

Considerations Concerning the Application of Target Costing Method in the Industry of Dairy Products

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Abstract

In the present conditions of the market economy, which is in full process of globalization, the adaptation of the more complex and diverse needs of the final consumers, leads to a permanent creation and development of new products and services by the entities in order to satisfy these needs. Thus, the entities must apply efficient and tested methods for determining and provisioning the costs which will result from launching new products on the market, methods which would support and ensure the best quality – price report, and which are to reduce the production costs up to a level of not affecting the quality of the final product. Such a method, according to specialty literature is the modern method of Target Costing.

Key words: target costing method, target cost, selling target price.

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1. Introduction

The entities' main objective within the market economy is the continuous development of the activities in order to adapt to the market's more polyvalent and diverse requirements, by making products which are to satisfy these requirements. For making quality products with a selling cost which satisfies the needs of the customers, but which also contain the costs and profit margin wanted by the entities, these may use the modern method of cost calculation Target Costing. Therefore, the present paper realizes a reappraisal of the specialty literature concerning the main theoretical elements connected to this method, as well as a study which is to point out the way of applying the Target Costing method in developing and launching a new yogurt range, by an entity having its core business the manufacturing of dairy products and cheeses.

The initial concept of Target Costing method existed in Japan since 1960, being used by Toyota Company for the first time. The concept has seen a slow development rhythm because many companies have implemented the Target Costing method as a response of the external environment's changes. With the intensification of the competition, the Target Costing method has evolved being adopted by many companies, and the methodological results have been improved. (Ofileanu, Bumbescu, 2014, p. 45).

Target costing method was developed in Japan in the eighties in car industry and it is based on the idea that a product's selling price is set in the market. According to this method, the price does not depend on the cost, but rather, the cost of the product is adapted to the price. It is a modern method of inventory which uses evaluated techniques concerning market study, value analysis, diversity reduction, but also a cost calculating method. (Briciu et al, 2010, pp. 386-387)

2. Scientific Research Method

The purpose of this paper is to present, both from a theoretically and a practically point of view, the applying of one of the most modern methods of cost calculation, respectively Target Costing.

The used methodology for realizing this purpose was a theoretical research and presentation of the Target Costing method's main characteristics, found in the specialty literature, therefore becoming a qualitative research, but also a practically presentation of applying this method when launching a product by an entity, a new yogurt range.

3. Specialty Literature Reappraisal

Throughout time, because of the continuous development of the economic environment in which the entities develop their activity, these have created methods in order to sustain the best decision taking and such a method is the modern method of cost calculation, Target Costing. This comes to support the entities to determine the target cost of the new product which will be launched on the market and which will ensure the customers with the best quality – price report, but also a reduced production cost without affecting the quality of the product.

For defining the target costing concept, we must establish the notion of cost first, and within the specialty literature we meet more definitions of cost. According to Tepeş-Bobescu and Rakoş in the American literature, the cost is defined as being an expense or a sum of expenses associated (and recognized) with a consumed resource, a business, a manufactured product or with a reported period. In the French literature the cost is defined as being an algebraic sum of the expenses associated to a defined element in an accounting network, and the element is a product or an operation. Another approach defines the cost as a necessary amount of money in exchange of goods and services in the moment of their acquisition and the fair adequate value at that moment. Romanian authors define cost as a management instrument of controlling the costs and it has the purpose of informing the decision factors (managers). This allows them to form an opinion concerning the entity as a whole and also to manage client relationship through costs. (Tepeş-Bobescu, Rakoş, 2015, p. 168)

Tabără and Briciu define cost calculation as being the process of determining the target cost for future products, starting with the stage of development of the new product and as being a support for reaching the target cost along the process of development of the new product. (Tabără, Briciu, 2014, p. 128).

According to Calu and Dumitru, target costing represents the maximum cost which may be reached by the new product, given the requirements concerning the asked quality and profitability objective. This cost may be reached taking into consideration the profit level wanted by the organization and the clients' availability to pay for a certain product. Target's cost value must be established in advance, during the development process of the new product for determining the project engineers to make a cost management from the surety of manufacturing of the future products and to ensure the profitability of a new product in the moment when it is launched on the market. Calu, Dumitru, 2008, p.175).

Ceauşescu şi Văduva establish the six principles on which the concept of target costing is underlain, as it follows (Ceauşescu, Văduva, 2010, p. 63):

- The costs of future products are evaluated in the serial production subsequent to the incomes foretold by marketing;
- Necessary target costs, based on the complete costs formula are evaluated by cutting the desire profit margin out of the selling price and taking into account a share risk (cost component)
- Overall costs are determined by difference selling price – desired margin + risk share, is distributed on the different components of the products adequate to the function value towards the clients.
- The costs of product components serve the burden for the whole chain if creating the value, starting from research – development and continuing with supply, manufacturing and disposal.;
- By analyzing the difference from target costs and standards costs and by bank marking, the potential of optimizing is identified at the level of product's components.
- The chain of creating a value must ensure the selling conditions by a product's sales plan, by optimizing the materials and processing costs, as well as by analyzing the value for establishing the measures to be taken and applied in order to achieve the necessary objectives for each product.

