

ASPECTS OF OBSTACLES FOR APPLYING TARGET COSTING: A SURVEY OF MANUFACTURING FIRMS IN EGYPT

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Abstract

The present investigation aims to determine the aspects of obstacles for applying Target Costing(TC) system in Egyptian case and the significant differences among effects of these obstacles . The study used the survey method to describe and analyze the obstacles in some Egyptian firms. The population of the study is Egyptian manufacturing firms. Accordingly, the number of received questionnaires was 388 (21 Egyptian manufacturing firms) in 2013. Finally, the study found that there is a significant divergence among obstacles for applying Target Costing (TC) system in Egyptian manufacturing firms (Internal and external).The external dimensions are the most influence of internal dimensions, where the weakness of the competition is the highest effect in the external dimensions case but resistance top management is the highest effect in external dimensions case.

Key words: Egyptian firm, manufacturing, target costing

INTRODUCTION

During the last decade US firms adopted new managerial approaches such as Total Quality Management (TQM) and Just-In-Time(JIT) production control.

TQM and JIT along with others have substantially enhanced the effectiveness and efficiency of shop floor operations. Nonetheless, there is still a huge mine of further improvement in the product development function. According to Clark and Fujimoto (1991), competitive advantage of successful automobile manufacturers stems from product development which generates well balanced cars meeting customers' needs. Many studies imply that even greater improvement of firm performance than what has been accomplished by TQM and JIT at shop floor might be expected from better product development processes.

Target Costing (TC) is a management process to reconcile the discrepancy between two levels of product cost from different perspectives: the cost that allows a firm to sell its product to customers within market competition; the cost at which the firm can

supply its product given the firm's technology without sacrificing profitability.

Cooper (1994) claims that Target Costing (TC) is more effective in reducing product cost than what he calls the conventional western approach.

The main objectives of the research are to determine the aspects of obstacle for applying Target Costing (TC) system in Egyptian firms; furthermore and to determine the extent of similar effects between these obstacles.

MATERIALS AND METHODS

The authors used the survey method to describe and analyze the aspects of obstacles for applying Target Costing (TC) system in Egyptian firms. The population of the study was Egyptian manufacturing firms.

Definitions of Target Costing (TC) in past Research:

Past research of Target Costing (TC) encompasses a fundamental limitation. The limitation stems from the definitions of Target Costing (TC). There are two definitions, one narrow and one broad. Neither is satisfactory

to properly define the intrinsic characteristics of Target Costing (Helmy,2009).

Cooper (1994) presents the narrow definition: "a structured approach that uses the expected selling price of a product under development and its desired margin to determine the cost at which the product must be manufactured". The definition is narrow because it focuses on how the Target Costing (TC) is set without explicit reference to how the target is achieved.

By contrast, Sakurai (1989) defines Target Costing (TC) more broadly as: "a cost management tool for reducing the overall cost of a product over its entire life cycle with the help of the production, engineering, R and D, marketing, and accounting departments." The definition is broader since it comprehends various activities of the value chain. Moreover, Sakurai even extends the time line to the entire product life cycle.

Japanese researchers prefer Sakurai's definition to Cooper's since the former reflects the target costing's function of integrating development activities of different business functions. Interestingly, direct translation of the Japanese term *genka-kikaku* is not target costing but cost planning; the latter connotes a broader range of activities than the former. Indeed, some Japanese researchers (e.g., Okano 1995 and Tani 1995) use the English expression target cost management instead of simple target costing in order to emphasize the comprehensive nature of the cost approach. They contend that Cooper's definition referring to one aspect of the cost system, how the cost target is set, is too narrow.

Kobe University (1992) employs similar definition of Target Costing(TC).

From that, Target costing's principle can be explained by a simple equation as follows:

$$\text{Selling price} = \text{Total cost} + \text{profit margin} \dots\dots\dots 1$$

Ideally, the left hand side of the equation reflects external factors of business.

Selling price should primarily be determined by customer demand and market competition.

The right hand side of the equation represents internal factors of business. Total cost must include expenditures necessary for all business functions to sustain the supply of the product. Profit margin should be set at the level to fulfill the required return on assets. Nevertheless, in reality it is rare that the equation holds when each variable is determined by the corresponding forces. Demand and competition tend to push selling price downwards whereas there is an upwards pressure on total cost and profit margin due to the firm's limited capability and shareholder's requirement.

Target Costing (TC) takes selling price and profit margin to be given, and derive the total cost satisfying the equation. This total cost is set as a target for developing a product.

