy *et al*., 2008; Juhmani, 2010).

The second gap relates to the need to have a comprehensive measure of quality and functionality. Whilst OCs have been recognized in the literature as success factors for TC implementation, the dimension(s) used in previous studies to measure OCs has been fairly simplistic or generic. Most previous studies (e.g. Joshi, 2001; Swenson *et al*., 2005; Kocsoy *et al*., 2008; Huh *et al*., 2008) have either used (i) "financial" or "non-financial" measures of OCs, or (ii) the OC variable is used to measure cost reduction, quality and functionality on a piecemeal basis rather than as an integrated measure. Therefore, product quality and functionality factors should be ensured in reducing cost from the extent of a broader balance among both financial and non-financial measures. This was not addressed in the current literature. As TC has been mainly used to reduce product cost whilst not sacrificing the other critical elements; product quality, functionality, and lead time. The balance between these elements is crucial. This is to make sure that the company in implementing TC is moving towards its strategic objectives. In other word, the complexity of frequent processes followed in decomposing the gap between estimated costs and TC makes it difficult for Organisations to balance between product cost, quality, functionality, and lead time. This requires organization a careful attention in adjusting products structure to achieve TC is required. Subsequent section proposes framework to close the above two researche gaps.

PROPOSED RESEARCH FRAMEWORK

The contribution of this study is the inclusion of the proposed Organizational Capabilities Theories to explain the research framework development.

Proposed Theory

As OCs have many definitions addressed by researchers, the focus here will be on the definition describing OCs as dynamic capabilities and developed by Teece *et al.* (1991), as cited by Kato & Yoshida (1998). According to them, dynamic capabilities refer to the mechanisms and processes that enable Organisations to develop new competence. TC technique emphasizes systematic changes and knowledge creation within the Organisations as well as a full commitment across organizational functions toward TC implementation. Hence, the framework proposed below for TC implementation study particularly depends on the Dynamic Capabilities Approach theory as one of the organizational capabilities theories.

Research Framework

As previous studies investigate the effect of organizational factors on TC implementation, they failed to point out the inter-relationship among these factors. Balanced Scorecard (BSC) has been described as a customer-based planning and process improvement system aims to translate strategies into an integrated set of financial and non-financial measures (Pineno, 2009). Hence, the BSC system, in the study assumption, can be applied to evaluate TC performance. This is to find out the best combination of selling price with the desired quality and functionality to achieve product profitability. Figure 1.0 shows the link of BSC system to the TC strategy adapted from Kaplan & Norton (1996).

