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COST EVALUATION: STRUCTURING OF A MODEL

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ABSTRACT

This study´s purpose was to build a cost evaluation model with views to providing managers and decision makers with information to support the resolution process. From a strategic positioning standpoint, the pondering of variables involved in a cost system is key to corporate success. To this extent, overall consideration was given to contemporary cost approaches – the Theory of Constraints, Balanced Scorecard and Strategic Cost Management – and cost evaluation was analysed. It is understood that this is a relevant factor and that it ought to be taken into account when taking corporate decisions. Furthermore, considering that the MCDA methodology is recommended for the construction of cost evaluation models, some of it´s aspects were emphasised. Finally, the construction of the model itself complements this study. At this stage, cost variables for the three approaches were compiled. Thus, a repository of several variables was created and it´s use and combination is subject to the interests and needs of those responsible for it´s structuring within corporations. In so proceeding, the number of variables to ponder follows the complexity of the issue and of the required solution. Once meetings held with the study groups, the model was built, revised and reconstructed until consensus was reached. Thereafter, the conclusion was that a cost evaluation model, when built according to the characteristics and needs of each organization, might become the groundwork ensuring accounting becomes increasingly useful at companies.

Key-words: Cost evaluation. Cost measurement. Strategy.

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AVALIAÇÃO DE CUSTOS: ESTRUTURAÇÃO DE UM MODELO

RESUMO

Neste estudo, objetiva-se a construção de um modelo de avaliação dos custos, com a finalidade de prover aos gerentes e decisores informações para tomada de decisões. Na perspectiva de posicionamento estratégico, o julgamento das variáveis envolvidas num sistema de custos é fator expressivo para o sucesso empresarial. Neste sentido, fez-se uma tratativa de abordagens contemporâneas que envolvem custos – Teoria das Restrições, Balanced Scorecard e Gestão Estratégica de Custos – e discorreu-se sobre a avaliação dos custos. Entende-se que este é um fator relevante e que deve ser considerado para as decisões empresariais. Além disso, apontou-se alguns aspectos da Metodologia MCDA, recomendada à construção de um modelo de avaliação de custos e, por fim, construiu-se o modelo para complementar este estudo. Neste ponto, foram compiladas as variáveis de custos das três abordagens. Com isso, criou-se um repositório de diversas variáveis, cuja utilização e combinação dependem dos interesses e necessidades dos responsáveis por sua construção nas empresas. Assim, o número de variáveis a serem consideradas segue a complexidade do problema e da solução necessária. Por meio de encontros com o grupo de estudos, o modelo foi sendo construído, revisado e reconstruído até se chegar a um consenso. A partir disso, concluiu-se que um modelo de avaliação dos custos, quando construído de acordo com as características e necessidades de cada organização, pode ser a base para tornar a contabilidade mais útil para as empresas.

Palavras-chave: Avaliação dos custos. Mensuração dos custos. Estratégia.

1 INTRODUCTION

Increased competition between companies has picked up during the last years and triggered the need for modernization in corporate management. Thus, during the last decades, debates concerning new and modern corporate cost control and management techniques have likewise increased. To this effect, management approaches and systems were developed to support managers in the task of maintaining corporate profits at desired levels in addition to facing competition. It is our understanding that cost evaluation implies in a process that involves multiple cost factors which drive managers towards taking different strategic decisions. Accounting thus might contribute with the identification of new criteria and dimensions, that ought to be considered to evaluate costs at companies, so as to surpass regular measuring domains.

In many circumstances, cost reports don´t supply managers with enough sound information given that decisions override the scope of monetary values, especially when long term issues are at stake, in as much as corporate survival is concerned.

Considering the limitations of these traditional cost analysis models, this study deals with the most important aspects relative to the structuring of cost evaluation models with views to increasing it´s relevance within the decision making process. In this connection, some approaches are discussed which might contribute with seeing to the imperfections of traditional models. Thus, the following themes are herein debated : Theory of Constraints (TOC), Balanced Scorecard (BSC) and the formation of a Strategic Cost Management model, known as GEC.

The monetary value of a product or service measured by existing cost allocation methods provides limited grounding for managerial analysis and neglects the more ample evaluation aspect in an attempt to level with corporate strategies. Therefore, this study is justified by the inaccuracy of current cost measuring and analysis models, in as much as the variable cost evaluation is concerned. From a strategic positioning perspective (Porter, 1989), the judgement of variables involved in a cost system may be a factor of relevance to business success. Consequently, this study proposes to structure a cost evaluation model based on contemporary approaches.

2 BIBLIOGRAPHICAL REVISION

2.1 COST MEASUREMENT AND EVALUATION

Cost evaluation must be linked to a company´s strategy. It implies in understanding the consequences of changes in costs in terms of the organization´s future, it´s long term targets and objectives. Thus, it is understood that cost evaluation comprises factors such as:

- ✓ the understanding of cost origins, consequences and reasons for variations, for the company as a whole;
- ✓ the measuring of costs, given one ought to know beforehand, which are the implications for corporate success that arise from their increase or reduction;
- ✓ the complexity and subjectivity, once value judgements of people involved in the decision making process are at stake. When evaluating something, one resorts to relativity and thus the evaluation depends on the judgement of the decision maker and his values in relation to the issue at hand.

Evaluating is a complex task given that results are usually subjective and depend on the personal values of the individual that evaluates. It is thus understood that cost evaluation consists in the judgement or relativisation of measured cost variables with views to defining specific targets and strategies for the organization.

To evaluate costs, companies need to know the business they are engaged in and how important measured costs are to the pursuing of the corporate strategy on a long term basis. According to Hamel and Prahalad (1995), the company must know where it´s going. To this effect, authors emphasise that managers must be able to clearly define which are a company´s strong points and in what it is better than others.

Even if traditional measuring systems were improved, they still wouldn´t offer companies an assessment concerning the level of importance of costs from a strategic standpoint. Cost systems (based on methods such as RKW, variable costing, activity based costing, etc.) help solving the cost measurement issue.

However, there are setbacks in terms of supplying information of strategic nature. According to Johnson (1994), traditional accounting cost methodologies failed to examine processes, those engaged in their deployment and hence customers served as a result of execution.

In as much as cost precision is concerned and considering measurement, Leone and Leone (2002) point out that the quest for precise costs at companies is no more than utopia. According to the authors, cost accounting increasingly attempts to reduce the amplitude of mistakes in cost calculations. However, many are the reasons - sharing, the question of skill and opportunity, losses, wastes, disposals, inflations, estimates and provisions, imputed costs and those of opportunity, costs with research and development, costs of non-utilised capacities – which ensure differences in costs persist. Thus, costs of products and services are not calculated with precision.

