

Integration Relationship between SCM & SAOI, Its Effect on Selecting & Developing Competitive Strategy

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ABSTRACT

Recently, there are many studies concerned in discussion of Strategic Cost Management (SCM), but most of these studies did not have the Framework and/or tools, as an important scientific aspect, and also the mechanism of how to apply the (SCM) as an important applied aspect. Hence, this study is concerned with providing or establishing the scientific base for the framework, tools and mechanisms of how to deploy and develop strategic cost Management, in addition to highlighting the integration and interrelation levels between these frames, tools, and mechanisms. Eventually, the study concludes by introducing the strategic accounting models, that may be useful for Strategic Analysis of Operating Income (SAOI), to measure the success of selection, management and development of general competitive strategy/strategies.

Keywords: *Strategic Cost Management, Strategic Analysis, Operating Income, Competitive Strategy, Integrated Relations*

INTRODUCTION

After the emergence of many modern concepts, approaches, and tools in the nineties of the past century, and after, many of such concepts, approaches, and tools have settled, through number of studies with the different temporal and spatial roots of each, there had become a scientific desire for uncovering the reality of entangled relationships between such concepts, approaches and tools.

The role and effectiveness of Cost management system differs with the differentiation of the strategy used in competition. So, in firms adopting the cost leadership strategy as general strategy in competition, it would be adequate to use the product target cost approach as a tool of control on strategy. Whereas, in case of the firm pursuance of product differentiation strategy cost management concept had developed so that it became called the comprehensive cost management, which in its implicit is the use of technical and professional tools supported with specialized expertise, for accomplishing integration between both of required resource costing, planning, and achieving control over them, in a way that would contribute effectively to profit analysis, and judgment of the side risk levels.

Despite the agreement upon the importance of strategic cost management, but there is no an agreement whether among researchers, authorities, organizations, or specialized professional and consulting centers about its axes and tools, hence, it has to be subject to study to know the most important axes composing strategic cost management sides (Shank, 2002) and also the importance of recognizing the potentials of each of the tools that had proved their effectiveness through practical practices. The organization competitive position analysis is regarded as one of the most prominent aspects relevant with strategic cost management (Scheidt & Thipadoux, 2005] but it had not received the sufficient attention whether on the side of

identifying the role relationship with strategic cost management or on what and how such analysis is undertaken. Such study aims at uncovering the relationship between one of the recent approaches in the costing science, that is strategic cost management (SCM), and one of the recent approaches in strategic accounting analysis of strategic operation income.

PRVIOUS STUDIES IN THE FIELD OF INTELLECTUAL DEVELOPMENT OF SCM.

The subject of cost management is one of the most prominent subjects of which accounting thought had paid much attention. the researcher has tackled on all what could be reached of studies over the period from 1990 to 2005. In a study of Seed (1990) regards that the comparison of inbound and outbound cash flows (realized) in the plan, would not provide a complete image of the mistakes and what to be done. Then the study indicated at that it is with the modern technology projects, of which the most important to distinguish is the decline of the life cycle, it is adequate to use the modern concept of accounting on cost based on the product Life-Cycle Costing. Foster & Gupta (1994) indicate that Marketing costs were connected with cost management system, and the management accounting role in developing measurements of evaluation of marketing function costing efficiency and effectiveness (Balachandram & Srinidhi, 1996). The study concerned with addressing the relation between perceived costs and compliance with levels of quality; as such relation has been divided into three sub-relations successively. In the first stage comprehensive quality cost begins at high level to decline with time till it reaches a given level of quality compatibility called "Accepted quality level" (AQL). In the second stage, quality costs increase in a declining rate with quality compatibility proportion till it reaches the conversion point, after which third stage begins, as quality costs would decrease

till it reaches point at which percentage of compatibility would become 100%, and production would be zero defect. The study of Gaiser study (1997a) addresses cost management systems in German context at both academic and applied levels, as the study had concluded at that in the sixties and seventies of the past century two essential concepts have appeared. First one is "Eingelkostenrechnung", meaning charging all direct costs upon cost objects. The second one was "Grenzplankostenrechnung" which is still implemented in German firms so far. While the Gaiser (1997b) study of It had addressed the subject of target cost as one of cost management system tools, and the accounting requirements and practices in Germany against those exercised in Japan. The most important problems have been observed are the difficulty of German product access to new markets on one hand, and loss of market share due to reduction of the capacity of meeting the needs and desires of clientele on another hand. Agrawal's study (1998) It addresses CMS from perspective of operating performance of the organization, as the study had manifested a model of cost management system depending on three supports as following: First support – Self-Perpetuating System of Improvement Second support – Top Management Commitment Third Support – Worker involvement Freeman Study, (1998), suggested an executive framework of cost management system, for realizing a competitive advantage in world markets at four layers / levels, They are: market/client strategy, product /service, operations and inputs. The study holds the view that accounting data flow (inside to outside) take an opposite path to market data flow (outside to inside) in the referred to framework. The study had proffered a three level conception of value chain (product innovation – production size – client acceptance).

