التقنيات الصناعية وأساليب المحاسبة الإدارية الاستراتيجية

دراسة تطبيقية على صناعة الأسمنت فى المملكة العربية السعودية

Manufacturing Technologies & Strategic Management Accounting Techniques (SMA): (A Field Study on Saudi Cement Corporations)

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المستخلص:

لقد ظهرت في الآونة الأخيرة العديد من التطورات التكنولوجية في نظم الإنتاج ومداخل الإدارة الإستراتيجية، بحيث أصبح نجاح أي منشأة مرتبط بقدرتها على التكيف مع هذه التطورات.فلكي تحقق المنشأة ميزة تنافسية في الأسواق المحلية والدولية عليها سرعة الاستجابة لهذه التطورات من خلال تطوير أنظمتها الإنتاجية. وبالرغم من الدور الهام الذي تلعبه نظم المحاسبة الإدارية التقليدية إلا أن هذه النظم قد نشأت في ظل بيئة تتسم بالاعتماد على منتجات نمطية مما يتطلب تطوير هذه النظم لتتناسب مع بيئة الأعمال الحديثة التي تتسم بالتطور التقني والمنافسة.

والشركات السعودية تواجه تحديات بيئية جديدة من أهمها انضمام المملكة إلي منظمة التجارة العالمية وإلغاء التعريفة الجمركية وتحرير الاستيراد من كافة القيود، مما يتيح دخول الشركات العالمية في منافسة مع الشركات المحلية. والواقع أن الشركات السعودية لازال الكثير منها يستخدم المنهج التقليدي في المحاسبة الإدارية رغم الكثير من الانتقادات الموجهة له، مما يترتب علي ذلك فقد الكثير من القدرة التنافسية وتناقص نصيب المنتجات المحلية من إجمالي السوق خاصة في ظل العولمة، وهذا يعني أن على الشركات السعودية إعادة النظر في هذا المنهج والبحث عن منهج جديد يلائم التطورات في التقنية الصناعية الحديثة.

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وتتحدد مشكلة البحث بصورة أدق في أن المحاسبة الإدارية التقليدية قد تكون قادرة على تلبية احتياجات الإدارة من معلومات البيئة الداخلية للمنشأة، فهل هي قادرة على تلبية احتياجات الإدارة عن البيئة الخارجية؟ بمعني آخر هل هي قادرة على توفير معلومات عن :

١- تطبيق الإدارة الإستراتيجية.

٢- التطورات التكنولوجية في مجال التصنيع والمعلومات.

٣- ضغوط المنافسة المحلية والعالمية

إن دراسة الباحث هذه تعتبر امتداداً للدراسات السابقة من حيث تأثير التقنيات الحديثة على المحاسبة الإدارية الإستراتيجية (إدارة التكلفة الإستراتيجية)، إلا أنها تختلف عن الدراسات السابقة من حيث اهتمامها بالآتي :

١- تعدد الأساليب المقترحة للمحاسبة الإدارية الإستراتيجية لإدارة التكلفة الإستراتيجية .

٢- تحليل الأساليب المقترحة للمحاسبة الإدارية الإستراتيجية لإدارة التكلفة الإستراتيجية) .

٣- تطبيق الأساليب المفترجة في الواقع السعودي على قطاع من أهم القطاعات التي تشهد منافسة حادة.

Summary:

A lot of technological developments have recently come out and manifested themselves in the production systems and the introductions to strategic management, to the extent that the success of any business has become associated with its ability to adapt to such developments. In order to achieve a competitive advantage in the local and international markets, any business entity has to implement such developments through the advancement of its production system. Despite the important role played by the Conventional Management Accounting systems, however, such systems have been characterized by relying on stereotyped products; a fact that requires advancing

these systems in order to be consistent with the modern business environment marked by the technological development and competition.

The Saudi companies are currently facing new environmental challenges. The Kingdom's accession to the World Trade Organization (WTO) and the abolition of the customs tariffs and the liberalization the import process of all restrictions, which would eventually result in the entry of international companies in competition with the local firms. In fact, many of the Saudi companies still apply the conventional methods of Management Accounting, despite the numerous criticisms addressed to it, which results in the loss of a great deal of competitiveness and the decline of the local products share of the local market size. This means that the Saudi companies have to reconsider such Management Accounting methods, and approaches and to look for a new one that is in harmony with the developments in modern industrial technology.