To this effect, it is our understanding that knowing the precise cost doesn´t make the decision process any easier in strategic terms. On the other hand, the qualitative evaluation of the monetary value might offer a direction. Thus, to speak in terms of cost evaluation is an attempt to find a way of affirming if this or that cost is good or bad for the adopted strategy. In so proceeding, once evaluating business costs, managers do not come to an exact number or figure but to a judgement that makes sense to the organization. Furthermore, it is understood that the result of cost evaluations at a given company does not repeat itself, necessarily, at another or at companies within the same segment or between companies that adopt the same strategic posture.

Therefore, the point subject to light in this study is not limited to the manner indirect or indirect production costs are treated, nor which costing method the company utilises to distribute these throughout products neither is it about correlation coefficients between costs and their causative variables. These are issues that are within the concept of measuring and are thus understood as being under control. Even if the existing problems of different cost measuring models were to be solved, that is, even if one were to figure out how to precisely measure costs, the evaluation issue is not solved. Measured costs versus the chosen strategy in view of these costs still persist. One must find a way of evaluating costs measured by accountants in such a manner that, given such figures, the implications in terms of customer satisfaction, in corporate global

results and product quality, for instance, become apparent. Furthermore, this is not a subject matter for cost drivers given that there are no criteria and/or strategic cost drivers. What do however effectively exist are strategies that were adopted as of the knowledge of costs, such as management results. Therefore, discussions concerning which is the best measuring system, its imperfections and advantages are not covered by this study.

2.2 THEORY OF CONSTRAINTS

According to Corbett Neto (1997), the Theory of Constraints (TOC) started in the 70´s – more precisely in 1978 – with the Israeli physician Eliyahu Goldratt. Per this theory, one must recognize the existence of restrictions that impair the expansion of a system as the single most decisive way of ensuring it´s sound performance. In this connection, Noreen, Debra and Mackey (1996) affirm that any true system must present at least one restriction, and every profit driven organization should have at least one restriction to curb profit increases. Should there be none, production and profit would be limitless.

However, there might be more than one restriction at the same time and at different moments, something that often occurs at most companies. On the other hand, restrictions might be both internal (a broken machine, sick workers, strikes) and external (arising from factors that go beyond the company´s reach, such as: reaction to clients in relation to the company´s products, the approval of rigid governmental norms, the influence of non-governmental organizations, the climate, amongst others). Thus, as the number of restrictions increases, the greater are production limitations and the smaller corporate profits.

According to Goldratt (1991), a restriction – also known as a bottleneck – represents the weakest link of a chain. It is this link that determines the resistance of the chain as a whole. But how can one know how many restrictions there are in the system? As far as the author is concerned, this depends on the existing quantity of independent chains in the system but there aren´t many within a given organization. They must, however, be identified as soon as they appear so as to avoid losses in the system, given that one hour lost at a bottleneck means one hour lost to the system as a whole.

So the system might function adequately, few restrictions are required. A system might become unfeasible should there be a large number of restrictions. Thus, one must maintain control and management over these so that they might be located and solved. The success of a company depends on how bottlenecks are managed. Poor management of system restrictions generates unnecessary inventories and increases the costs of a company.

The Theory of Constraints is composed of three measures that, according to Goldratt (1991), respond for the reaching of a company´s target, that is, profit, namely: revenue, inventory and operational expenses.

Per Goldratt´s (1991) Theory of Constraints, these three measures jointly, are capable of demonstrating the evolution of the company´s performance.

The core concept that drives revenues – the first measure defined by Goldratt (1991) – is the indicator that drives the system to generate money by means of sales. This implies that it is limitless, unlike operational expenses and inventories which ought to be reduced as close to zero as possible. The desired outcome is increased profit and thus, furthering revenue is the best way to promote increments given the fact that it is limitless. On the other hand, the smaller the investment in inventory and in operational expenses become, the greater is the profit experienced by the company.

Goldratt and Cox (1993) emphasize how revenue is always defined by the word money. Thus "revenue is the money that inflows. Inventory is the money currently within the system. Operational expenses are sums of money one must spend so that revenues might occur" (Goldratt & Cox, 1993, p. 84). The authors claim that consequently there is a measure for each of these definitions, that is, one for inflowing incomes, one for money that is retained or in circulation within the production unit and one for out flowing amounts.

The money that flows into the company is the most important factor that ultimately defines the company´s results. According to Goldratt (1991, p. 9):

> The first thing that must be clearly defined is the organization´s global purpose, that is, the target. The second are the metrics – revenue, inventory and operational expense. Not only any measure but those that allow us to judge the impact of a local decision before the global decision.

The author recommends that one must not measure merely to measure but to assess the impact of a given metric on the company´s results. There are numerous key indicators within corporations however and their importance and utility in as much as the decision process is concerned is questionable. Managers and directors are usually surrounded by numbers, reports and indexes. Notwithstanding the volume of data at hand, information is scarce when it comes to making sound strategic choices. Therefore this is one of the major corporate issues.

Considering that the company´s purpose is to earn money, to address the target one needs to know which pathways must be followed. Goldratt and Cox (1993) affirm that target metrics at managerial levels are: net profit, return on investments and cash flow. However, at manufacturing levels metrics such as these are meaningless. For day to day operations of the production organization, the previously mentioned metrics are the ones that best express targets: revenue, inventory and operational expenses which, according to the Theory of Constraints, account for the end result. Thus, a couple of considerations are in place in as much as these variables are concerned:

REVENUE: For Goldratt and Cox (1993), this measure must always increase to improve profits. Such an increase is obtained through three variables, namely:

- ✓ Market Increment: with larger sales the possibility of incurring in profits increases. For Noreen et al. (1996), this is obtained via diversification, sales volumes, price flexibility and meeting of delivery deadlines.
- ✓ Net Increment: releasing resources so these might be invested in more profitable activities;
- ✓ Restriction management: a continuous improvement process.

INVENTORY: This metric should always decrease so that profits might increase. Goldratt and Cox (1993) argue that a company doesn´t profit merely because it produced something. For this to happen, one must transform this product into sales. Thus, inventories must be maintained at the lowest possible level required so as not to lead to a paralysation of activities at the bottleneck as a result of it´s absence, nor cause losses in view of excess.

OPERATIONAL EXPENSE: Operational expenses is the third key indicator of the Theory of Constraints and much like inventory, it must always reduce to increase the company´s profit. Goldratt (1991) reminds us that it ought to be reduced as often as possible, that is, every time reduction does not negatively impact profits. Thus, one should not reduce operational expenses when this reduction impacts full productivity at the strangling point.

However, Goldratt (1991) emphasises that one should consider the impact of the simultaneous relation of the three metrics (revenue, inventory and operational expense), and each one in particular. This seems to be logical if one perceives the company as an interconnected system and that each action impacts the entire organization.