The study of Kauffman (1999) researches the establishment policies in regard of procurement and purchase chain analysis and how such policies would adapt, in short term, with strategic methodologies, most important of which, cost management strategic perspective, and

efforts of purchasing costs reduction. Shank (1999) had reinterpreted the data of one case that had been addressed by Shillinglaw in 1967, when he analyzed the costs of offering a product/new meal in ALS Dansk Minox for readymade meals, to show how to analyze costs under price imposed by market upon the wholesale dealer, retailer, and then the firm. Cooper (2000) had showed that the work force had shifted from being interchangeable and of low value, to being a valuable asset in need of care and encouragement of modern cost management. Nicolaou study (2001) had explained the scope of using cost management systems as a system for strategic and operational decision support. Nicolaou study, (2002) had tested three hypotheses. Through a field study involved 341 establishments, the study proved the importance of CMS in believed interaction with modern techniques, whether technical, such as (EDI) or operational, such as (JIT). Ward's study (2002) suggests that establishment should conduct strategic situation Analysis for revenues identification at the level of products, markets and strengths and weaknesses, as well as analyzing the competition environment internally and universally for identification of its impact on the establishment customer, suppliers and competitors and evaluating future needs. The study of Metrus Group (2003) addresses the need of various firms in the United States to turn towards cost cutting. Therefore, the study had offered the idea "Smart cost cutting" as such idea was crystallized through identification of six opportunities/ reduction areas. Watson (2003) proffered an engines action framework covering five aspects represented in evaluating cost engines in(drivers) medicines sector in general and evaluating alternative strategies for describing such drives and evaluating the influence of proprietors and the political circumstances and identifying the cost of execution of the strategy adapted. Finally, evaluating the financial benefits expected of the chosen strategy. Blyth (2004) proffered seven learned lessons from cost management, for strategic success accomplishment. The study holds the view that the road map

of such success, represented in pursuing such lessons. The study of Christopher & Thor (2004) addresses the performance evaluation model in the long run; as such performance would be measured by the result of subtraction of product life cycle revenues by life cycle costs. Neuman's study (2004) had proffered a chart of work and activity units, cost drivers and how to assign cost, using ABC in information technology establishments. Peacock (2005) confirms the consideration of the impact of accepting orders, hence the establishment profit level, upon cost engine and assemblies, levels and costs of quality, potential processes of reoperation, operation inside/ outside establishment and analysis of such operation costs. In the light of the above, it is possible to conclude a number of findings, First, many studies are predominated with the lack of interest in study of integration between tools though which could be possible to accomplish an active management and a strategy of cost. Second, there is a belief – based on perspective unity – that it is possible to fulfill success in business environment by reliance on implementing one of the approaches/ methods only, such as target cost, improved cost, product life cycle, or accounting of cost based on characteristics, processes, or specifications. Third, focusing on target cost in many studies as it deemed a tool had been capable of achieving great successes in Japanese environment and elsewhere of application environments. More attention needed to be paid to it. Fourth, lack of attention to analysis of the strategic position is as one of SCM axes except the two studies of Riley & Cleary (1998) and Ward (2002).

Fifth, most of studies have not shown the separation boundaries between cost management, total cost management, and strategic cost management. Sixth, The deficiency of all studies, the researcher had arrived at, is in placing down axes, frameworks or a methodology of interaction between the principle and auxiliary tools necessary for building a clear structure of strategic cost management. That may be

the launching point towards the chain of thoughts, the researcher would attempt to address by study.

SCM AND ITS ROLE IN COMPETITIVE ENVIRONMENT.

Cost management contribution from a strategic perspective in cost analysis field is represented in supporting the firm in selecting the study of competition suitable for it in the market (Horngren 2006). In other words, performing a cost analysis in a way to contribute in selection and development of general strategies the firm adopts as a principle in competition whether was cost leadership or product differentiation strategy. Different strategies demand different cost analysis perspectives which means that there is deviation analysis for each strategy separately and then there must be resuming up of deviations in a way that manifests the extent of success in selection and execution of the chosen competitive strategy. In few words, it is possible to formulate the objective associated to each of the concepts of cost management, in accordance with the development it has gone through (Shank & Foster, 1999), through the following table 1.

Table 1. Development of Cost Management Concept

Development Stages of Concept	General Objective
1- Cost management	Cost reduction by focusing on current and prospective product costs.
2-Comprehensive cost management	Seeking cost reduction in purpose of profitability and risk analysis.
3- Strategic cost management	Realizing competitive advantage for the establishment through rationing the selection and implementation of the adequate competitive strategy.

Cost management on a strategic perspective or strategic cost management, is the managerial exploitation of cost information, effectively and directly in one, some, or all stages of management of general firm strategy/strategies (Shank, 2002). The principle axes of cost management are represented, on a strategic perspective, in three axes: cost drivers analysis, value chain analysis, and strategic firm position analysis.

Strategic cost management is governed by a number of principles that can be summed up in the following (Trussel & Bitner, 1998):

- 1- Understanding how value is realized, and setting up the specific firm targets.
- 2- Understanding the customer profitability and the engines realizing value for it.
- 3- Relative comparison between resources have been employed and activities adding value and understanding the competitive process in the light of what is taking place of operations.
- 4- Determining the efficiency in resource employment under comprehensive assessment of opportunities and priorities.
- 5- Analysis and assessment of data explaining events and results.

Recently a more developed and comprehensive concept of cost management had emerged and is represented in interorganizational cost management (Cooper & Slagmuler, 2003), which is a way/method of increasing profitability through cost management and reduction using two essential dimensions. These are coordination and cooperation among the organizations connected with a supplying network, as it is possible to fulfill the objective of cost reduction, hence, increasing profitability through a coordinating and cooperative work team, based on application of interorganizational cost management through cost reduction on a total perspective and profitability increasing on total perspective. To achieve cooperation, which means conductive, would be necessary between organizations so that such

cooperation would realize lean supplier network that has many characteristics, presented in mutual dependence, mutual trust and comprehensive participation in available information. Whereas isolation means non-conductive, based on individual cost reduction, and keeping away from dealing with team work mentality. That would lead into adversarial relationships, as every firm for itself (Cooper & Slagmuler, 2002).

