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A Review on the Target Costing System and its Implementation for the Development of Mobile Phone Producing Company in Bangladesh

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Abstract

Target costing is a powerful strategic tool that allows an organization to address all the dimensions of quality, cost and time simultaneously. It is essential for coping with today's globally competitive environment. It has got enormous concentration in many parts of the world. However, in Bangladesh there is little evidence of implementation of the target costing system. This research paper highlights the target costing system as a contemporary tool to minimize the cost within the allowable quality. The paper gives a guideline, how target costing can be implemented in a newly established mobile phone producing company through a hypothetical example. As the maximum market share has been occupied by the foreign brands and the market is competitive, a local company needs to be very conscious regarding their price determination and costing practice. The company needs to establish a target cost and attain that target cost. Market research, competitor analysis, determining the target customers, adding new features according to customers' choice, setting a market price , setting the required target profit, computing the cost gap, designing the product and finally producing the product with continuous improvement will result in a satisfactory survival of the company. This article shows how through applying a target costing system a newly entrant mobile phone producing company in Bangladeshi market will be able to capture a competitive as well as a targeted position having a reasonable market share initially.

Introduction

With the passage of time, mobile phones are getting much popularity in developing countries like Bangladesh and hence, its use is increasing steadily. In early1990s when the mobile phone came into Bangladeshi market (Wikipedia, 2012); there were only two mobile phone

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operators. At present, six mobile phone companies are doing business in this emerging sector. Initially, mobile phone was very expensive and its usage was beyond the reach of common people. Currently, almost half of the population of Bangladesh has access to mobile phones and the number is increasing day by day (Yusuf & Alam, 2010).

Since the emergence of Mobile phones, local brands and their markets have not been developed yet. The market is fully controlled by the foreign brands. Handsets of established brands like Samsung, Nokia, Sony Ericsson, LG, and Motorola etc. can be found in Bangladesh via local branches, dealers and importers. In addition to that there are grey market products. Many Bangladeshi people personally bring handsets when they travel abroad and sell it at a lower price in the local market. The biggest problem of these handsets is that if they are damaged, the users cannot repair them for these products do not carry any warranty. In recent years, Chinese brand handsets gained lots of popularity. With attractive design, features and lower prices, Chinese brand handsets took Bangladeshi market by storm. Aside from well-known brands like Tecno, Symphony, Maximus, Sprint and Digital, and I-Max, lesser known Chinese phones are widely available in numerous shops in Dhaka city. Indian brands such as Micromax, Maxx and Zen are also available in Bangladesh. Recently Walton, a Bangladeshi brand is trying to capture some shares of the local mobile phones market.

Needless to say, mobile phone is a very necessary product for our everyday life. The core benefit consumers are seeking from a mobile phone is the communication solution. Mobile Phone provides communication utility as the core benefit, but in association with it provides some other benefits like entertainment and fashion also. So while consumers are buying a mobile phone they are considering a lot of attributes. Most frequent attributes that consumers are seeking are; price, durability, battery life, after sales service, utility software, high quality sound and design. Saha, Talukdar, Ghosh (2012) found that among the seven attributes Bangladeshi consumers give top priority on 'price'. That is they are more conscious about the price of the product. It indicates the price sensitivity of Bangladeshi consumers. After the 'price' they give emphasis on the 'design' of the product. It indicates the fashion consciousness of the Bangladeshi consumers. The third emphasis is given on the 'durability' of the product. Consumers evaluate how long the product will last. It means Bangladeshi consumers look for a durable product. The fourth important attribute is the 'battery life' of the product. How long the charge of the mobile phone will last is important to them. Among the rest of the variables 'utility software' has the 'fifth' position, 'after sales service' has 'sixth' and 'high quality sound' has the seventh position

It is very difficult for a new company to enter into the market and survive successfully. The market is competitive and the price cannot be increased. The dissemination of technology and knowledge has accelerated considerably. This faster pace makes it difficult to use any one factor such as quality for a long –lasting competitive advantage. In order to survive in the long run, the companies should establish strategy and translate those strategies into actions. Since the consumers give more emphasis on price, costing of the products play a vital role here. A market driven costing or a target costing can only keep pace with the market. Target costing is a system of profit planning and price management that is price led, customer focused, design centered and cross functional. Target costing has become prime issues in today's world and many countries are trying to adopt target costing as a better measurement of profit planning system. Based on the above grounds, this paper focuses on the development and implementation of the target costing systems in a mobile phone producing company in Bangladesh.