2.3 BALANCED SCORECARD

During the last years, management systems and approaches were developed to support managers in the task of maintaining corporate profitability at desired levels, in addition to facing competition. Furthermore, methodologies were prepared for specific and directed purposes, as, for instance, the Balanced Scorecard (BSC) which focuses on performance measurement and management. Within this context, traditional cost systems face the challenge of identifying new factors and criteria as well as new dimensions that require pondering to evaluate costs at corporations.

Kaplan and Norton (1997) therefore seek alternatives through the BSC. This method is essentially the determining or preparation of financial and non financial measures associated with a company´s critical success factors.

This perspective´s innovation rests on the fact that BSC´s components are projected in such a manner that one strengthens the other indicating the path for the company´s future. According to the authors, a well projected balanced scorecard must combine past performance indicators and future performance drivers.

Kaplan and Norton (1997) suggest the division of the company into four different perspectives: financial, clients, internal processes and learning and growth. As of these standpoints, managers seek to measure the relevance,

evolution and contribution of each individual area of the organization in defining strategies to meet the company´s target. Given that the traditional managerial information systems no longer addressed demands in terms of performance measures within the new industrial environment, this focus was deemed appropriate.

Past accounting results are not efficient when it comes to helping managers take strategic decisions concerning the company´s future. In addition to financial reports, additional information is required to define the forthcoming success of the organization. Thus, items such as training, internal system innovation and that of services which add value to customers, the quality of sales and post-sales services in addition to the benefits that arise from technological advances in research and development are all corporate competitive differentiators.

For Johnson and Kaplan (1993), companies need systems capable of motivating and evaluating the performance of managers and employees at all fronts. Thus, systems should be able to supply adequate signs – according to the functions and responsibilities of each employee – reveal critical system points and enable the distribution of incentives to whoever deserves these.

The BSC attempts to integrate financial perspectives with those of the client, of internal processes and of learning and growth, providing managers and administrators with useful information based on the standpoint of a vision focused on long term corporate benefits.

The balanced scorecard seeks to translate the corporate vision and strategy within a coherent set of performance metrics. It is basically made up of a mechanism for the implementation of the strategy and not for it´s formulation. Whatever the approach utilised by corporate executives to formulate strategy, the balanced scorecard offers a mechanism to translate this strategy into objetives, targets and specific measures so that one may then monitor the implementation of the strategy as of this new vision (Kaplan & Norton, 1997).

Some authors reveal new uses for the BSC. Borgert (1999) suggests that by incorporating concepts from various fields of knowledge, one might verify advances attained and targets to be met by the organization in a more ample sense and thus define future strategies for the company. In this connection, the

MCDA methodology might be an interesting pathway. According to the author, the Multi Criteria Decision support Approaches (MCDA) prove to be interesting particularly before complex problem decisions, that is, which involve several variables and multiple decision maker interests.

2.4 STRATEGIC COST MANAGEMENT

Management accounting for many years has been a useful corporate system to support the decision making process. Currently, however, some specialists in the field have pinpointed the limitations of management accounting in this field.

One of the main issues relates to the strategic and long term decisions of the company. Shank and Govindarajan (1997) emphasise that managers must pay special attention to cost systems at any company to ensure they take into consideration the strategic plans and concerns of the organization. For the authors, management accounting systems are an important and required component in defining strategies so as to reach competitive success.

The added value perspective concerning management accounting is no longer enough for one to take sound decisions (Shank & Govindarajan, 1997). According to the authors, the cost analysis begins with the amount paid to suppliers, that is, during purchases and ends at the end consumer – at sales. The authors note that this concept poses two major problems: it starts too late (at purchases) and ends too early (at sales). Thus, its prime focus is to maximize added value, that is, increase the difference of the value between purchases and sales. That is how strategic cost management arises to complement gaps left behind by management accounting.

According to Johnson and Kaplan (1993, p. 1), information supplied by management accounting are "too late, too bundled and far too distorted to be relevant for management planning and control" . They argue that despite efforts and resources spent on the production of reports and statements of all types, management accounting presents difficulties when it comes to measuring in an efficient manner, the increase or reduction of the company´s economic value. This is one of the reasons for the emerging of Strategic Cost Management (GEC).

Here, cost management requires companies to focus in a broader and more external manner. It thus comprises the complete product value chain, which includes not only direct suppliers but also those that are behind them in the productive chain and also the direct clients and even the end consumers.

According to Shank and Govindarajan (1997), the essence of management accounting is the maintaining of results, the solution of problems and the directing of attention. Most of the issues involving management accounting focus on what to do. However, in strategic cost management the most relevant point of consideration is why one should so proceed.

Shank and Govindarajan (1997) state that GEC emerged from the combination of three themes, related to corporate strategic management: value chain analysis, strategic positioning analysis and cost driver analysis.

From these lines of thought perspectives, cost information has another purpose other than that established by traditional management accounting. Each theme represents a different field of research and thus they call for individual assessment.

2.4.1 Value Chain Analysis

According to Shank and Govindarajan (1997), the analysis of the chain value is the first key for efficient cost management. A company´s value chain, as far as Porter (1986) is concerned, is the set of value creating activities that starts with the most basic sources, at raw material level and flows through incoming material suppliers right till delivery of the final product to the consumer. Supporting activities, so that the process occurs in the best possible manner, are also part of the above mentioned set.

Connections with clients and suppliers are determining factors for the selection of corporate market strategies. Some issues involving cost management might arise given the lack of comprehension of it´s impact on the product´s global value chain. According to Shank and Govindarajan (1997, p. 66) "the value chain of a company fits into a larger system that includes the value chains of suppliers and of customers". Therefore, from a value chain perspective, the competitive advantage of a company resides in it´s ability to be faster than it´s competitors.

Eiler and Cucuzza (2003) affirm that management accounting, is primarily concerned with events within the company and not with the corporation´s economy, as a whole. These authors believe that one must also and in special look at the external aspects of the business, comprised of suppliers, third party service providers and any other activity or entity that its linked to the company. Factors such as these are important given that frailness in the financial health of an important supplier, for instance, might seriously compromise the above mentioned chain´s sequencing of products. For Drucker (2001), the management of the economic chain of costs will become a necessity to companies in the next few years. This change is due to the current environment whereby both competition and uncertainty are extreme.

2.4.2 Strategic Positioning Analysis

According to Shank and Govindarajan (1997), strategic positioning analysis is the second key to strategic cost management, defending the strategic positioning line of thought whose main voice is that of Porter´s (1986; 1989). Currently, corporate strategies is one of the themes that most concerns directors and managers. For over thirty years, consultants and entrepreneurs have debated over corporate strategies.