In the specialty literature, Briciu and Căpușeanu identified the next general steps on which the Target Costing method is consisted (Briciu, Căpușeanu, 2011, pp. 53-54):

- **Establishing the target cost according to the market context and competitive environment.** The essence is consisted in the fact that the entities use Target Costing method for establishing their target costs on the market according to competitive conditions, and long term prices according to the objectives of entering the market.
- **Establishing the target profit margin.** Target profit margin results from the entity's long term financial and strategic objectives, as a result of the efforts made when planning a profit. General equation is as it follows:

$$\text{Target Price} - \text{Target Profit Margin} = \text{Target Cost (allocated)}$$

- **Determining the estimated cost and target cost.** In the case when the proposed product is in fact a modifies existent product, an entity already has the cost basis from which it can determine which could be the potential costs of the new product, if the specifications and manufacturing process of the new product are similar to the old one. Further, the costs of the new product or engineering costs (current costs, estimated) are determined using the product's specifications and the existent manufacturing processes. General equation is as it follows:

$$\text{Target Price} - \text{Target Profit Margin} = \text{Target Cost (current cost, estimated cost)}$$

- **Calculating the estimated cost of the products and estimated activities.** It is determined by summing the direct and indirect expenses allotted to the products.
- **Calculating target cost, the sum which the costs have to be reduced.** If following the determination of estimated cost this is higher than the target cost proposed by the entity, hid reduction is preceded by applying value engineering.

According to Ferreira and Machado (2015), after applying the principles and characteristics of target – cost, the entities may verify the benefits and advantages as they are described in theory. Based on many studies which certified the success of target cost, the following benefits have been reported (Ferreira, Machado, 2015, pp. 107-108):

- they guarantee the fact that on the market there will be launched only profitable products;
- reduces products' cost, but in the same time keeping their quality and functionality throughout their lifetime;
- reduces the time for developing the products;
- it favours a strategic planning of profit and of entity's cost management;
- increases the products' profitability;
- increases the entity's competition on the market;
- increases the customers' level of satisfaction;
- improves interaction among employees;
- enhances partnership with suppliers.

The main advantage of this management instrument is it's action environment namely, the team work, team which is consisted of design representative, process, sales, manufacturing, marketing engineers, a multifunctional process named "concurrent design." The entire team focuses on the same objective: obtaining a product with a certain functionality, quality and price meant for a certain market segment. (Albu, Albu, 2003, p. 247)

Another advantage of this method is the one that it is concentrates specifically on the client and on the market. The entity will not make the new product until it is sure that it will generate an adequate profit and the client will afford its acquisition. Target cost insists on strategic management of the costs' level, respecting the functionality of the products, which will surely determine obtaining cheaper and attractive products. Target cost creates a continuous pressure for eliminating useless costs. (Ofileanu, 2015, p. 96)

4. Study case concerning the usage of modern method of cost calculation Target Costing for launching on the market a new range of dairy products

An entity, having as object of activity the manufacturing of dairy products and cheeses, wants to launch on the market a new assortment of dairy products, respectively yoghurts with live lactic crops, recommended for settling the equilibrium of digestive system, presently being a great deal of

requirement on the market for these kinds of products.

The entity's experts have made an analysis for estimating the sales which will be realized during a five years period:

Table no. 1 Analysis of estimating the risks which are to be realized

Analysis results	1 st year	2 nd year	3 rd year	4 th year	5 th year	TOTAL
Released quantities	10.000	9.500	9.000	8.700	8.300	45.500
Selling price (lei)	160	140	120	110	100	
Fiscal value (lei)	1.600.000	1.330.000	1.080.000	957.000	830.000	5.797.000
Average selling price during the product's estimated lifetime: 127,41 lei/cont.						

Source: own creation.

- **Determining the average selling price during the product's lifetime.**

The entity's experts following the realized analyses have estimated getting a certain volume of selling for which they have established a correspondingly selling price which registers fluctuations during the product's lifetime.

- **Determining the average profit margin.**

The entity's experts establish a profit rate which is different for each year.

