

# COST OPTIMIZATION AS MANAGERIAL STRATEGY IN THE CONTEXT OF INCREASING THE COMPLEXITY OF INTER-FUNCTIONAL DECISION-MAKING PROCESS

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***Abstract.** The cost, in its various forms, is an independent variable which exerts direct or indirect influence on a broad range of economic measures, as profit, price, demand, supply, etc. This is precisely the reason why cost behavior analysis represents a particularly important instrument, vital even in managerial decision-making in the area of planning and control.*

***Keywords:** Cost optimization, optimizing process, cost management, management accounting.*

## Introduction

Cost information is needed in elaborating decisions, when there is considered the determination of the breakeven, management performance assessment, budgets' developing and controlling, producing or buying a product etc. Due to the fact that the fixed or variable costs have relatively constant behavior, the mixed costs behavior analysis must be deepened. Using a series of mathematical methods (extreme points, the graphic method, the least squares method etc.) it is possible to determine the size of the fixed and variable costs where it is known only the mixed cost, information required to calculate the breakeven.

One of the most popular methods of analysis of cost-profit variation depending on the variation of the activity volume is the so-called analysis Cost-Volume-Profit (CPV method). Through this method can be determined the effects generated by changing the variable and fixed costs, the production volume or the price over profitability.

Construction of the model starts from a series of hypotheses concerning linear behavior of costs and revenue for a level of activity considered normal. It also takes into account the exclusion of other types of costs, except for the variable and fixed, changing the level of activity,

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considered being the sole costs influence factor, i.e. the possibility to capitalize the entity's entire production.

Contribution margin represents a specific notion of this method and is calculated as the difference between revenues and variable costs.

The formula for calculating the breakeven (that is, the level of sales where there is no profit, in other words profit = 0) is:

$$Q_{pr} = \frac{CF}{p - cv} = \frac{CF}{cm} \text{ (corresponding to breakeven expressed in number}$$

of products) or

$$pr = Q_{pr} \times p \text{ (corresponding to breakeven expressed in monetary units)}$$

where:

$CF$  = fixed costs;

$p$  = unit selling price;

$cv$  = variable costs per unit;

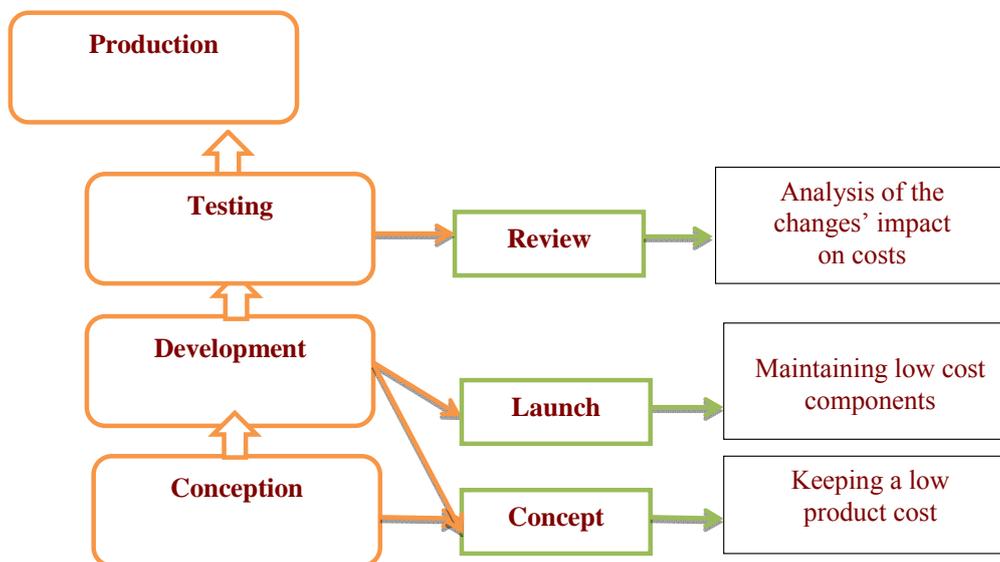
$cm$  = unitary contribution margin.

Due to the fact that the most of the costs come from the purchase of the raw materials and related production, the entities tend to orientate their analysis towards the post-product development stages, when they seek to identify the best ways to optimize costs. However, most often, this leads to a real inability to mitigate costs, because they are not flexible or are slightly flexible, depending on technical specifications and the established quality level. In this context, a cost-optimization strategy that proves its efficiency needs to be implemented at the beginning of the product's life cycle, respectively in the conception phase, and must take into account all the costs involved.