The concept of strategy was built and modified over the years in view of continuous changes in corporate environments. Shank and Govindarajan (1997, p.117) describe strategy as:

> the process through which managers, using a three to five year projection, evaluate external environment opportunities as well as capabilities and internal resources so as to take decisions concerning targets and the set of pertaining action plans.

Simply put, a company´s strategy depends on two inter-related aspects: a) it´s mission or targets; b) the manner or mode the company chooses to compete in it´s market segment to execute these targets, that is, the company´s competitive advantage (Shank & Govindarajan, 1997). In as much as the mission is concerned, the authors present three possibilities:

- ✓ Build – the strategic mission of building implies in a market target to increase. This is the typical case of companies with a small market

share but which are part of segments experiencing major growth. Usually these are companies which are going through the first operational stages.

- ✓ Maintain – companies with this mission are largely concerned with protecting their share of the market and the position they have conquered. This is the most common corporate strategy at companies that hold a large share of the market at rapidly growing segments.
- ✓ Harvest – implies in a target to maximize gains and short term cash flows even if this implies in losing a portion of the market. The mission of harvesting is usually adopted by companies with high market shares, but that devote themselves to segments that grow slowly.

Before the uncertainties of success concerning the launch of new products and creation of new markets, the building strategy must be carefully studied by decision makers. However, the adoption of a given mission or another, places demands on the company for different control management systems. However, the choice for a given strategy rarely is unique. Most often they come together and constitute a continuous process, with building on one extreme and harvesting on the other (Shank & Govindarajan, 1997).

As far as the manner the company chooses to compete on the market is concerned, that is, it´s competitive advantage, Porter (1986) notes that a company usually has two paths to follow and define its strategy. Either it chooses to compete for lowest cost (cost leadership) or it competes to produce differentiated results (product differentiation).

2.4.3 Cost Drivers

Cost drivers represent the third and last key to strategic cost management. According to Shank and Govindarajan (1997), strategic cost differs significantly from those of traditional accounting given the latter consider that the volume of production is basically the single reason for cost deviations at the factory. Within the GEC theory however, cost is due to numerous factors that are inter-related in a complex manner. Thus, to understand cost behaviour one must understand the complex interaction of the set of cost drivers at sake at a given moment.

The core idea that sustains volume as the sole cost driver, is based on a simple variable, that is, it supposes that the average production cost declines in the short term as volume increases, whilst other variables remain constant (Shank & Govindarajan, 1997). This doctrine is further supported by fixed *versus* variable cost analysis, by the analysis of the point of equilibrium, marginal cost and the analysis of cost-volume-profit. However, as the authors point out, hardly ever do other variables maintain themselves constant for a long period of time. There are examples whereby the average cost rises instead of declining when the volume of production increases. Further, there are cases of companies where the distinction between fixed and variable costs is not representative. Thus it is more useful in strategic terms to consider all costs (fixed and variable) as variable, as proposed by Goldratt in the Theory of Constraints.

Within the GEC theory, cost driver composition is not the same for all companies. According to Porter (1989), cost behaviour does not exclusively depend on one or two variables because it is a consequence of a series of structural factors that impact corporate costs. For Porter (1989, p. 62), major cost conductors are: "scale economies, learning, capacity standard use, links, inter-relationships, integration, right timing, discretionary policies, location and institutional factors". None of these is capable of determining in an isolated manner a company´s cost position. Most often they interact in a dynamic manner depending on the kind of company, sector it addresses and other peculiarities, significantly influencing the company´s overall activities.

Thus, executives must be aware of the limitations imposed by a single cost driver. Shank and Govindarajan (1997) emphasize that other factors (other than volume) interfere in corporate production cost drivers. Amongst the most widely acknowledged, there is the experience curve, quality, the scale and the complexity of product lines.

According to Riley (mentioned by Shank and Govindarajan, 1997), there are two categories of cost drivers: the first is composed of structural costs and the second comprises execution drivers.

Shank and Govindarajan (1997, p. 23) state that in the first, the company has five different strategic choices to drive its cost position. According to the authors, in this group, more does not always mean better, namely:

- ✓ Scale: The size of an investment to be made in production, research and development and in marketing resources;
- ✓ Scope: Level of vertical integration. Horizontal integration related mostly to scale;
- ✓ Experience: How often in the past the company has done what it is doing now;
- ✓ Technology: Which process technologies are employed at each stage of the company´s value chain;
- ✓ Complexity: The amplitude of the line of products or of services to be offered to clients.

The second category of cost drivers, that is, those related to execution or deployment, is more directly linked to the company´s performance. In this group, more means better. Shank and Govindarajan (1997) present the following list of implementation drivers:

- ✓ Collaborative management;
- ✓ Total quality management;
- ✓ Capacity utilization;
- ✓ Installation layout efficiency;
- ✓ Product configuration;
- ✓ Exploration of connections with suppliers and customers.

In strategic cost management, cost analysis based on structural drivers is increasingly less valued and specialists consider themselves overcome. Thus, there is a trend to appreciate implementation drivers. Consequently, execution skills are those that account for success within organizations. They demonstrate the company´s ability to deploy structural drivers.

Traditional managerial accounting over the last decades promoted expressive progress to companies. However, the current environment calls for adjustment to other necessities. That is why acknowledging diverse factors as being cost motivators is a coherent step and one which might bring benefits not only for a business unit but to the product´s global value chain.

In addition to the mentioned drivers, others might become apparent depending on the type of the organization or segment it addresses. However, Shank and Govindarajan (1997, p. 193) present key ideas notwithstanding the type of cost driver:

> As to strategic analysis, volume is not the most useful manner to explain cost behaviour; it is of greater use in strategic terms, to explain cost positions in terms of structural choices and implementation skills which effectively shape a company´s competitive position; Not all strategic drivers are equally important on a fulltime basis but some (more than one) are probably very important in all cases; For each cost driver there is a specific cost analysis structure that is fundamental to the understanding of a company´s position. To be a well trained cost analyst one must be knowledgeable in several structures. Current efficient management demands information concerning these subjects.

Understanding the implications of costs at the factory is a managerial need and strategic cost management considers these fundamental. Questions such as the impact of production in scale, total quality costs or the effects of technology and innovation in corporate costs are only but a few of the points that must be analysed.

3 METHODOLOGY

In alignment with the approach chosen to address the matter of research, this study is characterized as being of descriptive and exploratory nature. The strong points of the surveyed approaches was extracted according their applicability in terms of contributing with the decision making process so that a cost evaluation model might then be built. Thus, the constructed model is composed exclusively of cost variables described by the authors of these approaches. Via meetings held with study groups, the model was gradually built, revised and reconstructed until a consensus was reached.