Table no. 2. Determining the average profit margin

Analysis results	1st year	2nd year	3rd year	4th year	5th year	TOTAL
Fiscal value (lei)	1.600.000	1.330.000	1.080.000	957.000	830.000	5.797.000
CA profit rate	17%	15%	13%	11%	9%	
Profit margin	272.000	199.500	140.400	105.270	74.700	791.870

Source: own creation.

$$\text{Average profit rate: } \frac{\text{Profit margin}}{\text{Fiscal value}} \times 100 = \frac{791.870}{5.797.000} = 13,66\%$$

Average profit margin: average selling price during the product's lifetime \times average profit rate

$$\text{Average profit margin} = 127,41 \times 13,66\% = 17,44 \text{ lei/cont.}$$

- **Target cost calculus**

$$\text{Target cost} = \text{target selling price} - \text{Target profit margin} = 127,41 - 17,44 = 109,97 \text{ lei/cont.}$$

- **Decomposing target cost into costs of components**

The necessary components of production process for obtaining a new yoghurt range are decomposed above:

Table no. 3 Decomposing target cost into costs of components

Components of production process	Share in product's cost	Target costs on components (lei)
Tanks for yoghurt's ripening process connected to a source of sterile air	15%	16,49
Tanks for storing the yoghurt which are to be packed, connected to a source of sterile air	17%	18,70
An installation of milk pasteurization for yoghurt	23%	25,29
Linear components of packing yoghurts:	45%	49,49
• machinery for transforming the cups from polypropylene foil	6%	6,60
• labeling system, module of product dosing	7%	7,70
• system of applying superior foil, system of cutting cups	6%	6,60
• ultra cleaning equipment for food safety	4%	4,40
• cardboard assembly machine	5%	5,50
• cardboard making machine	5%	5,50
• incorporated fruit mixer	4%	4,40
• automatic cleaning CIP system	3%	3,30

• command and control panel	3%	3,30
• safety gauntlet	2%	2,19
Total	100%	109,97

Source: own creation

- **Using an absorbent method of calculation for determining the actual cost of each component part of the production process**

Table no. 4 determining the actual cost of each component part of the manufacturing process

Components of production process	Actual cost	Target costs on components (lei)
Tanks for yoghurt's ripening process connected to a source of sterile air	21	16,49
Tanks for storing the yoghurt which are to be packed, connected to a source of sterile air	23,80	18,70
An installation of milk pasteurization for yoghurt	32,20	25,29
Linear components of packing yoghurts:	63	49,49
• machinery for transforming the cups from polypropylene foil	8,40	6,60
• labeling system, module of product dosing	9,80	7,70
• system of applying superior foil, system of cutting cups	8,40	6,60
• ultra cleaning equipment for food safety	5,60	4,40
• cardboard assembly machine	7,00	5,50
• cardboard making machine	7,00	5,50
• incorporated fruit mixer	5,60	4,40
• automatic cleaning CIP system	4,20	3,30
• command and control panel	4,20	3,30
• safety gauntlet.	2,80	2,19
Total	140	109,97

Source: own creation

- **Reducing the actual cost up to the level of target cost**

For diminishing the actual cost up to the level of target cost, the entity's experts have decided to acquire some components with a reduced purchased price, provided for modernizing the yoghurt assembly line, which enrich the technological process, but not to the same extent as in the case of the components initially foreseen for being acquired for modernizing the assembly line. So, the selling price would be reduced at 29 lei.

Table no. 5 Reducing the actual cost up to the level of target cost

Components of production process	Cost efectiv	Cost țintă pe componente (lei)
Tanks for yoghurt's ripening process connected to a source of sterile air	17,10	16,49
Tanks for storing the yoghurt which are to be packed, connected to a source of sterile air	19,38	18,70
An installation of milk pasteurization for yoghurt	26,22	25,29
Linear components of packing yoghurts:	51,30	49,49
• machinery for transforming the cups from polypropylene foil	6,84	6,60
• labeling system, module of product dosing	7,98	7,70
• system of applying superior foil, system of cutting cups	6,84	6,60
• ultra cleaning equipment for food safety	4,56	4,40
• cardboard assembly machine	5,70	5,50
• cardboard making machine	5,70	5,50

• incorporated fruit mixer	4,56	4,40
• automatic cleaning CIP system	3,42	3,30
• command and control panel	3,42	3,30
• safety gauntlet.	2,28	2,19
Total	114	109,97

Source: own creation

Following these adjustments, a target cost of 80,97 lei/cont ($109,97 - 29 = 80,97$) has resulted.

5. Conclusions

The continuous evolution of the market economy leads to the necessity of a permanent adaptation of the entities to the various requirements of the market. For ensuring the best decision making to the entities, these have to use the most efficient methods which offer the best results for all the participants to the economic activity.

Such results may be generated by applying Target Costing method, by establishing the target cost of the new product which is to be launched, at a level which offers the best quality – price report, but also the most advantageous production cost for the entity, but which is not to affect the quality of the new product.

The surest and the most efficient results are generated by Target Costing method in the case when it is used to envision the costs of a new product, which shows improvements or adaptations to the market requirements of an already existent product, because the production process is relatively alike, and therefore, the entity already has information about a part of the new product's production costs.

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