The research problem relates to inability of conventional Management Accounting to meet the requirements of management with regard to the information concerning the interior and exterior environment of the enterprise. In other words, the system is not capable to provide information on the following issues?

1- The application of strategic management.
2- The Technological developments in the domain of manufacturing and information.
3- The pressures of local and international competition.

First: Introduction:

No one denies the role and the changes that came about the techniques and methods and interests of the Management Accounting at the present time, especially in the shadow of the transition to a new philosophy of the business economics, backed by advanced production technology, where the shift started from the philosophy of the payment system to the philosophy of the draw system. In order that the productive system would be able to meet the needs of the new economic philosophy, the manufacturing systems had to acquire significant characteristics that were not available before. Such characteristics have eventually crystallized in the modern manufacturing systems or modern technologies.

These modern technological changes require initiation of substantial changes in Management Accounting systems to maintain the role of Management Accounting systems as a major source of information required by the management to meet the challenges of strategic competition.

1-2:The Research Problem:

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2- The Technological developments in the domain of manufacturing and information.
3- The pressures of local and international competition.

1-3: The Research objectives:

Given the stated above research problem, the objectives of this research are:

1– Identifying the variables imposed by the modern technological changes and their impact on the Management Accounting.

2- Highlighting the importance of strategic Management Accounting (Strategic Cost Management) as a starting point to improve the competitiveness in the global markets.

3– Assessing the ability of the modern methods of Management Accounting techniques to achieve the strategic Management Accounting (Strategic Cost Management).

4– Conducting an empirical study on the joint-stock companies operating in the Saudi cement sector to indicate the possible roles that could be played by modern Management Accounting techniques in achieving the strategic Management Accounting (Strategic Cost Management).

1-4: The Research hypotheses:

The Research is based on the following assumptions:

1– The application of conventional Management Accounting in modern manufacturing environment may produce misleading information that hinder the process of taking the proper decisions.

2- In modern manufacturing environment, many challenging issues must be addressed by Management Accounting.

3- The application of new techniques for Strategic Management Accounting "SMA" leads to development of alternative strategic objectives.

4- The new techniques for Strategic Management Accounting are important.

5– The existence of a correlation between the previous four hypotheses.

Second: Literature Review:

Over the last two decades of the 20th century, the accounting thought included a lot of studies and views that criticize the Conventional Management Accounting and call for application of Strategic Management Accounting (Kaplan, 1984:1988 - Johnson and Kaplan, 1987 - Bhimani and Bromwich, 1992 - Drury, 1992). Perhaps the early criticism of conventional Management Accounting practices was identified by Kaplan (1984, page 404) who argued "Management Accounting can no more exist as separate discipline, developing its own set of

procedures and measurement systems and applying theses universally to all firms without regard to the underling values, goals, and strategies of a particular firm ".

The Study of Murphy & Braund, (1990) surveyed 263 accountants, members of the Chartered Institute of Management Accountants (CIMA) about the impact of modern manufacturing technology on management accounting tools and techniques. The study concluded that modern manufacturing technology has led to increasing the importance of the role played by Management Accounting. However, this would require the development and advancement of the Management Accounting tools suitable to the modern manufacturing environment.

Kerremans, et al., (1991) studied the impact of the transition to advanced manufacturing systems on the structure of industrial costs and their benchmarking in a sample of Belgian industrial enterprises that amounted to ninety companies. An interview has been held between a number of companies that use advanced manufacturing technology, namely 39 companies, and a number of companies that use regular manufacturing technology, namely 51 companies. The study pointed out that the technological change has an impact on the cost structure and its content. The percentage of the direct work cost in the companies using advanced manufacturing technology was lower than their analogues using the regular manufacturing technology. In addition, many elements of indirect costs in the regular manufacturing system are considered as direct costs in the environment of advanced manufacturing system.

Kerremans, & Overloop (1995) studied the impact of the modern technological developments on the size of projects, operational processes, and organizational structure. The adoption of industrial economic units to such modern technologies has resulted in modern dynamic environment, development of production, and differences in the way of using the information. similar developments are required in the applicable cost systems, which lag to some extent from keeping pace with such new technologies.