Objective measures with subjective variables were placed together so as to construct a model that covers some of the major current cost variables. However, for each decision maker or group of decision makers, there might be a specific model, that is, each one may build their own model with the variables they deem relevant. Given that every person judges phenomena according to their own values, the model built herein is subject to the perception of the authors of this study, based on the concepts of the authors of the researched cost approaches.

Data analysis was undertaken as of information extracted from the mentioned approaches so as to verify how each one might best contribute with criteria for the construction of a cost evaluation model for companies. Thus, the technique utilised in this study is document analysis.

4 THE CONSTRUCTION OF THE MODEL

To build a cost evaluation model that covers the core notions of the three joint approaches of the model depicted in Figure 1, on an experimental basis, three large groups and respective subgroups were constructed into a first version of the cost evaluation model. The MCDA (Multi Criteria Decision Analysis) method was employed to structure the model and there was a decision maker, a group of intervening elements and a facilitator. Based on the constructivist method, this group consolidated this study´s implementation.

It´s worth noting that the group representing the market is pictured at the same level where differentiation and lowest cost are portrayed. At first, the understanding was such that belief centred on the possibility that the corporate market share impacts cost evaluations. Thus, issues related to clients, that is, the capturing, satisfaction and profitability, impact corporate costs. In the proposed model, one further supposes that the mix of products and services reflects on various aspects within companies, inclusively costs.

One might observe that at first the proposed model was made up of three large groups: market, lowest cost and differentiation. These groups in turn were composed of thirteen criteria. That´s how client participation and mix come together to form the market group. The simplification of processes, scale, scope, inventory and experience formed the lowest cost group. Finally, technologies, product image, quality, exclusivity and post-sales services constituted the differentiation group.

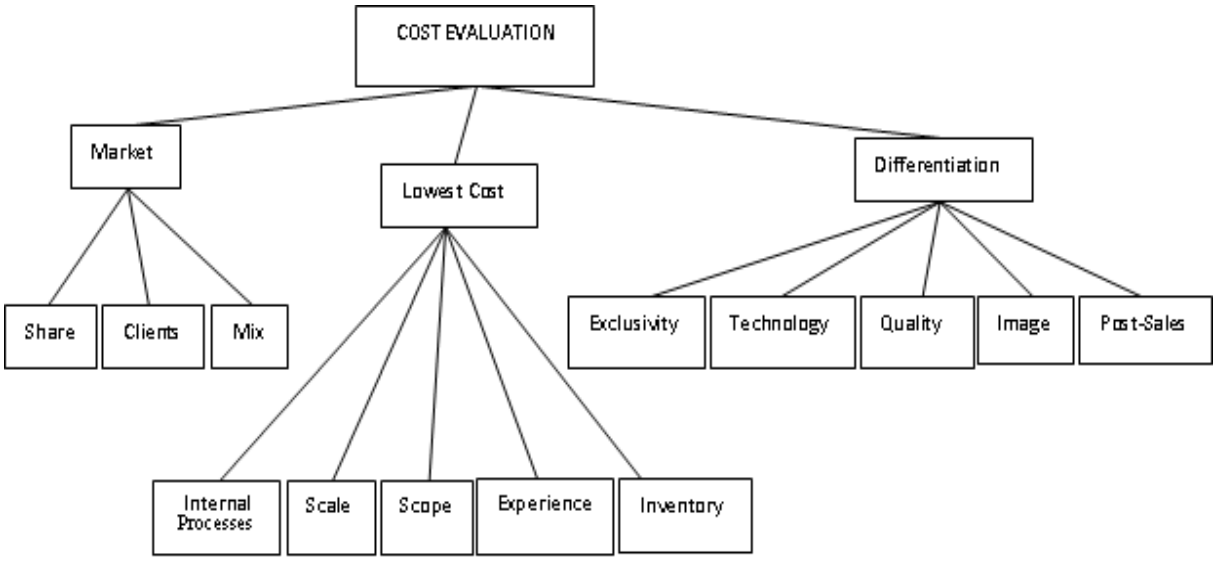

Figure 1: First version of the cost evaluation model

Source: prepared by the authors

The selection of these fundamental viewpoints (PVF´s) occurred in function of the group of people involved, whose understanding was that these best represent cost evaluation within a company.

However, according to Ensslin, Montibeller and Noronha (2001), a family of PVFs must be concise, that is, should only contain that which is required for a given decision making context. In this connection and given the fact that it is psychologically tough to work with a model that presents such a significant number of points of view, one must reduce quantity by bringing together two or more perspectives that depict similar notions under a single perspective that is fundamental to the model.

At this stage, the study utilised a technique that is known as *brainstorming* (whereby ideas are stormed or allowed to flow freely much like rain) which was duly applied to group components. Thus, to produce a model that would be acceptable to the group, several meetings were held so as to come to a consensus.

Once in-depth discussions concerning the model took place, it was concluded that some criteria were similar or were repeated and therefore could be grouped under one single concept. Consequently, the model presented in Figure 1 was altered in the following manner:

1) Market share : this was excluded from the model because it was taken as being a consequence of managing the company as a whole. Thus, market share depends on the model´s remaining criteria;
2) Clients: it was understood that this criteria is contemplated by that which deals with relationship and therefore does not remain in the model in an isolated manner;
3) Mix: this was included in the productive capacity criteria given that it was concluded it influences corporate production capacity;
4) Scale and scope: much the same way as the previous item, scale and scope also impact production capacities and are thus therein contemplated;
5) Experience: in this case, it was understood that the management of bottlenecks or of restrictions represents a criteria and that the sound management of strangling points is a consequence of experience;

6) Exclusivity and post-sales: both are directly related to the client. Consequently both were brought together to form a new criteria named relationship.

After numerous debates and adjustments the group came to a new model for cost evaluation, as per Figure 2.