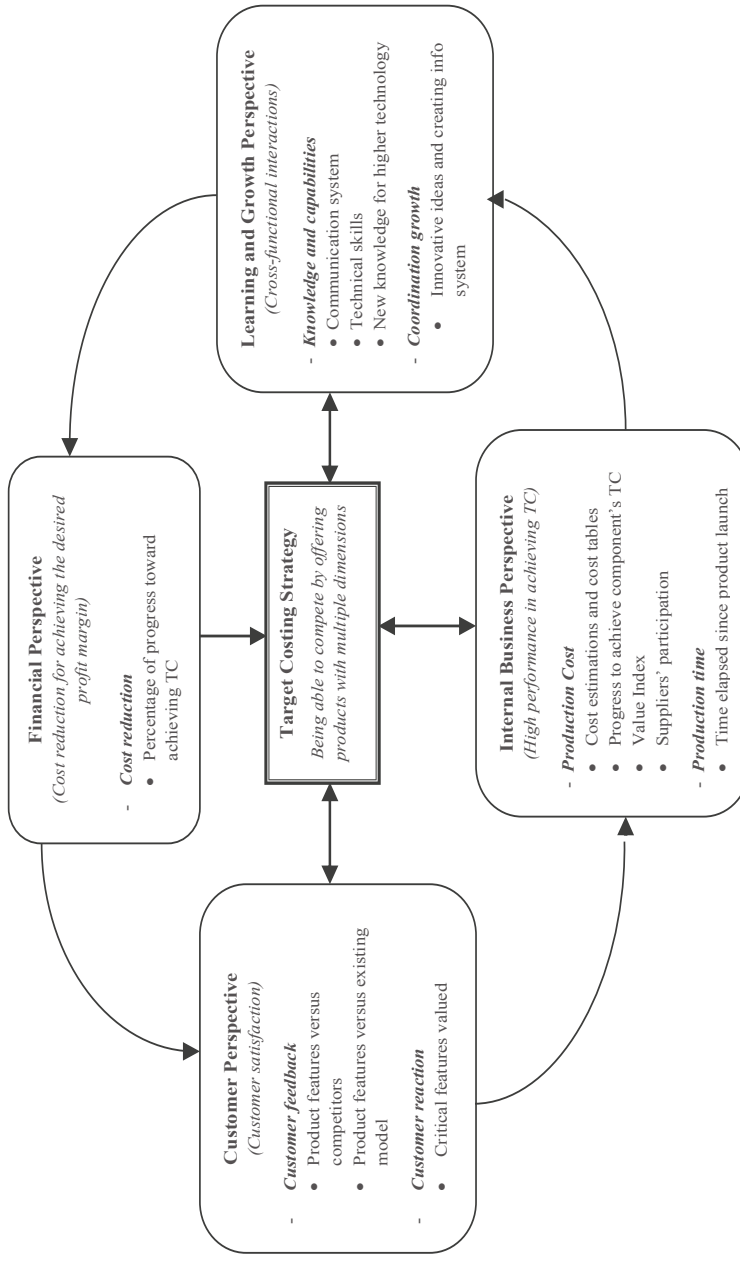

Figure 1.0: Linking BSC to the TC strategy adapted from Kaplan & North (1996)

Based on the linkage of BSC system to the TC strategy, the theoretical framework depicted in Figure 2.0 is developed for the current research by using the four perspectives of the BSC to measure OCs variables.

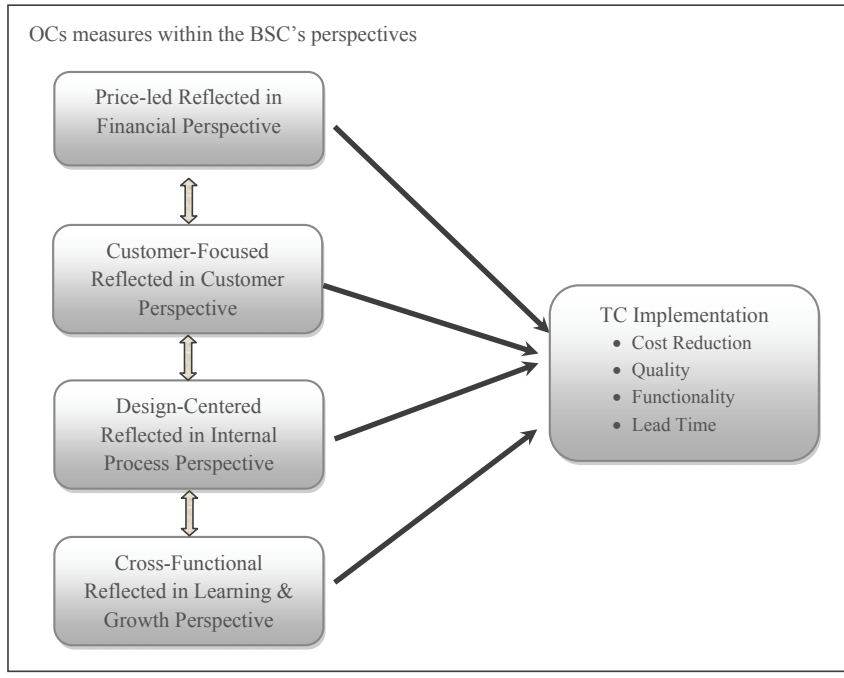

Figure 2.0: Theoretical Research Framework

The proposed framework is based on the *Survival Triplet* of Cooper (1995) and CAM-I's (1999) definition of TC. As stated above, TC is defined by CAM-I (1999) as "a system of profit planning and cost management that is *price-led, customer-focused, design-centered and cross-functional*". Using this definition, some similarities in certain aspects of these principles could be respectively recognized in the four perspectives of BSC; *financial, customer, internal process, and learning and growth*. Both techniques are commonly used to satisfy customers' needs and desires for achieving financial objectives and overall strategic objectives. Hence, the OCs measures of *price-led, customer-focused, design-centered and cross-functional* would be reflected in the BSC's four perspectives respectively; *financial, customer, internal process, and learning and growth*.

CONCLUSION

TC technique has been reviewed by accounting literature as an excellent tool to reduce and control costs of products and services. This paper attempts to discuss the OCs influence in the TC practices. The organization strategy, infrastructure, culture, and its value chain relations internally and externally were identified as influencing factors on the TC implementation. This is clearly appeared in the adoption rate of this technique in the different studies reviewed. Most of the previous studies were limited to either financial or non-financial variables hence resulting in less comprehensive results. The proposed framework combines OCs factors and uses the four perspectives of BSC to measures OCs variables. This is to ensure opportunities for achieving the balanced TC objectives driven by applying BSC's perspectives to measure OCs as predominant factors for achieving the successful implementation of TC. In developing the research framework, the paper applied the TC principles stated in CAM-I's definition to be reflected in the BSC's perspectives. This is to support TC strategy across all the dimensions of cost reduction, quality, functionality, and lead time. For future empirical studies, the integration of OCs measures within the BSC's perspectives can be examined. This is to practically identify how the BSC model can be a supportive tool for TC implementation success.

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