Objectives of the Study

The main objective of this paper is to give a guideline of translating the strategies into outcome and achieving the desired goal by implementing target costing system in a mobile phone producing company in Bangladesh. The key ideas of target costing have been discussed here and also it has been shown that how target costing can be established as well as implemented in a mobile phone producing company. Through a hypothetical example, we give a guideline on how target costing system can be introduced and implemented in a mobile phone producing company.

An Overview of the Target Costing System

Target cost is the allowable amount of cost that can be incurred on a product and still earn the required profit from that product. It is market-driven costing. Target costing can improve a firm's competitive position by improving quality, reducing costs and accelerating the time to market.

The target costing was originated in Japan in 1960s. Japanese industries took a simple idea called value engineering from America and it was originated at General Electric during the Second World War. Value engineering is an organized approach to determine how to produce products with the fewer parts. Later it became an organized effort to examine how to provide the needed features or functions in a product at the lowest possible cost. Japanese industries expanded the basic concepts of value engineering into the target costing process. Today more than 80% of assembly industries in Japan, such as automobiles, electronics, consumer appliances and machine tools and dyes use the target costing.

The contemporary industrial environment has made target costing so essential. Today businesses face a global environment that has four characteristics, such as:

1. Competitive, because prices cannot be increased in many key industries. Many new producers, some with a lower cost of doing business, have entered the global marketplace.
2. A Rapidly changing, because the dissemination of technology and knowledge has accelerated considerably. This faster pace makes it difficult to use any other important factor, such as quality, for a long-lasting competitive advantage.
3. Unforgiving of mistakes or delays, since shorter product lives leave little time to respond to changes in the market place or to recover from mistakes.
4. Demanding, because sophisticated consumers have knowledge of many products and want better quality products at an affordable price. It is difficult to sell inferior products with reduced features at a lower price.

In short, target costing is a process that anticipates costs before they are incurred; continually improves product and process designs; externally focuses on customer requirements and competitive threats; systematically links an organization to its suppliers, dealers, customers, and recyclers in a cohesive and integrated profit and cost planning system.

Following are the six key ideas that provide conceptual foundations for target costing:

1. Price led costing: Target costing sets the target cost by first determining the price at which a product can be sold in the marketplace. Subtracting the target profit margin from this target price yields the target cost, that is, the cost at which the product must be manufactured. This is summarized in the equation:

$C=P-\pi$

Where,

C = Target cost

P=Competitive market price

Π= Target profit

In target costing, market price is the independent variable; costs allowed for designing, manufacturing, marketing and other functions (the target costs) are dependent on the market price.

2. Customer driven: It means that customer requirements about product quality, price, and timeliness guide cost analysis. The target cost must not only yield the target profit but also allow the manufacturer to match competitive product dimensions. The target cost cannot be attained by sacrificing the features that customers want, lowering the performance or reliability of the product, or delaying its introduction in the market place.

3. Product design: Design of product and processes is the key to cost reduction efforts. Traditional cost reduction methods focus on production efficiencies such as waste reduction or buying in quantity to reduce cost. This is not the prime focus of target costing. Target costing focuses on product design because most costs, nearly 70-80 percent, are committed at the design stage, while only10-20 percent of the costs are incurred at this stage. The best opportunity to manage costs is while a product is still in design.

4. Cross-functional product teams: Manufacturing a product at or below its target cost requires the involvement of people from many different functions in an organization: market research, sales, design engineering, procurement, production engineering, production scheduling, material handling, and cost management. Individuals from all these diverse areas of expertise can make key contributions to the target costing process. Moreover, “a cross-functional team is not a set of specialists who contribute their expertise and then leave; they are responsible for the entire product.”