Cooper (1996) study indicated that the company's success in maintaining its existence in competitive market depends on strengthening the role of Management Accounting in managing the activity cost. This could be achieved through the application of practical methods in the cost management systems such as activity cost, just in time and continuous improvement.

At the Arab level, the study of (Salah Bassiouny, 1994) pointed to the way to determine the components of cost under each level of technology in order to identify the general principles underlying the selection of appropriate technology in the developing countries. The study of (Ramadan Atiya, 1994) focused on the assessment of practices in the shadow of the high-tech manufacturing environment, which have become a feature of the New World Order. The study of (Saleh, 1996) dealt with the value chain as a concept derived from the cost Strategic Cost Management.

From the afore-mentioned literature, the researcher concludes that the research in the field of Management Accounting have criticized a lot of its aspects and proved that much of the produced information could be misleading, and that dependence on them may lead to inappropriate decisions, especially in the shadow of recent industrial developments. Most important of these criticisms is the inability of the Management Accounting to become connected with the strategic planning. Criticism to management accounting include (Kaplan, 1984:1988 - Johnson and Kaplan, 1987 - Bhimani and Bromwich, 1992 - Drury, 1992):

1- Focusing on the internal environment of the business, without paying attention to the external environment.

2- Lack of concern about the profitability of customers.

3- Non-use of modern methods and practices that have proved their effectiveness.

4– Negligence of submitting reports on the cost of quality.

5- Ignoring the cost position of the competitors.

6- Focusing on the financial standards without paying attention to the non-financial ones.

7– Negligence of the correlations between the activities.

8– Focusing on short-term decisions.

9– Defining the cost in the shadow of the available circumstances of the business, and not in the shadow of the conditions of fierce competition.

This criticism has raised considerable resonance, as Cravens and Guildin (2001) note that the recent past reflects something of Management Accounting renaissance. Revisions of Management Accounting practices have produced a variety of novel approaches in the field of costing strategic investment appraisal, strategic control and performance management. Paralleling developments at the level of individual accounting techniques the new term "Strategic Management Accounting" has emerged. Hoque (2001) sees the significance of "Strategic Management Accounting" (SMA) to be such as to view it as a whole new discipline.

Simmonds (1981, p. 12) was the first to use the term "Strategic Management Accounting" (SMA). He defined it as "the provision and analysis of Management Accounting data about a business and its competitors for use in developing and monitoring the business strategy". (p. 26) Simmonds highlighted the potential of Management Accounting playing a greater towards an externally - focused role for Management Accounting, at a time when academics and conventional practice exhibited a highly internally - focused orientation. While Strategic Management Accounting (SMA) is a term used by accounting academics and sometimes practitioners in the UK, Australia and New Zealand, in the US the term "Strategic Cost Management" (SCM) is more commonly used in the literature. Shank and Govindarajan (1994, p. xii) describes "Strategic Cost Management" (SCM) as "the blending of the financial analysis elements of themes from the strategic management literature-value analysis, strategic positioning analysis, and cost driver analysis. Clearly, this description of SCM has similarities with SMA processes. However, some would view Strategic Management Accounting (SMA) as broader than the "Strategic Cost Management" (SCM).

In the USA, Shank and Govindarajan (1988, 1992a, 1992b, 1994) commenced a stream of work that focused on what they termed "Strategic Cost Management". They analyzed the role that cost information plays according to four stages of strategic management and argued that effective cost management requires a broad focus that is external to the firm (Shank and Govindarajan, 1994).

The late Shank (2007) published a chapter in Contemporary Issues in Management Accounting (Bhimani, 2007) titled, "Strategic Cost Management: upsizing, downsizing, and right sizing" (Shank 2007). The chapter provides a fascinating and provocative account of the development of what he variously calls "Strategic Accounting" and "Strategic Cost Management", from the perspective of one of its earliest and longest-standing advocates.