There are two ways that may be compared between, for concurrent cost management techniques (Cooper & Slagmuler, 2003). Synchronous cost management methods realize a number of advantages could be stated in the following:

- 1- Provide suppliers with enough time for designing their products and with greater opportunities for cost reduction.
- 2- Enable suppliers of development of new generations of their independent products with integrated designs.
- 3- Quick product offer, because development processes within the chain of organizations take place simultaneously.
- 4- Reduction of total costs by allowing the supplier to transfer costs across products to all customers. However, there is a criticism directed at such ways, in that they deprive the buyer "customer" much of his ability of distinction of products, based on technological comparison used in the principle function the product performs (Heffes, 2004). But inter-management of application is characterized by continuous development of product design, great deal of comprehensive improvement of industrial process efficiency and improving the efficiency of seller/buyer exchange.

SCM AXES AND TOOLS.

First axis: Cost Drivers Analysis

Such axis is considered as one of the most important axes that many studies have been giving a special importance. For more details, see Searcy, 2004; Briver, et al., 2003; Player, 1998, Forster & Swenson, 1997; Ruhl, 1995. Considering that cost engines represent vectors driving cost toward the levels the organization would stand, hence, influence, greatly, the extent of organization success in executing its strategy, even at the level of operational processes. Such engines may be classified on activity types perspective as follows, For example, You & Lung, 2003).

First: Organizational Activities:

They are such general activities forming a reflection of the organization mission, vision and strategy directly or indirectly and classifying the organizational activities into structural activities and procedural activities as follows: *Organizational Cost Drivers:* They are structural or procedural factors determining cost structure in the long run. Thus they play an important role under cost reduction strategy. Organizational activities and its drivers could be classified into "structural" and "procedural".

Second: Operational Activities:

They are the daily activities resulting in the organization structure and operations. *Operational Cost Drivers:* They are the factors influencing the moving of operational activity costs. Such activities may be divided into operation activities leading to three levels at the unit level, group level, and product level. Now a question would emerge about the impact of variety in production line products upon cost engines and the systems suitable for measurement and assessment. To answer such question, it could be said that in respect of firms proffering many products through certain production line, they have to compare between value of variety in the market on one hand and the cost of variety in the factory and channels of distribution on

another hand. That would require precise measurement and assessment of production line costs due to the effect they have on the success or failure of the competitive strategy.

The researcher would confirm that the variety in production line products would require selection of adequate methodologies of cost accounting such as ABC accounting, PCB accounting, ABC-II accounting, FBC accounting, and throughput costing accounting.

It is worth remarking that ABC methodology represents a strategic tool, not just an accounting system. However, that cost engines analysis on a strategic perspective is governed by a number of limitations, most prominent of which are represented (Briner, 2003):

- 1- Difficulty of determining and measuring the effect of all engines relevant to particular product, or a particular business unit, specially when they participate in influence.
- 2- Relationship between cost engines is a strong engagement relationship, to be expressed in an exponential multiplicative form. Hence, it is necessary to formulate cost planning equation in a logarithmic form.
- 3- The validity of correlation relations in the multiple slope model is within strategically relevant ranges of each of cost engines.

The researcher suggests that the challenge imposes itself during the following years is looking for new ways of measuring the impact of structural and executive cost engines whether individually or integrally among the engines. In a study of the American cement center, it has been arrived at that dealing with costing engines from a strategic perspective a number of considerations could be summarized in the following (Cement, American, 2002)

- 1- Costing situation should be explained based on the establishment competitive position not based on the size of outcomes, through both of Structural choices Executive skills.

- 2- Differentiation of the relative importance of strategic engines across time.
- 3- Multiplication of cost analysis frame works in proportion of the different engines of costing engines.

Second Axis: Value Chain Analysis.

Value chain represents "the set of activities linked together, contributing in value creation, starting with the means of obtaining resources, until final consumer gets rid of the product" (14 Cast, 2003). From a strategic perspective, value chain concept differs from the added value concepts in that the later faces two problems; they are (Ellran, 2002): First, Added value concept starts too late as it is not concerned with value analysis but with the commencement of the process of production. Second: Such concept stops too soon, as it is stopped on cost analysis as soon as product is sold. The value chain concept faces such two problems through providing two very important concepts for facing the two problems respectively, they are Supply chain cost analysis in purpose of analysis and evaluation of the opportunities that may be exploited through communication with suppliers and Life cycle costing analysis, in purpose of analysis, development and then making use of the opportunities provided by understanding and investing correlation relationships with clients, in what results in increasing the firm's profitability. There are a set of methodological steps for building and using the value chain in enhancing the strategic cost management, they are Definition of value chain, in respect of costs, revenues, assets and activities of value fulfillment. Diagnosing costing engines of each activity is inside value chain. Development of the style of enhancing the competitive advantage through one of the following two alternatives: Observing costing engines better than the competitors through all or some of the following: Reduction of activity cost, under the stability of the value (revenue), Increasing the value (revenue) under the stability of cost,

Reduction of the assets necessary for performing the activity under the stability of both cost and revenues, and Re-designing the form of value chain, through study and analysis of redesign of the relationships within work units, between work units within the establishment, between the establishment and suppliers, or between establishment and clients represented in the following (Ellram, 2000). Value chain concept might be concerned with four areas for improving the firms' profitability. Such areas are: Relationships with suppliers, Relationships with clients, Internal links between activities with business unit, and Internal links between business units within the establishment.