A simplified model of costs estimation and evaluation of their impact on the cost of the final product, in the earlier phases of actual production is shown in Figure 1.

In the optimizing process, a particularly important role has the product specifications' elaboration stage, when we can remove particular elements or components that are insignificant compared to the costs involved. This is also the time when we can identify cost-saving solutions with the raw materials that can reach the threshold of even 70% of the cost of the final product.

Another phase which we should pay attention to in the process of costs optimization is the production. At this point we have to identify concrete ways to improve the use of raw materials, to reduce the number of operations, to use appropriate machinery and equipment that may be involved in the production of range products, to grow the efficiency of the used equipment.



**Figure 1.** Costs' estimation of in phases prior to production.

Source: Shintre N. (2010), *Cost optimization across the product realization value chain*, White paper, September, [http://products.geometricglobal.com/WhitePapers/Cost\\_Optimization\\_Whitepaper.pdf](http://products.geometricglobal.com/WhitePapers/Cost_Optimization_Whitepaper.pdf)

There are two categories of factors<sup>1</sup> that influence the cost of running each activity within the value chain:

- structural-cost inductors (business scale, the experience curve, the intensity of technology);
- execution-cost inductors (continuous improvement, quality, length of a cycle, the use of production capacity, customer relations etc.);

Using analysis methodology of the value chain gives a series of benefits to the entities as regards assessment and improving the strategic position, as follows<sup>2</sup>:

- making available to entities of a general framework for the assessment of competitiveness relative to costs and improvement of strategic market position/share;
- qualitative growth through taking on clients' needs and requirements;

<sup>1</sup> Srikrishna S. (2009), *Cost optimization – a strategic initiative to beat slow down*, available at <http://www.businessgyan.com/node/5717>.

<sup>2</sup> Donelan J., Kaplan E. (1998), *Value Chain Analysis: A Strategic Approach to Cost Management*, *Journal of Cost Management*, March/April, Vol. **12**, No. **2**, pp. 7-15.

- costs diminish by focusing on areas that require their reduction and through the reshaping of value chain.

In the value chain analysis a series of steps must be taken with direct reference to the recognition of the activities that make it up and splitting the entity into distinct activities, fixing the level of relative importance of the various activities in the structure the products' total cost, estimating the costs of activities, cost inductors' recognition, the connections and interdependencies between value chain rings, as well as recognizing opportunities to reduce costs and to maximize value.

In the context of the differentiation of the elements that form the value chain it is necessary to approach all aspects that can compete at the success of the method, as follows: the activities with a significant percentage in the total cost, costs generating activities with different behavior or which bear of different cost inductors, activities that have a significant potential in creating differentiation, but also activities that are tackled by competition in different styles<sup>3</sup>.

Cost allocation on identified activities is another sensitive step of the method. According to specialized practice, it requires that the systems cost to be elaborated in such a way as to connect costs with activities that are of value and not according to the accounting typology of the costs. At the same time, distribution costs on specific activities to the value chain are cumbersome because the systems that exist at the present time do not provide information for the value chain analysis<sup>4</sup>. ABC method comes in support of this stage by analyzing costs and focusing them on cost centers or activities.

Identifying cost inductors, the next step, is not a difficult approach because it can be done with the support of the ABC method, a method that provides a systematic framework for doing so.

Special attention should be paid to the stage where the linkages and connections between the elements that make up the value chain are identified, because costs reductions in some activities will lead to a decrease in the real cost of the whole entity. Moreover, most of the times the costs associated with an activity are influenced by the way in which

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<sup>3</sup> Porter M. (1998), *Competitive Advantage: Creating and Sustaining Superior Performance: With a New Introduction*, The Free Press, New York.

<sup>4</sup> Kajüter P. (2002), *Proactive Cost Management in Supply Chains*, in: Seuring, S. and Goldbach, M. (eds.), *Cost Management in Supply Chains*, Physica Verlag, Heidelberg, pp. 31-51.

other activities are unfolding, and behavior of a specific area of activity of the entity may exercise influence over costs performance and other areas. As a result, the start of costs reducing activities or processes must not be focused independently on the rings of the value chain, but it takes an optimization of all activities found in inter-relationship.