While the SMA (SCM) literature has since grown (Rickwood et al, 1990; Wilson, 1991; Ward, 1992; Palmer, 1992; Clarke, 1995; Rayn, 1995; Roslender, 1995; Coad, 1996; Lord, 1996; Tomkins and Carr, 1996a, b; Smith, 1997; Dixon, 1998; Roslender, et al. 1998; Brouthers and Rooze, 1999; Szendi and Shum, 1999; Guliding et al, 2000; Cravens and Guliding, 2001; Hoque, 2001; Cadez, 2002; Tatles et al 2002; Roslender and Hurt 2003) there is still limited consensus on the exact meaning of the term "Strategic Management Accounting" or "Strategic Cost Management".

Roslender and Hurt (2003) presented ten case studies of companies and found there was limited evidence that SMA techniques, such as attribute costing, strategic cost analysis and Lifecycle costing were being used or understood by managers. However, in their pursuit of "Brand Management Accounting", they found that managers had a positive attitude towards the benefits of exploring closer relationships between Management Accounting and marketing. In some of cases, where was a high level of inter-functional cooperation.

Guilding et al (2000) were critical of progress of SMA stating that it has received little attention beyond the confine of conceptual consideration, thus, in their paper they identify a

range of SMA practices-attribute costing, brand value budgeting and monitoring competitor cost assessment , competitive position monitoring, competitor apparels based on published financial statement, life cycle costing, quality costing, strategic costing, strategic pricing, target costing and value chain costing. Interestingly, they found that there was vary limited familiarity with the term SMA, and the term SMA was virtually unused with the organizations surveyed.

In a recent review of origins and future of SCM, Andreson (2007) provides evidence of research in other displaces in laying the groundwork for understanding SMC, and seems ambivalent about the need for specifically trained accounting practitioners to reside in corporate accounting departments to use the narrow range of MA tools. Gosselin (2007) suggests that a successful implementation of ABC requires a multi-functional team, where accountants work closely with operation and marketing employees. Ansari et al (2007) presented a comprehensive review of more than 80 publication in English and 100 in Japanese that deal with target costing. These are mostly normative or technical paper, but also include case studies of Target Costing success, including those in the US automotive industry.

Some studies also indicated that the Strategic Cost Management (SCM) achieve the best results in industrial installations such as the furniture industry (Robert et al; 1997) and financial firms, such as banks, Robert et al; 1997 and George Bollnbacher, 1996, and the commercial businesses such as supermarkets.

Upon anglicizing the previous studies as a whole, their conclusion and findings can be summarized up as follows:

1- The environment of modern technologies is characterized by six trends, namely: Higher quality, less stock, more flexibility in production lines, higher degree of automation, the organization of the factory in the form of production lines, and the effective use of information and this requires a reconsideration of the methods of operation and control and the manner to determine the cost of production.

2- The cost system can be replaced by a database that provides the possibility of using multiple systems.

3- Focus on non-financial standards such as quality, control of raw materials, delivery to customers, commodity reserves, and performance of automated work.

4- The application of modern technological techniques must be accompanied by the use of new methods of Management Accounting to reflect the decreasing focus on direct wages and increasing focus on the additional costs and their methods of allocation.

5- To provide cost and administrative information that would benefit in the justification of using the modern production systems, and in which products and their positions in the market.

6- Changing the basis of competition and the trend points to the development of performance and advancement of products (quality - delivery - cost).

7- The increasing role of the management accountant in the management of the cost and this is achieved through scientific methods in the management of cost, such as the cost of activity.

8- To encourage the flow of information among accountants and other various administrative levels in an informal manner and in form other than the reports (information seminars on Quality).

9- Setting prices based on the value felt by the consumer (target price).

10- The cost-accounting systems based on standards of the volume of activity (hours of direct work - the number of units) may lead to substantial bias and shading in the cost estimates for the purposes of administrative decisions, and to depend on the causes of the cost associated with the nature of the operations would help the decision-maker in the fields of cost reduction , increasing the share of the business in the market, improving productivity in the shadow of a different production mix, and therefore the trend points to the cost of the activity.

From the aforementioned information, the researcher comes to the following conclusions:

- The emergence of modern technologies has exposed the failure of the conventional systems of Management Accounting, which prompted the researchers to try to study the ways and techniques to develop such systems as a starting point for Strategic Management Accounting (Strategic Cost Management) in light of the ever-growing development of the modern technologies.

- The results of the previous studies are considered as one of the most important goals and outcomes that must be pursued by the Strategic Management Accounting (Strategic Cost Management) through the methods on which it relies.