Third Axis: Analysis of The Firm Competitive Position

Despite of the extreme and remarked attention that had been given to both of costing engine analysis, and value chain analysis as two essential axes for strategic cost management, as dozens of theoretical and applied researches and studies have addressed these two axes, the organization competitive position Analysis had not acquired the adequate deal whether theoretically or practically. Studies have pointed at the organization profitability analysis from a strategic, or even competitive prescription had been scarce (Schiedt & Thibadoux, 2005; Cooper & Slagmulder, 1999), as most of the signals were weak and not in depth and did not belong to a clear framework, identifying the site of such analysis within the theoretical framework of the strategic cost management. That may be attributed to the non availability of analysis tools and application mechanisms.

Main Tools of Strategic Cost Management.

First: Target Cost

Toyota Co. had presented target cost in the sixties of the twentieth century. Since then, its use became greatly common among Japanese

companies, but American companies were to the contrary, more adhered to traditional practices of cost measurement and control, and have accepted the implementation of target cost at narrow scope and in slow pace [For more details: Pierce, 2002, pp. 30-32].

Perhaps it is among the most precise target cost definitions that "it is a process of confirmation of that the products desired to be manufactured under particular specifications and functions and specific prices, could be manufactured in a cost susceptible of achieving the desired level of profitability, as well as entirely insuring meeting of client needs and desires" (Smith & Lockamy III, 2000). Cooper considers that target cost varies in its way of implementation, but has one general structure (Cooper, 2003); as it may be said that general steps to measure target cost would be represented in four main steps, could be demonstrated briefly as follows:

- 1- Deciding target price, in light of local and regional or international competition according to organization work circumstances:
- 2- Setting up and deciding target cost under technical and administrative circumstances intent to carry out.
- 3- Determining the undesired cost gap between target cost and current cost.
- 4- Redesign products and for operations and or procedures for realizing the target reduction in cost according to the nature of each product and circumstances of its production and marketing.

Second: Kaizen (improved) cost

Monden defines kaizen cost, in a study he prepared to the industrial & financial systems, as "the process of enhancement of estimations accompanying the product when in production stage and forms together with target cost system the accounting system of product life cycle cost," (IFSR & D, 2001). Edwards (2001) defines

kaizen cost as " the process of periodic maintenance of the level of cost of the product in its stage of production, through the organization efforts for realization of the desired level of cost." Implementing kaizen cost system should be through two types of efforts. First, the efforts accompanying the stage of acquiring the assets and setting them down in organization, with what that implicates of events of which various types of cost are generated. Second, the efforts related to the product and activities presumed to add value to the product, which necessitates such value analysis. Because 80% of total costing of the product takes place before commencing in its production, then, what could be counted on upon developed cost system in reducing total cost often, would not exceed 5% of total cost (Edwards, 2001).

Recently, a tool known as inter-organization Kaizen costing had emerged; as such system depends on the presence of a strong correlation between suppliers. The applied stages of kaizen costing commence from the buyer or supplier and each party has to understand the benefits that could be fulfilled from investment by the other party. There are two approaches, one of them may be the appropriate approach for the buyer to start inter organizational development or improvement. Such two approaches are (Cooper, 2003): First: Supplier Instruction Such approach aims at redesigning a certain part of the product and/or technical process to make it more appropriate to the production system the supplier follows. Second: Assisting Supplier In Realizing Savings. Such approach would allow reaching saving realization through two methods A- single – supplier Approach as the least one of high costing sources in regards of items and kinds the supplier uses to reduced, then to head to the next source and so on. B- Multiple – supplier Approach as many advantages are obtained by purchasing through the establishment from the supplier in certain size at the least level of costing. Both methods depend on the purchaser. So, the starting point in improvement or development is

through supplier; as it determines the new methods of design that realize the least costing under certain level of quality.

Third: Product Life Cycle:

The need to measure costing during product life cycle had emerged. As various studies that direct toward the study and analysis of such cycle had appeared (Shields & Young, 1999). The concept of costing measuring through product life cycle is represented in the attitude towards comprehensive product cost measurement through different stages of value realization, since the starting of thinking in it going through conducting preliminary studies of idea execution, preliminary research in design stage, and then all production stages, going through marketing and selling activities and what is relevant with them and what follows of activities of technical and credit support, and all services required by the continuity of client loyalty until getting rid of the product.

Researcher regards that the attention on product life cycle measurement has been urged by a number of reasons that could be summarized in the following:

- Relative change in cost structure through the stages product goes through, hence, variation of methods of enumerating analysis assigning, and benefiting of costing information at each stage.
- Declining and shortening of most product lifecycles.
- Escalation of competition edge, whether through technical ideas and characteristics, competitive advantages, prices, or accompanied services.
- Increasing the limit of technological prescription impact of a number of capital and consumer products, regardless of the entry/ non entry of the product at the economic prescription stage.

- Desire in defining the proper price covering product cost, in light of technical and marketing changes, and after, that take place upon product.

Auxiliary Tools of Strategic Cost Management

- Value Engineering
- Simultaneous Approach in Development:
- Functional Analysis Approach:
- Costing Tables
- Reengineering Processes
- Continuous Improvement
- Benchmarking
- Back-Flash Costing
- Throughput Accounting
- JIT Manufacturing
- JIJ Purchasing
- Strategic Quality Management
- Theory of Constraints (TOR)
- 14-Attribute Based Costing (ABCII)
- Process Based Costing (PBC)

Such an approach represents a development of *ABC* approach. It is based on interpretation of the requirements of application of strategy of differentiation of the product subject of concern which is the required process/ processes; hence, there is a difference in pursuing costing at process level than activity level.

MODELS OF SAOI AND ITS ROLE IN ASSESSMENT OF COMPETITION STRATEGIES.