From the perspective of cost optimization, value chain analysis method has the benefit of certain recognition of activities that could be outsourced. Managers should consider before adopting a decision whether a given activity can be done with optimal or lower costs by a third party, provided that such activity brings an asset or a gain in terms of costs, or if you take part in the differentiation of the products offered for sale, if there is a technological risk involved and its level, and whether outsourcing solution activity will generate an improvement of technological process in terms of reducing the total time, a greater flexibility or to smaller stocks<sup>5</sup>.

A number of opportunities to reduce costs may occur as a result of the value chain redefinition or reconfiguration, made possible through the implementation of new manufacturing processes, using new techniques and technologies, the use of new distribution channels, identification of new raw materials, the divergent approach to selling strategies or changing the destination of certain work zones, depending on the needs of the production process<sup>6</sup>.

Understanding the behavior that costs are taking in resource-consuming processes is another way to reduce costs, having increased efficiency as its foundation<sup>7</sup>. We can reach this by devising a general model of the processes performed by the entity and by investigating the activities of processes', accompanied by the recognition of value-adding activities. The most important steps that can be taken in order to optimize costs at the level of processes aims at adapting all processes within the entity and excluding those activities that are not generating value, changing processes and their suitability to the external environment, removal of administrative duties and bureaucracy, suppression of repetitive processes and

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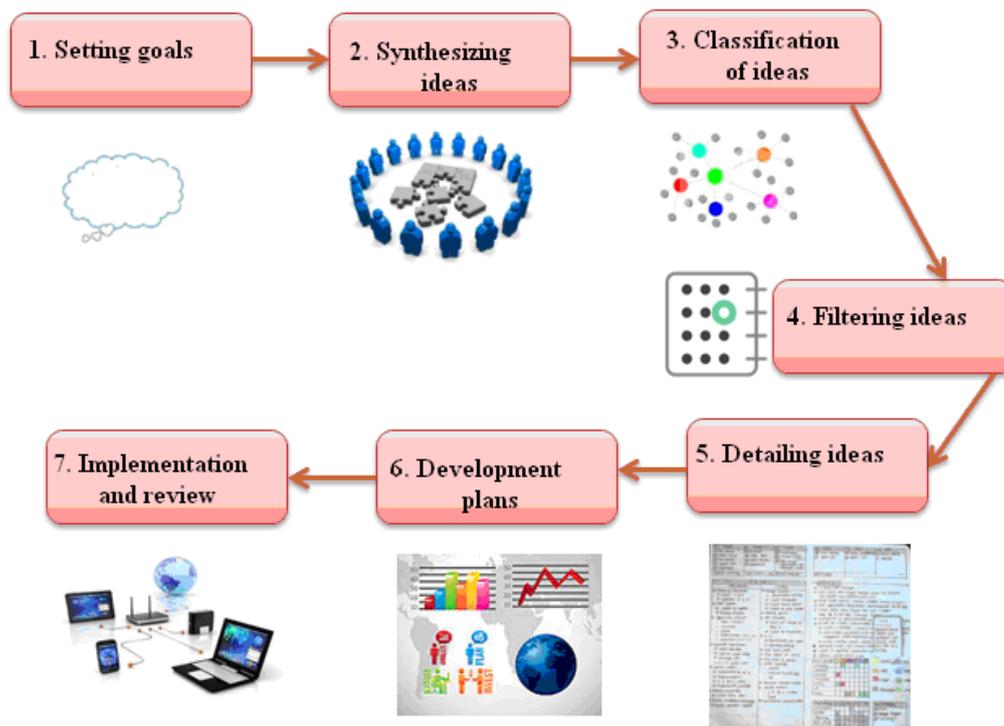
<sup>5</sup> Tayles M., Drury C. (2001), *Moving from Make/Buy to Strategic Sourcing: The Outsource Decision Process*, Long Range Planning, October, Vol. **34**, Issue 5, pp. 605-622.

<sup>6</sup> Porter M. (1998), *Competitive Strategy: Techniques for Analyzing Industries and Competitors: With a New Introduction*, The Free Press, New York.

<sup>7</sup> MacArthur J. (2000), *Activity-Based Costing and Activity-Based Management: An Introduction in: Brinker, B. (ed.): Guide to Cost Management*, John Wiley & Sons, Inc., New York, pp. 397-410.

standardize processes or decreasing processes execution times through automated or mechanical systems.