- The study of the researcher is considered as an extension of the previous studies, in terms of the impact of new technologies on the Strategic Management Accounting (Strategic Cost Management), but they differ from previous studies in terms of interest in the following items:

a- The multiplicity of the methods proposed for Strategic Management Accounting (Strategic Cost Management)

b- The analysis of the methods proposed for Strategic Management Accounting (Strategic Cost Management).

- The integration of the methods proposed for Strategic Management Accounting (Strategic Cost Management)

*- The application of the methods proposed on the actual true state of affairs in Saudi Arabia.

Third: What techniques comprise "Strategic Cost Management" (Strategic Management Accounting).

The Strategic Cost Management, or the Strategic Management Accounting are considered as an integral approach which contains a number of methods that act with each other with the aim of continuous improvement and support of the competitive advantage. The researcher views that there are many modern methods provided by Management Accounting to Strategic Management Accounting that manifested themselves

in 18 methods which appeared in the literature pertaining to the Strategic Management Accounting, and such methods could be summed up as follows:

Attribute costing, Benchmarking, Brand valuation, Competitive, Competitor cost assessment, Competitor performance appraisal, Customer profitability analysis, integrated performance measurement, Life cycle costing, Lifetime customers profitability analysis, Total Quality Management, Strategic coasting, Strategic pricing, Target Costing, Valuation of customers as assets, Value Chains Analysis, Just in Time and Activity Based Costing. For further details refer to (Andeson2007: Ansari et al 2007; Bhimani 2007; Roslender and Hart, 2003; Shank, 2007; Gosselin, 2007, Guilding et al 2000).

However, for the purposes of scientific research, the researcher will confine himself to the most important of these methods, in terms of their circulation, as follows:

1- Just-in-Time production (Just-In-Time) JIT.
2- The targeted cost (Target Cost) TC.
3- Value Chain Analysis (VCA).
4 - Total Quality Management (TQM).
5- Activity Based Costing (ABC).

Here below is an outline of these methods:

1) Just-in-Time production-(Just-In-Time) JIT:

Just-in-Time production-the concept and objectives: (For further information, refer to Surendra et al, 1998; Stoddaard and Rhea, 1985):

This method is based on the prompt delivery of the final products to the customers or agents and distributors at the same moment of sale, immediately upon completion of production, and to wind up with the groupings at the same moment when the complete product begins to take shape. It is also based on the completion of the manufacture of parts at the same time of the beginning of the sub-groupings, and the receipt of materials purchased at the same time of the process of transferring them into manufactured parts. Schonberger, (1988 p.16).

This method depends on three basic elements as explained by Khamis (1993, p. 1512), namely:

First: To get rid of activities which add no value to the product.

Second: To pay attention to the quality factor of the product.

Third: To bring about a relative reduction in total cost at the level of the plant.

In the view of Kaplan, the method of Just-in-Time (JIT) production was an expression of the rejection of two assumptions prevailing in the conventional production systems, namely:

First: That there is a need to achieve a degree of balance between the level of quality and the cost.

Second: That there is a need to achieve a degree of balance between the level of the stock and the cost.

* He replaced them with two other assumptions in the modern technology system, namely:

First: The existence of an inverse relationship between quality and the cost.

Second: The existence of a direct correlation between the level of stock and the cost.

According to Hopper the philosophy of the scientific application of Just-in-Time (JIT) production method is based on three principal axes as follows:

First Axis: That the cost of the additional time resulting from giving work to the employees on extra time basis in the event of the orders for Just-in-Time (JIT) production is less than the cost of keeping the stock in terms of the cost of rental, heating, cooling and depreciation of equipment and staff salaries and the cost of the accounting operations associated with it, and the cost of capital invested in the stock, when taking into account the economic dimension or the economic cost (explicit and implicit) for the cost of stock.

Second Axis: The cost of the surplus capacity (or idle capacity) as a consequence of the non-operation of the machines or workers if there are no orders on Just-in-Time basis, will be

less than the cost of maintaining and preserving the overall concept of the stock.

Third Axis: The cost of maintaining a production manner with a high efficiency that could be relied upon to fulfill the orders on Just-in-Time basis without delay and with a high level of quality will be less than the cost of maintaining and preserving the overall concept of the stock.