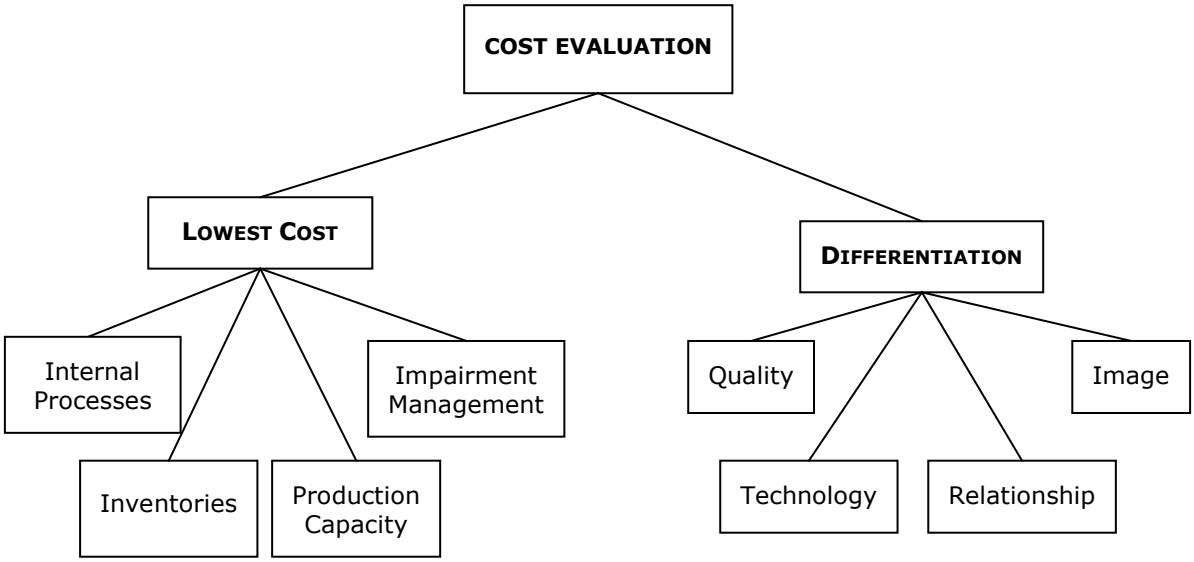

Figure 2: Second version of the cost evaluation model

Source: prepared by the authors

One can notice that after this stage of the process, the model which now comprises eight PVFs, consequently addresses Ensslin, Montibeller and Noronha´s (2001) recommendations.

5 THE COST EVALUATION MODEL

At each new group discussion, fresh ideas arose until such time as a consensus was reached. It was understood that cost evaluation at a given company depends, fundamentally on which competitive strategy is adopted by the company: competition by means of the lowest cost or competition by means of product differentiation. Thus the complete model – which contemplates this study´s three approaches (TOC, GEC and BSC) – was reconstructed according to the illustrations that follow. In Figure 3 special mention is made to cost evaluation based on the lowest cost strategy.

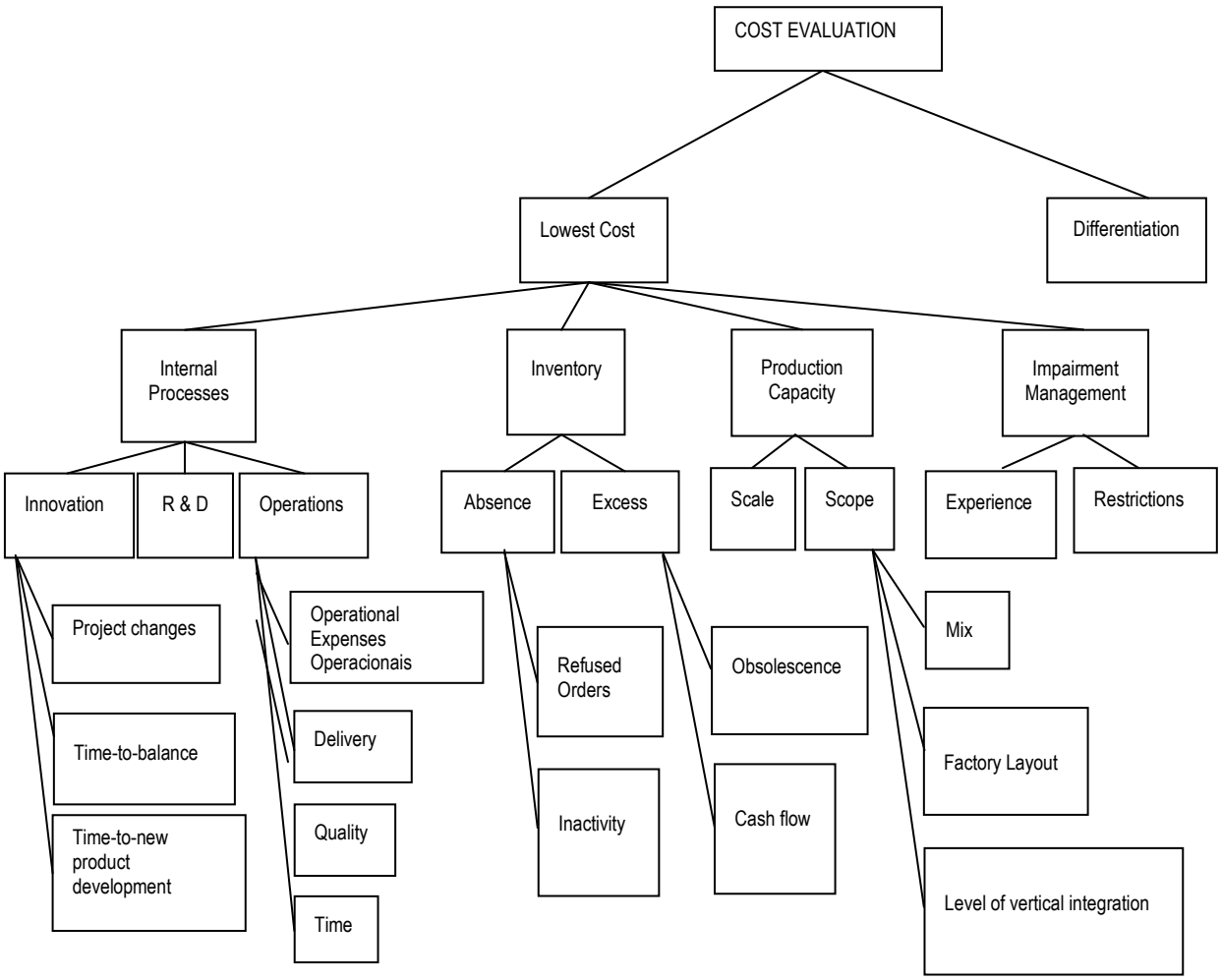

Figure 3: Lowest cost strategy based cost evaluation

Source: prepared by the authors

According to the cost evaluation model proposed in Figure 3, it becomes apparent that there are different cost interpretations according to the type of strategy chosen by the company. If the organization selects a strategy that differentiates it´s products, probably cost is a less important factor than if it decides to compete with a lower price strategy. In this case, the concern with costs draws greater attention from managers given that selling at a low price is key to corporate survival. This holds true should its customers be price sensitive and any change in terms of increase drives them into changing suppliers.

On the other hand, exclusive products and services with a high level of differentiation – brand and status, bundled with special services that include delivery and post-sale services – certainly attract customers which are less concerned with the price issue. These worries are tackled by the portion of the model pictured in Figure 4 – differentiation.

