“The Activity based costing and target costing as modern techniques in determination of product cost”

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ABSTRACT : Today, in the interrelated market place those enterprises are able to compete that manage to pin hope in continuance of their own commercial activity. More simply, they should manufacture some products with competitive advantages and introduce them to market, that they possess high quality with a reasonable use life and at the same time to be cost-effective for both producer and consumer in terms of price. In the past time, the system of price-finding was traditional for production that was followed by many defects accordingly, and it it made this often difficult to achieve the aforesaid goal; however, at present in order to achieve their long standing wish for durable activity and flourishing and acquiring stable customers, enterprises have made useful efforts and through emergence of new creativity and innovations, they have introduced modern techniques to indentify final cost accurately. In the present article, through conducting a review on two modern techniques of Target Costing and Activity Based Costing, we have interpreted a brief history and analysis about other aspects of these two techniques in a descriptive way.

Keywords: Traditional costing, Target costing, Activity Based Costing (ABC)

INTRODUCTION

With respect to the dramatic transformations, which have been made in the field of technology and introducing modern techniques and attitudes since the early 1980s, the organizations came to the result that in order to survive and give the higher quality services to customers, they should enhance their own methods and performance, and to lower the costs noticeably, of course the accelerated growth in technology provided the possibility for several dimensions to some extent in this trend, but additionally these organizations should revise the accounting and administrative techniques since reliance on traditional methods and techniques may no longer meet their requirements today. Thus, the existing requirement on the one hand, and growth and development of new attitudes about management accounting on the other hand, have caused developments in the presentation of new techniques of calculation of cost. Absolutely, there are several techniques and models for effective cost management (Anderson and Young, 1999).

In this essay, it has been tried to explore into two modern techniques of costing (budgeting) out of which one focuses on recognizing the needed activities for giving services and measuring cost of activities while the latter examines production costs based on goal presentation, but both techniques seek for lowering cost according to their own methods (Azizi and Modares, 2002; Bogdanoiu, 2009).

Activity Based Costing (ABC)

At the end of 1960s and in early 1970s, some of accounting researchers studied on the relationship between activity and cost. But at the end of 1980s, pursuant to reflection of the current defects and deficiencies in accounting for presentation of accurate information about cost, due to the following reasons, it was specially focused on this subject in academic and professional centers: firstly it was a modern change that occurred in the world to introduce modern technology, new production mechanisms within several countries particularly in Japan and some other nations. Secondly, in 1980s new intellectual philosophy that was adopted by managers of enterprises affected by some major changes. Some factors like profitability, competition at world level, increasing customers’ satisfaction, emphasis on products quality control and lowering costs were taken as main
goals for directors as well. Thirdly, the fact that costing traditional systems not only can not meet managers’ needs but also using of the information derived from these system in some cases causes misleading and leads to making improper decisions (Cooper and Slagmulder, 1997). At fourth place, anyway following this trend, the increase of competitive market that requires rational allocation of production costs, a new system was introduced under the title of activity based costing that was a 2-D system. Afterwards, it expressed costs allocation from resources to activities and then also from activities to cost objectives, that might lead to presentation of useful information in order to achieve corrected goals inside and outside the organization. As a result, this technique may be defined as follows (Szychta, 2010):

“Activity based costing is based on the function of a method in which costs are spent according to the ratio of activities share allocated by any product, are allocated from a cost reserve to different products.”  

With respect to the above definitions, it may be implied that ABC emphasizes on activities needed for producing of those products (services) and then according to the use rate of any product, the activities are shared and divided among 1-products. There are 4 classes of activity in this system, including:

1- Activities at level of product unit
2- Activities at level of product class
3- Activities at product level
4- Activities at factory level

In order to acquire the maximum efficiency with the minimum cost, designers of activity based budgeting system follow up 5 steps in designing this system as follows (Namazi and Nazemi, 2012):

1- Integration of activities;
2- Reporting of activities cost;
3- Recognition of activity centers;
4- Selection of source derives; and
5- Selection of activity derives

The advantages of using activity based costing system

One could refer to some positive effects of application of this technique in the following cases:

To determine final cost more accurate and thus gross profit for any product;

To select appropriate production basket in such a way that to acquire the maximum gross profit value-

Separation of value- creating activities from ones without value-added.