Both Kaplan and Anthony are of the opinion that there is a need to reduce the cycle of production to the least extent possible limit. The time cycle of the production cycle means the time required for manufacturing the product from the very beginning of production to the time of being ready for forwarding and sale.

The Japanese, who are pioneers in the application of this method, have created a form of the production time equation, as follows :

Production time = time that adds value + time that does not add value

The time that adds value reflects the actual time of operation in which certain process take place on the product in order to reach its final form. The time that does not add value to the product (which the Japanese call Wasted Time) covers the other periods of time, such as the waiting times, moving the product between the different processes, and the examination process.

(2) Target Cost (TC):

(For further details, refer Ansari et al 2007)

The Target Cost is one of the tools of Cost Management (Strategic Management Accounting) and it aims primarily at reducing the total cost of the product through all stages of its life cycle with the help of all sections of the Researches, Development, Engineering, Production, Marketing, and Accounting, until attaining the desired price - after the addition of the target profit target – which the consumer is prepared to pay for such product (Zaghloul, 1998). The Target Cost method is based on an analysis technique or value engineering which focuses on improving profitability through cost cutting.

The philosophy of the Target Cost is based on the understanding that the design of products does not take place in the light of the available industrial possibilities and techniques, with the aim of achieving the optimum use of such possibilities, rather the products to be designed are those products which will correspond to the price, and which would achieve an excellent success in the market.

Under the Target Cost, the pricing decision is considered as the most important point on which all efforts are focused to define, as the Target Cost reflects the target price target which the potential consumers would be willing to pay for the product, excluding the profits which the economic unit should achieve from the production and sale of the product. Brauasch, 1994 (36)

Upon the extrapolation of some studies, Kato, (1993), on the Target Cost, being one of the most important methods of the strategic cost management (Strategic Management Accounting), we can cite the following justifications and characteristics for the necessity and importance of the use of such method in the shadow of the sharp competition and the significant technological progress in the modern manufacturing environment.

1- The target cost is used in a large number of Japanese industries, and more than 80% of the basic companies of the assembly industries in Japan have become of the top competitors in the global markets as they depend on the target cost as a tool for cost management (Strategic Management Accounting - SMA), which is one of the best concepts for continuous improvement.

2- The cost management (Strategic Management Accounting) is based on cost planning and cost reduction and continuous improvement, through target cost, which means a shift from focusing on the cost management in the production stage to the planning stage in the life cycle of the product, and thus lead to significant opportunities for low-cost planning instead of the control during implementation process, especially

that once the product goes to the production stage the chances of cutting costs are reduced to a large extent.

3-The target cost method is used to control the specifications and design of the product and the production methods and thus it focuses on the administrative and engineering aspects of the cost.

4- The target cost method is suitable for multi-products establishments, with a small production capacity, more than multi-products of with a large production capacity per cycle.

5- The cost to adopt the target cost method requires the cooperation of many departments and sections within the establishment.

6- The target cost is determined through the following items:

(a) Fixing the targeted competitive price.
(b) Definition of a target profit margin.
(c) Definition of the cost that is allowable to be reduced.
(d) Definition of achievable current cost, based on the available technologies and industrial potentials.
(e) Set the target cost between the allowable cost and the achievable current cost.
(f) After reaching a total target cost figure, it would be allocated and distributed according to one of the following bases:
-On the basis of groups of the functions of the product.
-On the bases of groups of components of the product.

7– The return on sales is used to determine the target profit target and not the return on invested capital, due to the relative simplicity that distinguish the return on sales, in addition to the fact that it shows the profitability of each product in the case of multiple products, particularly in the shadow of the difficulty of calculating the return on the invested capital for each product in the case the economic unit produces a lot of products in small quantities.

8- Although the target cost method aims at reducing the cost in the first place, it ensures the quality of the product at the same time. Without a competitive cost, it would be impossible

for can any economic unit to plays an important role in the market due to the fact that the consumer at this age has a sophisticated sense.

9 - The target cost reflects the estimated cost of the product at the time of design and it could be attained, but with a reasonable effort, and the determination of the target cost following a review of every achievable current cost and are trying to reduce it to become so close to the allowable cost. The difference between the achievable and the target cost is avoided through the activities of analyzing or engineering the value.