5. Life cycle costing: Life cycle costing considers all costs of owning a product over its life. In specifying a product’s target cost, all of the product’s life-cycle costs are incorporated. These include the costs of product planning and concept design, preliminary design, detailed design and testing, production, distribution, and customer service.

6. **Value chain**: Value chain members such as suppliers, dealers, and service and support personnel are part of the target costing process and help to focus cost reduction efforts throughout the value chain. A target costing system is based on long term, mutually beneficial relationships with suppliers and other Members of the value chain such as distributors and recyclers.

Traditional cost-plus systems typically start with costs and then add a profit margin to obtain a market price. If the market is unwilling to pay the price, the firm tries to find cost reductions. Target costing starts with a market Price and a planned profit margin for a product and establish an allowable cost for the product. Product and process design are used thereafter to reduce product cost so it is equal to this allowable cost.

The Target Costing Process

Target costing occurs in two phases that correspond roughly to the stages of product development cycle. They are called the establishment phase and the attainment phase of target costing. The establishment phase occurs during the product planning and concept development stages of the product development cycle and involves establishing a target cost. The attainment phase occurs during the design development and production stages of the cycle and involves achieving a target cost.

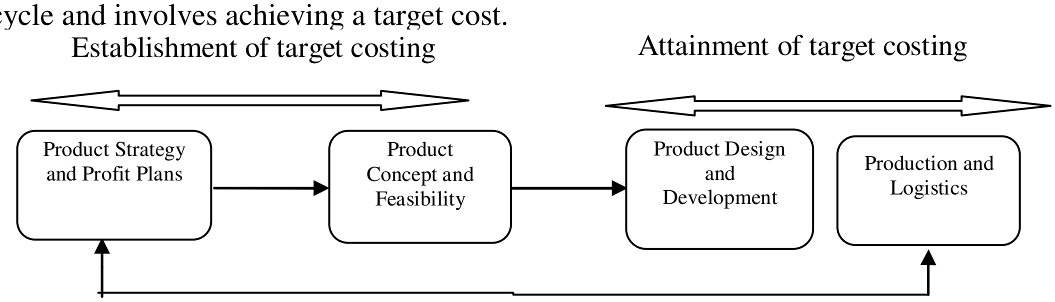

Figure 1: The target costing process

Establishing Target Cost:

Target costs are established within the parameters defined by a firm's product strategy and long-term profit plans. The following figure provides an overview of the establishment phase of target costing. It shows that there are seven major activities that must be performed to establish target costs.

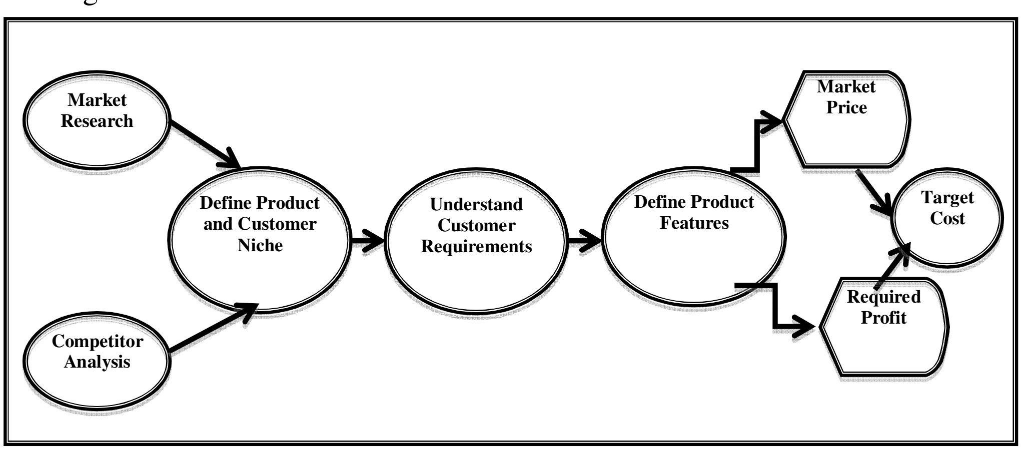

Figure-2: Establishing Target Cost

1. **Market Research**: Through market research firms collects information about unmet needs and wants of customers. This research defines the market and/or product niche that a company plans to exploit.