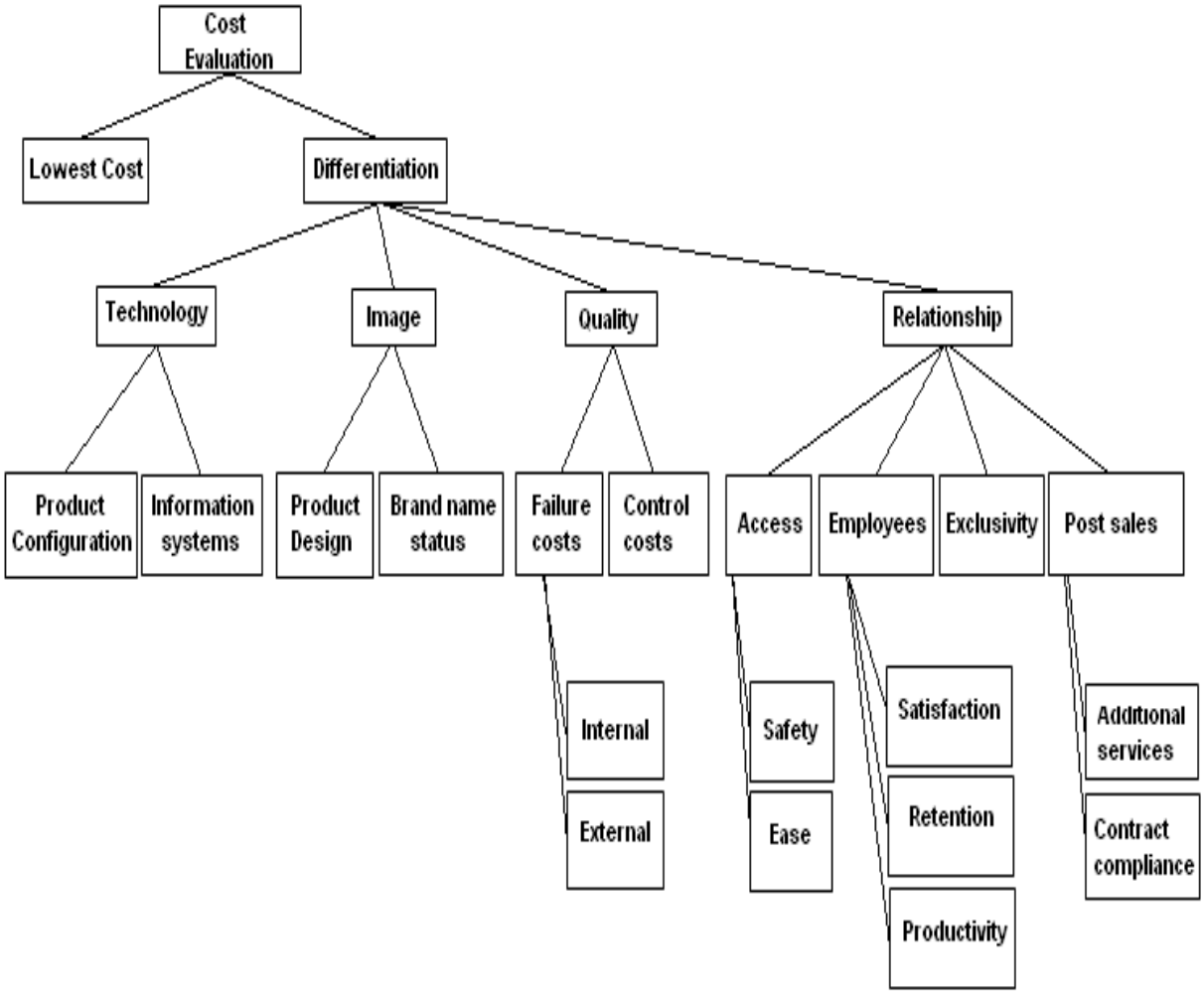

Figure 4: Product differentiation strategy based cost evaluation
Source: prepared by the authors

Thus the construction of the cost evaluation model poses to bring information concerning costs to support the taking of decisions that are of strategic nature. It was built to tool the company in verifying the effects of measured costs and consequently compete on the market.

Special mention is to be made to the fact that this is not a closed model, that is, each company ought to constructively build according to the criteria it deems convenient. Consequently one may include new criteria as well as exclude others that are of no interest to the model. Therefore descriptors are to be constructed taking into account each company´s reality. Preferably they ought to be prepared in conformity with the vision of the organization´s managers, a differentiating factor in itself.

5.1 DESCRIPTION OF A PART OF THE MODEL

If a company selects the lowest cost strategy, there are numerous readily avaliable alternatives that ensure greater corporate efficiency. Therefore to meet it´s objective, the performance measures, as recommended by the authors of the three approaches presented in this study, are pictured in Figure 3. An example of construction covering possible descriptors for one of the criteria mentioned in the evaluation model that represents the lowest cost strategy, shall be exposed hereunder.

- C1 – Internal processes: this criteria poses to verify the level of process complexity at the company. It originally comes from the Theory of Constraints and the BSC. Given its importance and scope, this criteria is operationalized via three subcriteria:
  - C1.1 – Innovation: to improve operationalization of this subcriteria, it was once further divided into three subcriteria:
    - C1.1.1 – Time to balance: proposes to measure the timeframe between the start of the product development project until such time the product is launched and begins to generate profits. This subcriteria arises mostly from the BSC and from TOC. To employ this criteria, a scale of percents is utilized to verify if projects are within the foreseen timeframe. The arrow on the side indicates the preferred direction in terms of the scale values utilised.

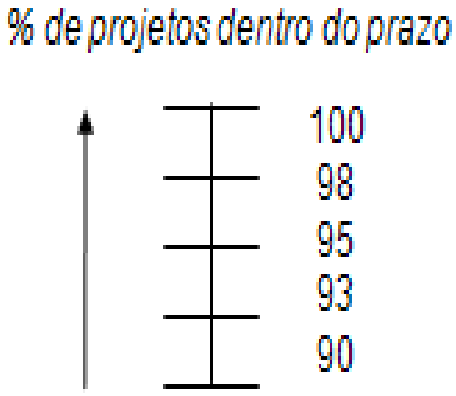

Figure 5: Status options for descriptor construction per subcriteria C1.1.1.

Source: prepared by the authors

- C1.1.2 – Time to new product development – the purpose of this criteria is to evaluate how long the company takes to develop new products. Consequently, for implementation purposes, a time scale descriptor expressed in months is utilized to picture decisor values in terms of time spent to develop new products.

Figure 6: Status options for Estados possíveis para a construção do descritor do C1.1.2.