Any strategy with innovative cost optimization component should be define as the foundation of their objectives their information at the level of the entity, the use of mechanisms to collect innovative ideas from staff, establishing the typology of ideas and their filtering, detailing the feasible cost reduction paths, development of implementation plans for the cost reduction methods and their effective introduction, accompanied by monitoring and review. Stages of an innovative strategy for optimizing the costs are presented synoptically in Figure 2.



**Figure 2.** Stages of an innovative strategy to optimize costs.

Source: Khoury G.R. (2010), *Innovative Cost Optimization a creative approach to findings new cost optimization opportunities*, available at [http://gkstrategic.com/pdf\\_image/Innovative%20Cost%20Optimisation%20-%20Gerald%20Khoury15.pdf](http://gkstrategic.com/pdf_image/Innovative%20Cost%20Optimisation%20-%20Gerald%20Khoury15.pdf)

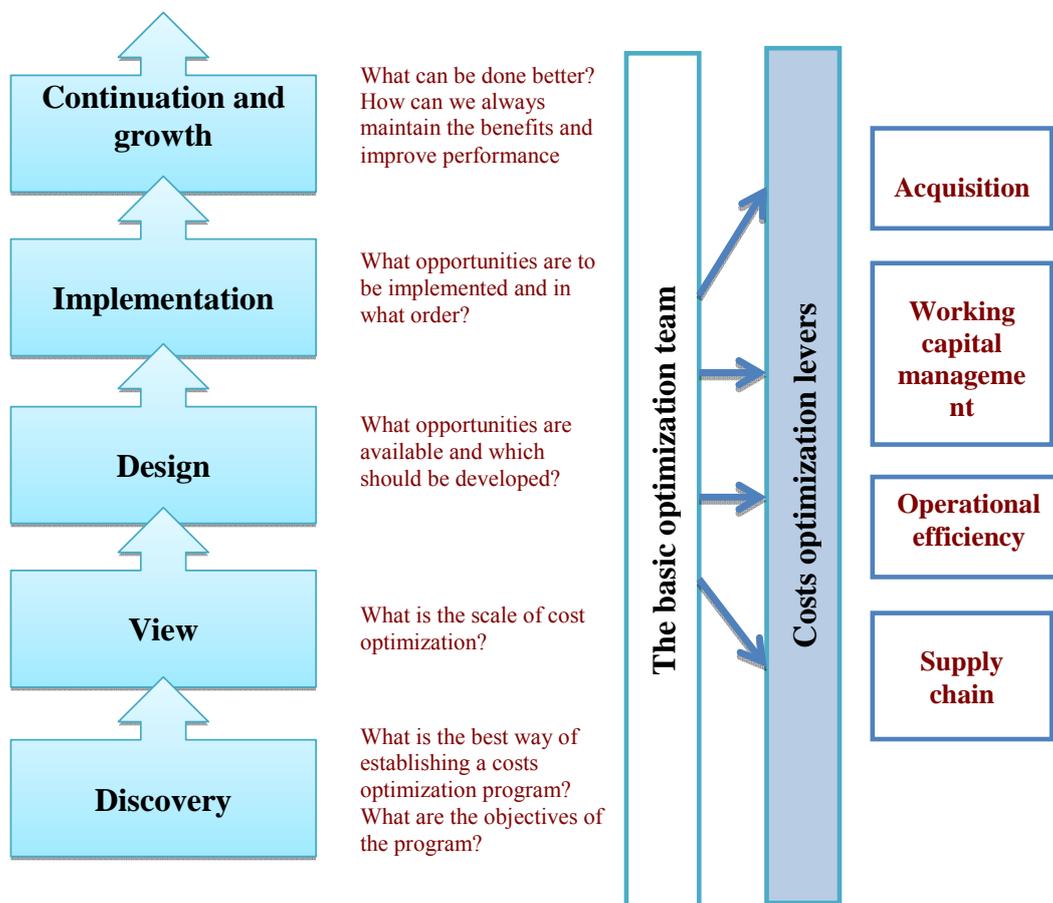
Potential benefits What is the size of the cash savings generated by the implementation of the actions?	LOW	MODERATE	HIGH
The impact on clients What is the type of impact of measures taken on the clients?	NEGATIVE	NONE	POSITIVE
The time it takes Can savings be harnessed in the tax year?	>18 MONTH	6-18 MONTH	<6 MONTH
Degree of organizational risk Is the organization able to adopt the changes? Will managers ensure that changes are implemented?	STAFF RESISTANCE TO CHANGE	MODERATE CHANGES IN THE ROLES, STRUCTURES AND PROCESSES	NO CHANGE
Degree of technical risk Is there a risk that the change of influence systems' capacity?	HIGH RISK	MODERATE RISK	LOW RISK
Investment resource requirements	HIGH	MODERATE	LOW