2. **Competitor Analysis**: It determines what competitors' products are currently available to our target customers, how the customers evaluate these other products, and how our competitors might react to our company's new product introductions.

3**. A Customer or Product Niche:** This is defined by analyzing market and competitor information to decide what particular customer segment to target.

4. **Customer Requirements** are determined by introducing an initial product concept and asking customers for their reactions. Preliminary designs are then refined, based on continued input from customers until the product meets their requirements.

5. **Product Features** are defined by setting specific requirements for the features the product will have and the levels of performance of each feature.

6. **A Market Price** is established that is acceptable to customers and capable of withstanding competition. Market prices can be established in many different ways. Three common methods are:

   a. Existing price plus the market value of new features added.

   b. The projected market price that will provide a target market share.

   c. Existing price plus the value of added physical attributes. This method is typically used for products for which a customer's desired performance is captured by some physical characteristic of the product.

7**. The required profit target**: Once the market price has been established, a target profit margin needs to be calculated. This is typically as a return on sales (ROS) percent. In essence, products must be profitable enough to yield a satisfactory return and cash. This target margin drives from the company's overall long-term strategic and financial objectives resulting from the company's profit planning efforts. Different product lines or products will have different target profit margins established for them, depending upon a number of factors. Typical factors considered include: the strength of the target market price or the aggressiveness of management's pricing strategies to penetrate markets; the firm's own cost position, whether or not it is a low-cost producer and the level of investment required to support the product.

The difference between the market price and the target profit margin is the target cost that the organization is committed to achieve.

Attainment of Target Cost:

The second phase of target costing addresses how to attain the target cost, which means how to turn this allowable cost into an achievable cost. There are 3 steps in attaining target costs:

1. Computing cost gap:

The first step of attaining target cost is to compute the difference between allowable cost and current cost.

2. **Designing costs out:**

Reduction of cost through product design is the most critical step in attaining target cost. Design of the product affect all costs associated with the product from its inception to its final disposal. To include all costs not just manufacturing costs, may appear farfetched at first. However many downstream costs such as distribution, selling, ware housing, service, support and recycling can be greatly impacted by product design.

3. **Release design and undertake continuous improvement**

The final stage in attaining target cost is to continue to make product and process improvements that can reduce costs beyond that which is possible through design alone. It includes steps such as eliminating waste, improving production yields and other such measures. It is after production starts that actual cost can be compared against targets and lessons learned can be applied to the next generations of product developed.

Implementing Target Costing System in XYZ mobile phone producing company: A hypothetical example

To have a better explanation of Target costing system, in this section Target costing system will be discussed through a hypothetical example of XYZ mobile phone producing company.

Establishment of target cost:

1. Market Research

XYZ is a mobile phone manufacturer. XYZ has a research team who determined that there is a market for a mobile phone set that is waterproof as well as durable, and the operating system is not complex. XYZ form a cross-functional team to come up with an initial product concept and to test its feasibility. Assume the XYZ product team proposes an initial product concept that combines a durable handset and long battery life, long duration of charge with utility software such as graphics, camera, video conferencing and easy use of internet.

2. Competitor Analysis:

There is huge competition in this market segment .Handsets of established brands like Samsung, Nokia, Sony Ericsson, LG, Motorola can be found in Bangladesh via local branches, dealers and importers. In recent years, Chinese brand handsets gained lots of popularity with attractive design, features and lower prices. Chinese brand handsets took

Bangladeshi market by storm. Aside from well-known brands like Tecno, Symphony, Maximus, Sprint and Digital, and I-Max, lesser known Chinese phones are widely available in numerous shops in Dhaka city . Indian brands such as Micromax, Maxx and Zen are also available in Bangladesh. Recently , Walton ,a Bangladeshi brand is trying to capture some shares of the local mobile phones market .However Bangladeshi people are patriotic and they will like locally produced mobile phone if the manufacturer can ensure good features and quality within the affordable price.