The overlapping and variation of impacts make a scientific necessity and practical need towards the analysis of such impacts, whether those are relevant with expected natural reasons, or with tactical or strategic reasons particular of managerial and competitive performance of the

organization. If the operation revenue represents of many of interactions, and in which many of the secondary results are summarized then, it should be subjected to strategic accounting analysis in purpose of judging the extent of success in execution of the strategy or strategies that have been taken as a basis of competition.

Strategic Analysis Approaches of The Firm Profitability

There have been approaches or rather, attempts in the field of the firm profitability analysis of which may be the most prominent (Cooper & Slagmulder, 2000, Clinton & Graves, 1999, Hall et al, 1997).

Annual Report Approach

Such analysis heads towards the comparison of the actual performance with the planned performance (income balance), as the comparison of percentage of actual performance with the percentages of planned performance at the level of operational revenues and also the production, marketing, managerial and financial cost elements for discovering the positive and negative aspects particular of such activities. But there are many aspects directed toward such approach such aspects are represented in the following: a) Ignoring the approach for measuring and assessing the extent of the sale performance quality, b) Ignoring the assessment of the extent of industrial process quality, and c) Planning the cost of research and development activities, marketing and management, as a percentage of sales. Therefore, there is no major scientific importance or great benefit out of resorting to application of such approach.

Management Attitude Approach

Such approach is based on understanding a set of methodical steps as follows: a) Identifying the basic and environmental factors influencing profits, b) Attempting to get rid of deviations in profits through dealing with such factors, c) Concentrating on study of the

impact of deviations in profits upon each factor, d) Attempting of computing the certain effect of each factor separately, through identifying and studying the effective factor with fixing the remaining factors, e) Study of the effect of adding the surrounding circumstances and complications in order of the importance, and f) Stopping the analyses processes, when adding circumstances and complications become unfeasible. Such approach is exposed to a criticism that is represented in that there is no direct link or connection between performance assessment – in light of such methodical steps and strategic attitude of the establishment.

Strategic Framework Approach

Such approach is based on identification of two dimensions: a) Clear definition of firm mission and b) correct definition of strategy/strategies liable of realizing the competitive advantage. The most important distinctive of such approach from the first and second approaches may be its focus on connecting the analysis with ways and methods that develop the firm business units performance, so that the strategic objectives of such units would be fulfilled, and all business units efforts should come together in a way that accomplish the firm strategic objectives, as long as the later are derived from the firm mission (First dimension) and its general strategy (Second dimension).

Research regards that such approach – despite its importance – had not proffered the applied tools through which it could be possible to arrive at an analysis of deviations interpreting the extent of success or failure in execution of strategy selected as a basis in competition. The market on one hand, and how adequate such strategy to the internal circumstances or external events in different competition environment/environments on another hand. Therefore, deviation analysis– from a strategic perspective – represents the essential communication tool for connection between control operations and tools the management uses. The main steps of such analysis have been recently

presented by Horngren et al., as two steps are undertaken as follows (Horngren et al., 2006): *First Step*: Total profit analysis using relevant main and secondary factors. *Second Step*: Summing up such deviations presenting significant explanations. The methodology of strategic change analysis may be summarized through the following accounting models:

$$ROG = \Delta(S_{xn} - S_{x0}) * P_{x0} \quad (1)$$

Where ROG indicates: magnitude of variance in growth component that is attributed to revenue impact.

SXn: represent the actual amount of sales in the comparison year.

SXo: represent the actual amount of sales in the basic year.

PXo: represents the actual sale price of unit product in the basic year.

$$COG = [\sum NI_{xn} t_{x0}] - (\sum NI_{x0}) * PNI_{x0} \quad (2)$$

Where COG indicates: magnitude of variance in growth component that is attributed to cost impact.

$\sum NI_{xn} t_{x0}$: input elements that could be used in producing comparison year outputs, with the same production relationship and prevailing circumstances in basic year.

$\sum NI_{x0}$ Actual input elements that have been used in producing the outputs in basic year.

PNI_{x0} prices of input elements prevailed in basic year.

$$FOG = ROG - COG \quad (3)$$

Where FOG indicates: the net impact of growth component on the change in operation revenue, that is attributed to the interaction between revenues impact are costing impact that have reached in the previous models 1 and 2.

$$ROV = \Delta (P_{xn} - P_{x0}) * S_{xn} \quad (4)$$

Where ROV indicate: the magnitude of variance in price coverage component that in attributed to revenues impact: Pxn represents actual sale price of product unit in comparison year.

$$COV = \Delta(PNI_{xn} - PNI_{x0}) * \sum NI_{xn}/t_{x0} \quad (5)$$

$$\text{Hence FOV} = \text{ROV} - \text{COV} \quad (6)$$

Where FOV indicates: the net impact of price coverage component on the change in operation revenue, attributed to interaction between revenue impact on price coverage and cost impact on price coverage and cost impact on price coverage that later impact does not differ from impact of cost on growth.

$$\text{PRO} = [(\sum \text{NI}_{\text{xn}}) - (\sum \text{NI}_{\text{xn}}/t_{\text{x0}})] * \text{PNI}_{\text{xn}} \quad (7)$$

Where PRO indicates: the change in operation revenue that is attributed to productivity component: prices of the element of the inputs prevailed in comparison year.

$$\Delta (\text{I}_{\text{nx}} - \text{I}_{\text{x0}}) = \text{FOG} + \text{FOV} + \text{PRO} \quad (8)$$

Where $\Delta (\text{I}_{\text{nx}} - \text{I}_{\text{x0}})$: indicates the change in operation revenue between