**Figure 3.** Prioritizing initiatives to optimize cost – general framework.

Source: Gartner RAS Core Research Note, Barbara Gomolski, John Kost, 13.05.2009, available at [http://eval.symantec.com/mktginfo/enterprise/other\\_resources/bgartner\\_decision\\_framework\\_for\\_prioritizing\\_cost\\_optimization\\_ideas.en-us.pdf](http://eval.symantec.com/mktginfo/enterprise/other_resources/bgartner_decision_framework_for_prioritizing_cost_optimization_ideas.en-us.pdf)

In Figure 3 is highlighted the general decision-making framework, with an emphasis on establishing a priority order of the application of cost optimization approaches that must be based on the analysis of a complex of elements, of which we list: the potential benefits that can be converted into monetary terms, the effects on consumers, the amount of time needed it takes to implement the changes, the level of risk generated by the changes which will be operated, and the volume of resources required to implement the optimization decisions. The pattern can be similar to a matrix and the optimization decisions will be taken only in the context that most answers are positioned in the last column or in the green zone.

KPMG consulting firm provides an economic model which aims at the optimization of costs. This model starts from the analysis of techniques for establishing cost inductors or from expenses investigation, providing meaningful information for the recognition, calculation and prioritization of possible savings opportunities (Figure 4).



**Figure 4.** Economic model of costs optimization.

Source: adaptation KPMG (2008), *Cost optimization, protecting our margins in a turbulent economic environment*, available at [http://www.kpmg.de/docs/112008\\_Cost\\_optimisation\\_China.pdf](http://www.kpmg.de/docs/112008_Cost_optimisation_China.pdf)

The issue of cost optimization can only address the managerial aspect, but allows the use of modeling tools related with mathematics.

The subject of optimization can be discussed from several points of view, using specific methods of algebra (linear or nonlinear optimization) or methods of mathematical analysis.

## Conclusions

In the current economic and social context we see a pretty strong trend of transformation of the demand in terms of quality and quantity. This is the direct effect of the existence of increasingly better informed clients, with formed tastes and/or in upward trend. The direct effect of this situation is felt by increasing the competitiveness on the goods and

services markets, but not only, if we also think about the unprecedented developments of production techniques and technologies, which are increasingly automated and innovative.

As a result, it is no wonder that such transformations have affected and management accounting. From the need to ensure the cost-quality balance, the entities have increasingly oriented towards specific management accounting methods and techniques that allow the calculation of cost of production, not according to its volume, but in close dependency on products differentiation and the allocation of indirect and fixed costs. Furthermore, the orientation of cost calculation is mainly towards processes or activities.

Returning to management accounting, its main activity remains the cost calculation and determining of the production cost, but with the support of an efficient information system, designed to provide the most relevant information for an efficient cost management.

The cost remains the key element of the entities' strategic management, whether they opt for strategies to increase the efficiency of the productive process, either for sale-marketing strategies on the goods and/or services market. The difference is given by the typology of management methods used for the strategies management. For example, the establishment of an action plan for a sales strategy will be based on information provided by the target cost method, while setting as its objective an increase in performance of manufacturing processes will be built on information provided by the ABC method.

The acute need for information on the external environment of the entity involves the integration of these new methods and strategies undertaken and aims at not only a specification or customization of the costs of offered products and/or services, but also costs charged by customers and suppliers.

Therefore, the core of the managerial decision-making process is provided by meaningful information and detailed by the information systems of the entity. In this context, the cost management should form an integral part of the strategic objectives of the entity and to address not only the costs, their nature and essence, but also the connections and interdependencies with other economic variables such as price, profit or income.

In the same registry, we have to mention that the option for a cost effective management needs to be founded on a number of specific methods used in embedded systems, because only in this way we will be able to provide more relevant information than if the methods were used independently.

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