3. A Customer or Product Niche:

XYZ is targeting the needs of young people, especially who are students and service holders. They need handset that is durable, furnished with well utility software and easy access to internets. If this type of mobile phone set is technically and financially feasible, then next steps for the product team are to understand customer requirements and define product features.

4. Customer Requirements and Product Features:

Assume that based on surveys and focus group, the XYZ is a mobile phone manufacturer has identified the following features important to the customers These customer requirements become the basis for the engineering design of the mobile phone.

1. Durable handset and long battery life, long duration of charge
2. Utility software such as graphics, camera, video conferencing and easy use of internet.
3. High quality of sound with audio and video features
4. Water proof Mobile phone set
5. FM radio installed in the handset
6. Slim Handset design
7. Affordable price
8. Warranty, guaranty and after sales service

Engineers must ensure that the product encompasses all the features that are important to the customers. This initial set of features will become the first product definition for design purpose. The product team now must convert this customer input into a more precise product definition.

5. A Market Price:

Market price of a new mobile of XYZ Company can be established by the following methods:

a) Average industry price plus market value of new features added. Since XYZ is new in the market so it can use average market price of the same product instead of existing price. Then add market value of new feature provided to their cell phone. For example, if they provide video-conferencing facility in their cell phone, they might consider average market price plus value of video conferencing software to determine new price.

b) XYZ can set the price that will capture their target market share. For setting such a price XYZ go for extensive market research on price of existing mobile with same quality & features of Competitors Company.

c) XYZ can also set target price by adding cost of added physical attributes with average market price. For example if XYZ install a camera of 10 mega pixel in new model, instead of 5 mega pixel of existing cell phone in the market. It calculates the price by adding extra cost of installing camera of 10 mega pixels with existing price.

Required target profit: As a new comer in mobile phone industry, XYZ has to set it's required profit target to measure their financial objective .Profit target of XYZ can be measured by Return on sales (ROS),which largely depends on firm's long term financial return and average industry return.

Formula for calculating target profit-

Target ROS= w_1(historical ROS)+w_2(industry ROS)+w_3(projected ROS)

Where, $w_1+w_2+w_3=1$

For determining profit target XYZ must assign weight on their existing ROS, industry ROS as well as Projected ROS for new cell phone. Since XYZ is new entrant existing ROS will be nil. So zero weight for historical ROS and the market is quite matured so the industry ROS is not so favorable. But the weight of industry ROS is reasonable. If industry average is 12% and weight is 0.4; projected ROS is 15% and weight is 0.6 then target ROS for XYZ may be-

$(0\times0) + (.4\times12) + (.6\times15) = 13.8\%$

XYZ must form a cross functional team to come up with an initial product concept and to test its feasibility. Assume the product is technically then market research for testing financial feasibility is required. XYZ is new in the market, so they to collect price information of competitor's product, with same features. Then it has to add the value of new features or physical attribute. With considering their desired market share, it can determine the target price of new cell phone.

For example, Market price of same type of cell phone is Tk.8000.For adding new features like camera of 10 mega pixels, more durable of battery charge; graphics and video conferencing software add cost of about Tk. 2000. So the cost will Tk.10000 with a view to capture 15% of market share, it set a target price at tk.12000. Industry return of this sector is 10-12%. Assume XYZ set target profit margin at 10%. So the allowable cost of new cell phone of XYZ is {12000-(12000×10%)} =10800.

Attaining Target Costs

1. Computing cost gap:

The first step of attaining target cost is to compute the difference between allowable cost and current cost. In our example xyz is new, so cost of existing mobile is considered as current cost. Overall cost gap can be analyzed on life cycle and value chain breakdowns.