Alternatively, a firm taking conventional western approach (conventional approach, hereafter) develops the product first to project the total cost (Worthy, 1991). Designers and engineers attempt to minimize the total cost but no target is set in advance. Then, total cost is subtracted from the plausible selling price to obtain profit margin. If the resulting profit margin is not satisfactory, the proposed product is dropped.

Another version of the conventional approach, cost-plus principle, is to add up projected total cost and desired profit margin to obtain selling price. If the resulting selling price is not competitive in the market, the product is abandoned as well.

There are two major differences between the principles underlying target costing and the conventional approach. In target costing the target of total cost is given in advance before a product is developed, whereas in the conventional approach no explicit cost guidance is set although designers and engineers try to minimize total cost (Cooper 1994). Second, in target costing the launch of product to the market is a premise, while the conventional approach reserves the alternative of dropping the prospective product.

A modification is necessary to the above picture of Target Costing(TC). Although in principle every cost is expected to be taken into account, in almost every case, the focus is

on manufacturing cost incurred by direct labor, parts and materials, equipment and tooling depreciation, and other manufacturing overhead.

Expenditures for R and D, marketing, distribution, sales and administration are not the subject of target costing. Accordingly, the present chapter mainly limits its scope to manufacturing cost. The chapter, however, refers to other costs, especially development cost, when they are relevant.

Target Costing (TC) process steps:

Just as there is no a general accepted definition of Target Costing (TC), there is no single Target Costing (TC) process. Each company has evolved its own organizations and practices. Consequently, some variations of Target Costing (TC) have been developed and are being used in different countries. Target Costing (TC), like many other business management practices and philosophies that has its specific environment, thus, it is expected to find variations in the target costing process in Japan or western companies.

The Target Costing (TC) process is closely linked to the strategic planning and product development cycle of a company (Ansari et al. 1997). This linkage forms the foundation of the target costing process. The strategic planning process defines the goals that a company must attain to satisfy market demands and remain profitable. While the product development cycle provides the other context for target costing.

Target costing manages cost and profit during the product development cycle stages (Kato,1993 ; Monden,1995 and Sakurai,1996) . The opportunity to use product design as a vehicle for cost management typically applies only to new product (Kato, 1993; Ansari et al., 1997 and Everaert, 1999). However, target costing can be used for existing products when these products or their manufacturing processes are being rapidly redesigned (Ansari et al., 1997;Shank and Fisher, 1999 and Monden, 2000).

Target Costing (TC) plays a key role during the product planning, concept, and design stages of the development cycle. Once

production begins, target costing assumes that a backseat and continuous improvement (Kaizen Costing) takes over the cost management role. According to Ansari et al. (1997), the product development can be described as a continuous cycle divided into four phases (Fig. 1):

- Product strategy and profit planning: the development cycle starts with the strategic planning at the company level. The result of this phase is plans of a business, product, and profit that spell out the particular market segments a company intends to sell in and the products it intends to produce for this chosen niche. Also, these plans spell out the planned market shares and required profit margins from the various products.
- Product concept and feasibility: the next step in the product development cycle is to translate product and profit plans into specific concepts. Product concepts are developed using customer input and competitive intelligence. Product feasibility is determined by making preliminary life cycle cost estimates, evaluating the technology needed, computing the required investment, and estimating the available capacity.
- Product design and development: once a product concept is accepted and its feasibility tested, it goes into full-fledged design and development. Detailed specifications for manufacture and assembly are developed at this step. Manufacturing processes are concurrently designed and suppliers are called in to provide design and process improvement ideas.
- Production and logistics: the start of full-fledged production and distribution marks the culmination of the product development cycle. Service and support plans are achieved. Market results and customer responses are monitored to provide information for continuous improvement or redesign of the existing or next generation products.

Taken as a whole the four phases involve the determination of a target cost with the cycle

being repeated in order to ensure attainment of the target cost.

Thus, the Target Costing (TC) process occurs in two key phases that correspond to the product development cycle.

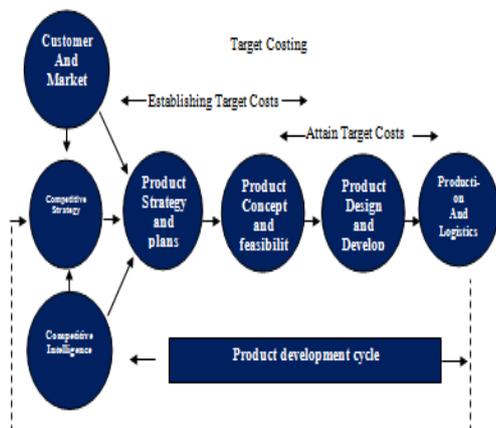


Fig. 1. Target Costing (TC) process within the strategic planning and product development cycle (Modified from Ansari et al., 1997).