To measure the impact of each strategy -in separate- on operation revenue based on the relationship the above diagram shows- of the taking into consideration the impact of natural growth in market size- expressing that growth in market size – expressing that would be possible through the following accounting models:

$$\text{CLSOI} = \text{PRO} + [\text{SDOI}_{\text{p}} + \text{GOM}_{\text{p}}] \quad (9)$$

Where CLSOI indicates: the impact of cost leadership on operation revenue

SDOI_P: represents the change in operation revenue that is attributed to strategic decisions of reduction in the product unit price. Such change could be

Computed through the following model.

$$\text{SDOI}_{\text{p}} = \text{S}_{\text{xn}} * \Delta (\text{r} - \text{rs}_{\text{d}}) / \text{r} \quad (10)$$

Where S_{xn} indicates: Actual sales in comparison year. $\Delta (\text{r} - \text{rs}_{\text{d}})$ represents change taking place in product unit sale price (r) and the new sale price representing the price under strategic reduction decisions based on productivity improving.

Whereas GOM_P in model 9 indicates the change in operation revenue that is attributed to the growth in the size of market share resulting

from productivity improvement. Such change could be computed through the following model:

$$GOM_P = FOG * [\Delta M_P / \Delta M] \quad (11)$$

Where ΔM_P indicates: the magnitude of change in the market share size resulting from improvement in productivity.

And ΔM : represents the change in sales size in between basic and comparison years.

$$PDSOI = COV + SDOI_E \quad (12)$$

Where PDSOI indicates: the impact of product differentiation on operation revenue.

Where $SDOI_E$: represents the change in operation revenue that is attributed to decisions of reduction in product unit price based on industrial and practical expertise. Such change could be computed through the following model.

$$SDOI_E = S_{xn} * [\Delta(r-r_{SE})/r] \quad (13)$$

Where $\Delta(r-r_{SE})$ indicates: the change taking place in product unit sale price (r) and sale price under strategic reduction decisions, based on industrial and practical expertise .

Hence $(r-r_{sd}), (r-r_{SE})$ form together the total magnitude of reduction taking place in product unit sale price. On another hand $(SDOI_P), (SDOI_E)$ form together total actual value of sales of comparison year.

$$GOM_L = FOG * [\Delta M_L / \Delta M] \quad (14)$$

Where GOM_L indicates: the change in operation revenue of growth component, resulting from natural development in market size and economical circumstances. ΔM_L represents: the magnitude of change in the market share resulting from the natural development in market price and economical circumstances, hence $(GOM_P), (GOM_L)$ form together a final resultant of the growth component (FO6)

LEVELS OF INTEGRAL RELATIONSHIP BETWEEN SCM AND SAOI

There are many relationships of intermingled and integral levels. These can be stated in four levels.

First Level: Strategic Cost Management Axes Level.

Success in understanding and creating integration between such axes would insure at the lowest – non failure in implementation of the organization general strategy/ strategies. The integral relationship at such level could be stated, through formulation of three auxiliary relationships as follows.

Relationship of cost drivers with value series

Such relationship represents close shape of the relationship between activities, operations and products, as the general strategy of competition, whether cost leadership or product differentiation will impose, at various degrees, cost management from a strategic perspective based on value realized from each activity and operation. Also analysis of the product/ products value for the group of clients, hence the necessity of comprehending the cost vectors and its relationship with the value realized from the performance of the civilities is considered an extremely important matter for the success of the strategic cost management. The form of the relationship should extend between cost engines and value series to shoot outside the boundaries of the organization, to reach the activities and value series by the suppliers, and activities and value series by the distribution outlets; thus the client value develops (Cooper & Slagmulder, 2003).

Relationship of cost engines and the competitive position analysis.

Particularly cost leadership strategy (expressed in model No 9 in the fourth section). No doubt that assessing such strategy will urge the

research and analysis of cost engines, whether were structural executive, or operational. Also, benefiting from the competitive position analysis, in taking the suitable decisions toward product pricing, the expression in the production size, or expansion in penetrating the current market or new markets. Models No (10, 11, 13, 14) contribute in such decisions.

Relationship of value series and competitive position analysis.

It is necessary to conduct forward integration with dealers and clients, and backward one with suppliers in the single industry, because that what create big autonomies capable of competition whether in he local, regional, or world markets, Hence, that would urge not only industrial or internal value activities, but also the study of the activity performance problems at the forward and back ward value series. It is also seek the common solution of what may exist of problems that would be the way towards enhancing the competitive position, in what would strongly insure the series activity cost management professionally that guarantee success at long run, and maximize the value that would be fulfilled for the end consumer, and consequently, increases its connectedness with the product and its loyalty to the series that had offered it such product.

Second Level: Level of Strategic Cost Management Tools

Main Tools Level

Because the main tool in cost management from a strategic perspective represent the active mechanisms toward accomplishing the cost leadership or presenting products of distinguished characteristics proportionate with clients and consumer needs and desires. Thus such tools have between each others relationships featured with clarity and importance to great deal. Such level relationships could be

expressed through four relationships as follows: [Figure 1] indicate the relationship between main tools of SCM

Relationship between target cost approach and kaizen cost

The origin of the integral relationship between such approaches is that they represent two consequent tools in application as the target cost approach represents management accountant tool in the product design stage to arrive at the target level of cost before commencement of the production process, whereas, during such process in case of that operational, technical, or even external circumstances had occurred, that had led to the necessity of interfering with modification or development, meaning the necessity of using the kaizen cost approach as a complementary tool to arrive with cost level or quality level at the required level.