We represent cost gap computation hypothetically in the following table:

Value chain	Inside			Outside			Total		
Life cycle	allowable	Current	Gap	Allowable	current	Gap	allowable	current	Gap
Research& development	Tk.432 (4%)	Tk.480	Tk.48				Tk.432	Tk.480	Tk.48
Manufacturing	1620(15%)	1770	150	Tk.3780 (35%)	Tk.4380	Tk.600	5400	11480	750
Selling and distribution	756(7%)	800	44	1080(10%)	1220	140	1836	1880	44
Service and support	864(8%)	864	-				864	864	
General business overhead	1944(18%)	1944	-				1944	1944	
Recycling cost	324(3%)	342	18				324	342	18
Total	Tk.5940 (55%)	Tk.6200	Tk.260	Tk.4860 (45%)	Tk.5600	Tk.740	Tk.10800	Tk.11800	Tk.1000

Table 1: Comparing Allowable and current cost Life-cycle and value-chain Breakdowns

For computing cost gap xyz can use its market research and past experience to get idea about initial cost. For example, xyz expect they incur 50% of its product cost in manufacturing process which can be divided into outside suppliers in 35% and inside processing and assembly in factory 15%.This percentage is the starting point to set allowable cost in life cycle and value chain. The chart also shows life cycle break down as a percent of allowable cost Tk.10800 as follows: R&D (4%), manufacturing(50%), selling and distribution(17%), service and support(8%), general business overhead(18%), and recycling (3%).It also shows 55% of allowable cost of Tk.10800 or Tk. 5940,is within xyz and 45% or Tk.4860 outside of xyz.

XYZ estimate initial product cost 11800.a gap of (11800-10800)= Tk.1000.It also present manufacturing cost has largest gap of Tk.750 with 150 inside gap & 600 outside gap. Outside selling and distribution has also gap of Tk140.it is clear from the table that xyz cost reduction effort must be external and internal.so, it is better for xyz to closely work with suppliers and distributor sand involve them in the cost planning and reduction process.

2. Designing costs out: To attain target cost xyz must attempt to reduce cost at manufacturing and distribution part at first as at these levels the cost gap is higher. To reduce cost the company can chose parts (battery, ram, and software) produce in Taiwan, instead of China. Battery of Taiwan has the capacity of 5.5 volt, whereas china battery has capacity of only 3 volt. In case of ram, memory of 36 Gigabyte (GB) costs Taiwan ram only 400tk, where Chinese ram costs Tk. 860.On the other side, xyz can install video conference and graphics software with other application software. It can use Chinese software instead of Japanese software at a lower rate.

Another strategy of xyz to reduce cost gap is improving selling and distributing process. They can choose direct marketing such as-establish own showroom, e-selling, home delivery and so on to increase their exposure in the market.

3. Release design and undertake continuous improvement:

The final stage in attaining target costs is to continue to make product and process improvement that can reduce costs not only by manufacturing but also eliminating waste, improving production process etc. xyz has to follow the procedures to survive in the competitive market of cell phone industry.

Conclusion:

Bangladesh is one of the developing economies in the world. However the economy is growing fast, although the market is not strong for the technology based product such as mobile phone, computers, and refrigerators; but recently Bangladesh has come out with its locally produced technical product. And their performance is much satisfactory and market also shows positive response to this locally produced product. But in the competitive world pricing is equally important as quality. Otherwise it is impossible for the company to sustain in the market. The effective way to balance between cost and quality is to implement target costing system. Mobile phone producing company can implement target costing system to sustain in this competitive market. In our article we have given a hypothetical example how to implement target costing system in a cell phone producing company. Establishing target costing requires a rigorous market research, determine target market, understand the customer needs and requirements, adds relevant features, determine market price and determine required target profit. After establishing target costing, it needs to be implemented. Implementation of target costing requires, computing cost gap, design cost out and release design for manufacturing and perform continuous improvements. Proper implementation of target costing can make the company sustainable and profitable.

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