To prepare ground for activity based management as one of the constant improvement loops in organizations;

To assign activities to contractors with value rate, which guarantees fair profit for the given enterprise and contractor

Anyway, to implement ABC system, seven steps should be taken:

Step I: To form design team for system and data collection team;
Step II: To define activity centers;
Step III: Separation of activity centers based on operation;
Step IV: To determine output of any activity center;
Step V: To identify several derives for production and non-production costs;
Step VI: To assign costs in any activity center to final cost centers;
Step VII: To compute final cost according to any output.

But certainly no certain method and technique is free of problems and difficulties. The problems caused by execution of ABC system may be expressed as follows:

1- It does not cover the problems relating to low quality, poor design, and partial markets.
2- It requires creating managerial thinking.
3- Often, managers do not think about activity based budgeting as a plan for organizational change.
4- It includes more details and is more complicated than standard costing system.
5- It is one of the various statistical criteria. Similarly, it uses cost various derive and different cost rates and overhead various rates (Ozbayrak et al., 2004).

In any case, with respect to all the mentioned issues and problems, implementation of activity based budgeting system successfully may affect on organizational performance at macro level as follows:

Improvement of efficiency: This technique indentifies constantly low value-added activities and as a result proper implementation of activities is frequently evaluated.

Enhancement of effectiveness: In fact, through omission of activities with value-added and by focusing on value-added bearing activities, one can be assured of proper function for the beneficiaries.

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The rise of the level of knowledge among consumers, the enterprises had to adapt. As a result, target costing was introduced as a strategic tool for cost management, enabling organizations to simultaneously find three dimensions of quality, cost, and time.

**Target costing**

In 1960s, that was called age of new products, Japanese companies mainly focused on mass production of uniformed products while cost management paid no attention to the role of planning and design in production, but the focus point of cost management was placed on centralized production phases. Thus, standard costing was considered as the main cost control tool. Gradually, with the improvement of the life level of Japanese people and also with the rise of the level of knowledge among consumers, the enterprises had to manufacture various products with different properties. Industrial robots and automated machines shortened the manufacturing process and factory’s overhead and does not formally exert high-tech impacts.

Regardless of the needed activities for production and distribution, it calculates final cost for a cycle or phase of product or service.

There is one or maximally more cost centers for allocation of costs at corporative and/or section level in this technique.

To share and divide factory overhead cost, one basis or more bases are used maximally.

In this system, overhead proration bases are used that they are not necessarily based on cause and effect relations among all overhead items.

Financial bases are used for sharing overhead costs.

Costs are divided into two groups of normal costs (production) and direct period costs and moreover this distinguishes fixed costs from variable costs.

**The comparison among activity based costing and traditional costing system**

<table>
<thead>
<tr>
<th>Traditional Costing System (Based Costing Size)</th>
<th>Activity Based Budgeting (ABC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: To present information about profitability of different section in economic enterprise</td>
<td>Goal: To give information regarding fields of profitability, customers’ satisfaction, and competition at international level</td>
</tr>
<tr>
<td>It is used in plain, standard, and normal production. It calculates product final cost by means of direct raw materials, direct wage, and factory’s overhead and does not formally exert high-tech impacts.</td>
<td>It utilizes in plain, complex, and non-standard production. It computes product final cost by the aid of direct raw materials and factory’s overhead (conversion cost) and it considers the costs relating to technology, quality control at international level.</td>
</tr>
<tr>
<td>Regardless of the needed activities for production and distribution, it calculates final cost for a cycle or phase of product or service.</td>
<td>It creates final cost directly or with lower values by employing cause-and-effect relation between the needed activities for production and distribution of product or service and the economic value of the resources.</td>
</tr>
<tr>
<td>There is one or maximally more cost centers for allocation of costs at corporative and/or section level in this technique.</td>
<td>In this method, several cost centers, which determined by the rate of activities, are used.</td>
</tr>
<tr>
<td>To share and divide factory overhead cost, one basis or more bases are used maximally.</td>
<td>Multiple bases are adapted for and activity center and any cost center in this method.</td>
</tr>
<tr>
<td>In this system, overhead proration bases are used that they are not necessarily based on cause and effect relations among all overhead items.</td>
<td>The duly basis is determined and used for factory overhead proration (sharing) rate exclusively according to cause and effect relations.</td>
</tr>
<tr>
<td>Financial bases are used for sharing overhead costs.</td>
<td>Financial and non-financial bases are utilized for sharing overhead costs.</td>
</tr>
<tr>
<td>Costs are divided into two groups of normal costs (production) and direct period costs and moreover this distinguishes fixed costs from variable costs.</td>
<td>All costs are considered as product related cost and this system considers all costs as variable types with respect to long run perspective.</td>
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**Target costing**

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In this system, overhead proration bases are used that they are not necessarily based on cause and effect relations among all overhead items.