Ansari et al. (1997) called them the establishment phase and the attainment phase. Fig.2 shows the two phases of the Target Costing (TC) process in relation to the product development cycle and strategic planning. The establishment phase occurs during the product planning and concept development stages of the product development cycle and involves setting a Target Costing (TC). While the attainment phase occurs during the design development and production stages of Target Costing (TC) and involves achieving the target cost.

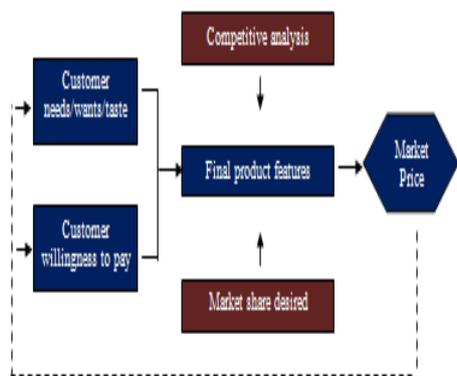


Fig. 2. Setting prices in target costing (Ansari et al., 1997)

In literature, many studies (e.g. Cooper, 1995; Cooper and Slagmulder, 1997; Ansari et al., 1997 and Monden, 2000) introduced many steps to establish and attain Target Costing (TC).

Research variables

The model of study includes main independent variables which represent obstacles for applying Target Costing (TC) system in Egyptian firms.

The following function was used:

$$Y = f (X_1, X_2, X_3, X_4, X_5, X_6).....2$$

where:

Y: Obstacles for applying Target Costing (TC) system,

X₁: Resistance top management,

X₂: Resistance Middle management,

X₃: Weaknesses in the accounting information system,

X₄: The weakness of system accounting,

X₅: The costs of design and application system,

X₆: The weakness of Competition,

X₇: Characteristics of the market.

Data

The authors used the questionnaire instrument in addition to the test approach to confirm the correctness of views collected. The number of questionnaire instruments sent was 441 and the number of the received questionnaires was 388 with a response percentage of 87.98%.

Methods of data analysis

The study used a Statistical Package for the Social Sciences (SPSS) for application of reliability, descriptive and inferential statistics.

RESULTS AND DISCUSSIONS

Statistical analysis

1. Reliability

The correlation coefficient between the dimensions (Obstacles) was significant (at level 1%) and the Cronbach-Alpha Coefficient was 83.71.

2. Descriptive

Table 1 shows the mean values and Standard Deviation (S.D.) of survey dimensions (Obstacles).

The descriptive statistics of dimensions impact showed that the mean values for the weakness of competition (3.8146) > resistance top management (3.7075) > weaknesses in the accounting information system (3.6314) > the costs of design and application system (3.4515) > the weakness of system accounting (3.1041) > characteristics of the market (2.5411) > resistance middle management (1.8981).

Table 1.Descriptive statistical values

No.	Dimension	Mean	Std. Deviation
1	Resistance top management*	3.7075	1.0865
2	Resistance Middle management*	1.8981	2.9786
3	Weaknesses in the accounting information system*	3.6314	1.8766
4	The weakness of system accounting*	3.1041	1.6301
5	The costs of design and application system*	3.4515	1.3812
6	The weakness of competition**	3.8146	1.2900
7	Characteristics of the market**	2.5411	2.3414

*Internal dimension

**External dimension

Source:SPSS output

3.Inferential statistics

Table 2 shows output of Kruskal-Wallis Test values.

Table 2.Output of Kruskal-Wallis Test

	V
Chi-Square	2299.928
df	6
Asymp.sig.	.000

Source:SPSS output

From Table 2, it may be observed that there are significant differences among the aspects of obstacles for applying Target Costing (TC) system in Egyptian firms.

CONCLUSIONS

The study found that there is a significant divergence among obstacles (dimensions) for applying Target Costing (TC) system in Egyptian manufacturing firms (Internal and external obstacles). The external dimensions are the most influence of internal dimensions, where the weakness of the competition is the highest effect in the external dimensions case but resistance top management is the highest effect in external dimensions case.

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