Relationship between target cost approach and approach of accounting of product life cycle cost

Such relationship represents the relationship of the part with the whole, as during the product design stage, a comprehensive conception of the product cost through its life cycle should be set up regardless of the view angle to such cycle (production - marketing - consumer).

Naturally, life cycle cost may need redesigning for regulating cost through some stages so that it become adequate to the firm production and competitive circumstances in each stage in need to that, which create a necessity for implementing the target cost approach integrally to life cycle cost approach, till strategic cost management perspective and implementation are accomplished.

Relationship between kaizen cost approach and approach of accounting of product life cycle cost

Based on the same sense, it is possible to say that through product cost planning stage during its life cycle, it is necessary to set up the

potential scenarios through the stages of product, presentation, growth, maturity and descending, whether on the technical or marketing side.

No doubt that development scenario, when set up through the product cost planning stage for its life cycle, are better than being imposed on the organization through on or more of its operation stages. Hence, success in implementing the kaizen cost approach critically depends upon the scientific and integral planning of product cost through all stages it goes through till the stage of its disposal.

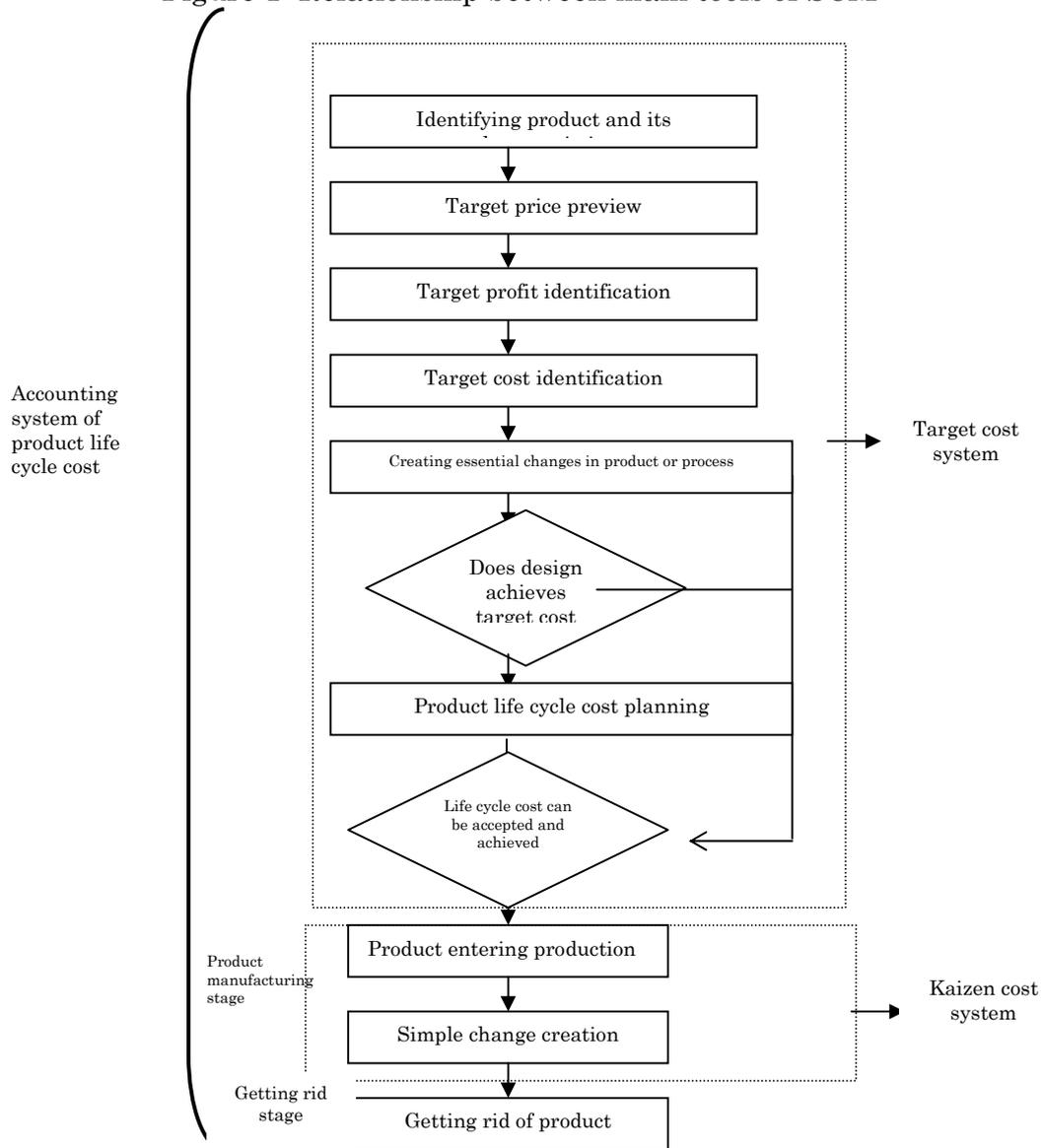
Relationship between the target cost, Kaizen approaches, and approach of the accounting of product life cycle cost

Such relationship represents the comprehensive perspective of the relationship of the main tools of SCM with each others, as the previous three relationships- at such level – gives a comprehensive conception, that makes the management in charge of selection, execution and development the competitive strategy/ strategies of a great deal of apprehension of the extent of sound selection , execution difficulties, problem encounter scenarios and the tools of remedy of such problems, whether were administrative, accounting, or technical tools and in which stage one, some, or all such tools are being used. No doubt that success in designing the relationship between the three tools is a success in management of the competitive strategy through its execution terms and development stages.