Financial bases are used for sharing overhead costs.

Costs are divided into two groups of normal costs (production) and direct period costs and moreover this distinguishes fixed costs from variable costs.
Surely, target costing is one of the most efficient techniques of cost management for which it could be compared with other managerial strategies that are this day employed in competitive markets and particularly world free trade market to products with short term operational cycle. The comparison of target costing makes it possible for enterprises to express target of lowered cost in practice.

**Advantage of using target costing system**
- To determine waiting cost for manufacturing of product by giving services
- To acquire more effective cost
- To recognize customers’ requirements
- Adaptation of enterprise’s activities to customers’ needs
- To enter world competition market
- To make occupational members aware of cost targets and sense of commitment in them for innovation in product
- To use the existing opportunities in the market
- To reduce price of purchasing parts and materials and creation of motive and spirit for team working within organization etc.

Doubtlessly, no certain technique is free of some problems. Some of the existing problems in application of target costing system in Iran are as follows:
- Establishing of target costing should be accompanied with accepting all its theoretical and practical bases and by selection of one or two principles and or using them it could not be concluded that target costing system has been established in an enterprise.
- Target costing mechanism is applicable to the competitive climate and it is required acquisition of the appropriate price in order to achieve target cost and profit, under the current circumstances when the economic fluctuations govern over the society, if identifying this target is not possible, it will be very difficult at least.
- Alternately, the idea of customer-orientation is not prevalent in Iranian economy and customer has limited right for selection and at the same time lack of team group spirit and not establishing the final cost proper system are some other factors that hinder adaption of target costing system.
- What inferred from studies on different industries for application of target costing technique is this point that target costing serves as a valuable tool for lowering cost of product. This technique is not only a plain toolbox but this method adapts also frequently the other techniques. These techniques are: 1) Market evaluation technique; 2) Technique for review of the rival enterprises and data based reverse engineering; and 3) Activity based budgeting that is focused on intra-organizational information (Goodarzi, 2004).

**The comparison among target costing and traditional costing system**

<table>
<thead>
<tr>
<th>Traditional Costing System (Based Costing Size)</th>
<th>Target Costing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market price is not considered as a part of planning for final cost.</td>
<td>Competitive price is addressed in planning for final cost.</td>
</tr>
<tr>
<td>Costs determine sale price.</td>
<td>Sale price determines production costs.</td>
</tr>
<tr>
<td>Factors of waste materials and inefficiency are addressed for lowering costs.</td>
<td>Design of product is an important and essential in lowering of costs.</td>
</tr>
<tr>
<td>Customer is not involved in lowering of costs.</td>
<td>Customers’ data is considered as a guide for lowering costs.</td>
</tr>
<tr>
<td>Team work and activity and multiple skills are not addressed.</td>
<td>The existing team work and activity and multiple skills and On The Job (OJT) trainings are extremely noticed.</td>
</tr>
<tr>
<td>Value-driven engineering is not utilized.</td>
<td>Adaption of value-engineering serves as a prerequisite for this system.</td>
</tr>
<tr>
<td>Suppliers of materials and parts participate after product design.</td>
<td>Suppliers of materials and parts participate before product design.</td>
</tr>
<tr>
<td>This is a closed system since external variables are ignored.</td>
<td>This is an open system and mutual action or external effect of variables on the system is noticed.</td>
</tr>
</tbody>
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**CONCLUSION**

In traditional costing system, Production process was divided into several stages and in each stage production and non-production costs were recognized and then production costs were divided between manufactured products. In this method, the relevant and irrelevant costs to the manufactured products, based on overhead amount, were prorated between the manufactured products. Alternatively, activities with and
without value-added were not accurately identified. While in costing modern techniques, the pre-production costs are effectively examined by management before production phase and since acquiring to the certain final cost is the basis of work, so by adaption of modern methods, the cost-creating activities of production and the stimulant factors for their creation are identified and whereas the objective is to achieve customer’s satisfaction and acquisition of market and having high and appropriate quality in production, thus for determining the final cost, all production tools which may be relevant and appropriate are used, but it differs for which the items without value-added and irrelevant are omitted and what involved in the process of producing the product is taken into consideration.

REFERENCES


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