Source: prepared by the authors

- C1.1.3 – Project change – The objective of this criteria is to evaluate the efficiency of the company´s new projects. In this connection, the intent is to identify the impact of whatever modifications are required from the moment they arise to final implementation. This criteria is implemented when a percentual scale is employed to illustrate current expense variations in relation to forecasts.

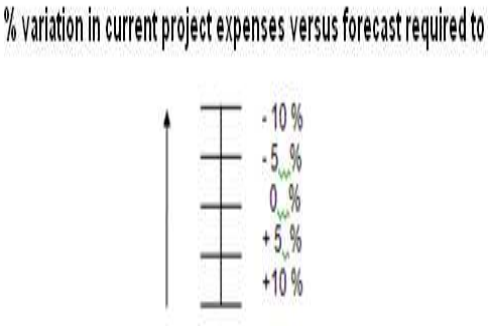

Figure 7: Status options for descriptor construction per C1.1.3.

Source: prepared by the authors

Therefore, each organization ought to figure out which are their own major descriptors and thereafter discuss most appropriate strategies.

6 FINAL CONSIDERATIONS

The current study´s purpose was to build a cost evaluation model for companies so as to improve the information offered by accounting and thus facilitate the taking of decisions at organizations. To construct the model, three different approaches were considered: the Theory of Constraints, Strategic Cost Management and the Balanced Scorecard.

By identifying the strong points of these three approaches, a cost evaluation model was prepared utilizing multiple variables whose level of importance depends on the competitive strategy adopted by the organization. However, at first, all criteria presented seem to be equally relevant for the structuring of corporate costs, irrespective of the adopted strategy. However, each has it´s own level of importance given the strategic choice.

Methodological procedures to build a model were based on the MCDA technique. To this effect, adjustment procedures performed during the construction of the model were in alignment with this methodology and relevant to the building of the final structure. Given this is a constructed model, pondered cost variables were duly selected and further detailed so as to ensure the model made improved sense.

Several meetings with the study group were required to further discuss the best structure for cost evaluations. Therefore, some factors which were at first considered important to the model ended up being excluded, once deemed unnecessary, repeated or out of purpose in terms of this model´s objectives.

Furthermore, several variables compose the model. Their amplitude must comply with the interests and needs of those held accountable for it´s very construction. Therefore, if the problem to solve is far too complex, the largest possible number of variables that impact the issue must be taken into account. If, on the other hand, the question that calls for decision is simple, only a couple of variables may be enough for one to come to the desired results.

The results of this study are not conclusive but it is understood that the model developed is of use in improving the decision making process involving costs at companies. Thus, for instance, if traditional accounting systems demonstrate that a given product´s cost is R$ 100,00 they don´t provide

evidence as to whether this cost is good or bad when it come to making strategic choices pertaining to the product. It´s no more than a number that has been measured according to cost allocation techniques, which is, in fact, the best approach to determining the cost of a product. However, when it comes to cost evaluation, it is commonly understood that knowing if cost measured by accounting systems is good or bad for the company´s competitive strategy, is to be expected. Nevetheless, it´s up to the decision makers to make corporate competitive strategic choices, determining what is a good or bad cost figure for the organization.

Given the above, one concludes that the cost evaluation model might supply useful information for the taking of decisions, irrespective of the competitive mode chosen by a given company.

As to it´s application, considering it is a generic model, structured on the constructivist methodology, it might not be useful to all companies. Managers must adapt the model to make it specific to their reality. To ensure sound deployment, the suggestion is that decisors part criteria into those that shall remain, which are irrelevant and also new ones that will be part of the model, once adjusted to corporate requirements.

In this study, the drive to differentiate between cost measurement, that is, cost accuracy (of the cost calculations) as in traditional costing method standards, and the respective evaluation of these measured costs, was emphasised. The measuring and evaluation of costs are entirely different matters, yet fully complementary. Thus, data supplied by accounting may be transformed into relevant information for managers to take decisions.

One also concludes that a cost evaluation model, built according to the characteristics and interests of the organization, may be the missing key that makes accounting more useful to companies and to the decision making process. It is common belief that by using the model managers may visualize, in a clearer manner, the impact of costs on corporate long term strategies.

Notwithstanding, one of the study´s limitations concerns the fact that the constructed model was not field tested. It is our understanding that verifying the results of its application at companies is relevant to the supporting of the ideas setforth in this research.

REFERENCES

Borgert, A. (1999). *Construção de um sistema de gestão de produtos à luz de uma metodologia construtivista multicritério*. Tese de Doutorado, Programa de Pós-Graduação em Engenharia de Produção e Sistemas, Universidade Federal de Santa Catarina, Florianópolis, Santa Catarina, Brasil.

Corbett Neto, T. (1997). *Contabilidade de ganhos*. São Paulo: Nobel.

Drucker, P. F. (2001). *Desafios gerenciais para o século XXI*. São Paulo: Pioneira Thomson Learning.

Eiler, B. & Cucuzza, T. (2003). Crise também na contabilidade gerencial. *HSM Management*, *36* (7).

Ensslin, L., Montibeller, G.N. & Noronha, S.M. (2001). *Apoio à decisão.* Florianópolis: Insular.

Goldratt, E. M. (1991). *A síndrome do palheiro*. São Paulo: IMAM.

Goldratt, E.M. & Cox, J. (1993). *A meta: um processo de aprimoramento contínuo*. São Paulo: Educator.

Hamel, G. & Prahalad, C.K. (1995). *Competindo pelo futuro: estratégias para obter o controle do seu setor e criar os mercados de amanhã*. Rio de Janeiro: Campus.

Johnson, H.T. (1994). *Relevância recuperada: empowerment, delegando poder e responsabilidade para crescer*. São Paulo: Pioneira.

Johnson, H.T. & Kaplan, R.S. (1993). *Contabilidade gerencial*. Rio de Janeiro: Campus.

Kaplan, R.S. & Norton, D.P. (1997). *A estratégia em ação: balanced scorecard* (7ª ed.). Rio de Janeiro: Campus.

Leone, G.S.G. & Leone, R.J.G. (2002, outubro). O custo exato é uma utopia. *Anais do Congresso Brasileiro de Custos*, 9, Guarapari, SP, Brasil.

Noreen, E., Debra, S. & Mackey, J.T. (1996). *A teoria das restrições*. São Paulo: Educator.

Porter, M.E. (1986). *Estratégia competitiva: técnicas para análise de indústrias e da concorrência* (7ª ed.). Rio de Janeiro: Campus.

Porter, M. E. (1989). *Vantagem competitiva* (11ª ed.). Rio de Janeiro: Campus.

Shank, J.K. & Govindarajan, V. (1997). *A revolução dos custos (*2ª ed.). Rio de Janeiro: Campus.