Auxiliary Tools Level

As the researcher regards the possibility of such relationship through two aspects as follows: (1) the relationship of auxiliary tools with main tools and (2) Relationship of auxiliary tools with each others It is wrong to deal with the auxiliary tools in cost management separately, because many of the applied studies that have proved the failure of some tools in problem solving – in the researcher opinion – is attributed to the belief in that implementing one tool, concept.

Figure 1: Relationship between main tools of SCM



Or approach is enough for the organization to reach all objectives it desires and when that does not happen, point of views would emerge suggesting the unfeasibility, or at least limitedness of implementation of some tools. The researcher regards that the effective program of SCM must address organically integrated and correlated axes, tools and stages and can be stated in light of what had been stated previously of relationship through (see figure2).

Third Level: Level of SAOI Analysis

To include many integral relationships that the researcher would attempt to display in five auxiliary levels, may be stated as follows: a) main components level; b) level of the auxiliary analyses included in accounting models; c) level of the component significant to the general strategy success; d) level of explained analyses of price changes; and e) level of explained analyses of quantitative.

Fourth Level: level of the relationship between SCM and strategic analysis of operation revenue

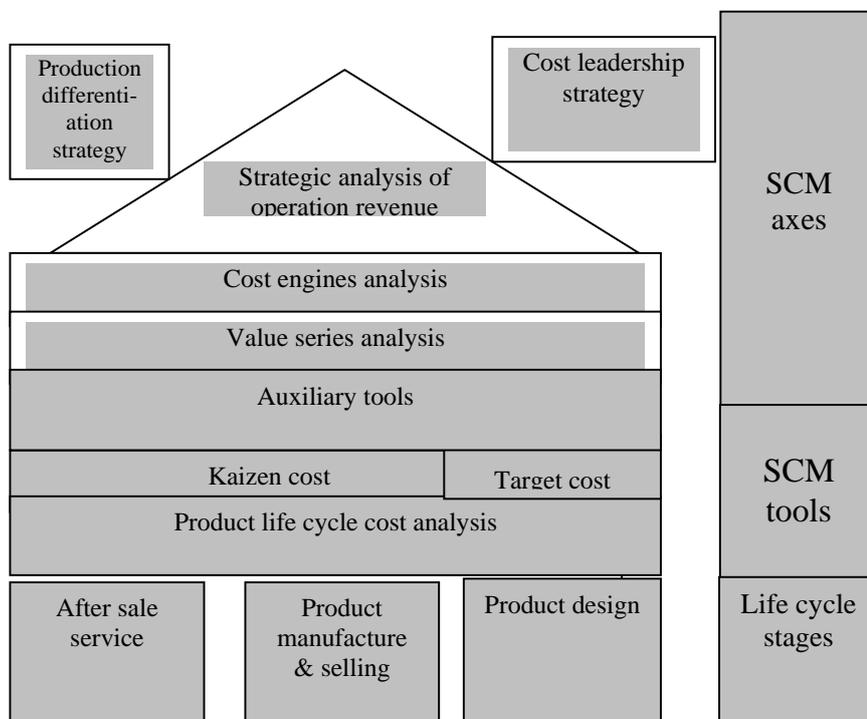
The researcher regards that at such level many relationships exist that may be addressed through two dimensions as follows: a) the influence dimension of SCM axes and tools on selection, management and development of general strategy /strategies in competition, and b) Integral dimension between strategic analysis of operation revenue and strategic cost management axes.

RESULTS

First: the researcher had presented almost twenty studies, addressing the intellectual development and scientific and practical efforts the researcher exerted in the field of strategic cost management, whether were theoretical frameworks, approaches and ideas, or practical of what had been reached of studies inferred Lack of interest in study of

integral relationships between strategic cost management axes and tools and depending on the perspective unity in adoption of some tools as an approach in achieving the strategic success.

Figure 2 integral relationships between SCM axes and tools



Success of target cost approach as one of cost management tools in the practical status and many of competitive environments and not just confining to the Japanese environment in actual life. Lack of

interest in measurement and assessment the competitive position, or providing tools expressive of the extent of success in competitive strategy management, the researcher outweighs that the reason in that is the delay in emergence of the strategic analysis approach of operation revenue. Second: Strategic cost analysis is distinguished and so is strategic cost management, from traditional cost analysis with that the later does not pay attention to the organization view and strategy, as the researcher had explained through a set of comparison tables the major differences between, the two traditional and strategic analyses of cost, and the aspects of disagreement between the two strategies of cost leadership and product differentiation from cost management perspective and also the essential disagreements between the of cost the stages of development in the general objective accompanying the development in cost management concept, the researcher had also presented the cost management axes in between the organizations as a modern strategic perspective of the relationship between business organizations. Third: the researcher had arrived at that strategic cost management must have defined axes forming the main sides of all efforts that could be exerted for success in management, control and reduction, or influencing cost adjustment accompanying the competitive strategy and also the effective tools that make the strategic cost management an approach applicable in the practical life.

Fourth: the researcher tried to present a set of accounting models through which strategic analysis may be made, that would detect the extent of success realized in the competitive position of the organization, depending on comparison between operation results realized between the basic year and comparison year, as fourteen models have been formulated that detect the reasons/ components of change in operation revenue, as it was differentiated between three components. They are growth, price coverage component, productivity component and also were differentiated between revenue impact and

cost impact on growth and price coverage components, and then it was differentiated between a set of variance through which the extent of success in selection and execution of the cost leadership and product differentiation strategies may be judged out. Then lastly price changes impact and market share change impact upon assessment of success in competitive strategy / strategies management were expressed. Fifth: After acquaintance with scientific and practical basis of both of strategic cost management, and strategic analysis of operation revenue, it became possible manifesting the integral relationship levels between each others.

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