3- The Value Chain Analysis (VCA):

(For more see Anderson, 2007)

This is a systematic method for looking at the series of activities performed by the establishment through which it would be possible to understand the current and potential sources of the advantage achieved by the establishment over its competitors. (Mustafa, 1996). It constantly focuses on the analysis of the functions of the product - the present and the futuristic – and the analysis of its particulars, and focusing on the core functions and the classification of alternatives to accomplish the basic function of the product at the lowest possible cost while maintaining the Customer satisfaction. (Lockyer et al, 1988).

On the other hand, it is an orderly evaluation of all aspects of the activities of Research and Development, Product Design, Production, Marketing, Customer Service, by improving the design of the product, and changing the specifications of raw materials, and amending the operating methods in order to satisfy the consumer and reduce the cost of the product (Zaghloul, 1998).

Horngren, et al. (2006), states that the application of the concept of value-engineering requires a distinction between: when the cost is specified and when the cost is updated, since most of the costs are specified in advance at the stage of design before they actually take place, and they are recognized and recorded by the accounting system, given that upon completion of the stage of designing the product, it would be difficult to

practice any influence on such pre-specified costs and therefore the reduction process of the cost depends on the knowledge of when and how to determine the cost in advance (Zaghloul, 1998).

4 – Total Quality Management (TQM):

(For further information refer to Surendra et al, 1998; Shank and Govindarajan 2004**)**

Many of the accounting writers noticed the existence of a correlation between the quality and Strategic Cost Management (Strategic Management Accounting), and that the accounting data can play a vital role in the management of quality if the accounting system has focused on strategic Management Accounting. Kaplan, (1983) pointed to the importance of measuring the cost of quality in the strategic Management Accounting systems when he described the accounting system adequate to support the international operations by saying: The challenge faced by the accountants today is to develop and innovate new accounting systems to support the new industrial strategy of the establishments and the advanced standards of quality and evaluation of the stock ... Innovation creativity will be an inevitable, necessary and needed issue.

Some people have considered that the high quality represent an essential trend and feature for the establishments that wish to join the category of international producers. They justified the reasons for focusing on quality with the high-quality products produced by foreign competitors, and the recognition that poor-quality products causing heavy cost and losses and the difficulties and problems facing the trend of cost management (Strategic Management Accounting) is that the accountants lack and need to diagnose and identify and study many non-financial topics in the industrial performance, and one of those non-financial issues is the quality. Howell and Soucy, (1983).

Atkinson et al,(1991) pointed to the importance of measuring the cost of quality in the shadow of the trend of cost management (Strategic Management Accounting - SMA) through what was discovered by the National Society of Accountants that companies that manage the quality and

measure its cost enjoy a competitive advantage. However, a few establishments recognize the existence of an association and correlation between quality and profitability, and that despite the existence of the importance and usefulness of the common non-financial standards of quality, such as the standard of the number of consumer complaints during the warranty period, the standard of the number of the low-level and defective units, and the standard of the rates of rejection, yet the cost of quality must be measured and assessed and should not be neglected and should be taken into consideration in the shadow of the trend of cost management, being a type of the financial data that must be provided by the cost management systems. The cost of quality is used as material evidence that the establishment performs the management of the activities of quality control. The management must evaluate in full care and awareness whether or not the efforts and investments to improve the quality result in sufficient returns, given that the statistical control of the decline of the rejection rates are not sufficient anymore to indicate whether or not the financial investments of quality bring about meaningful and sufficient returns.

The measuring and analysis and control of the product quality has enjoyed a great deal of attention in the literature of modern Cost Accounting and Management Accounting, and such trend has originated mainly from the intensive international pressures to improve quality of the product and to control its cost (Ismail, 1996).

At the present time, the cost of quality is considered as one of the fundamental costs, and according to Horngren et al; 1994, its value ranges from 15% to 20% of sales revenue, while Juran and Cryna 1988 view that the value may range between 20% to 40% of the sales, thus making the financial measurement of quality and the report on it beside the eye measurement and urgent request for the purposes of identifying the extent of customer satisfaction as well as identifying aspects of reducing the cost of quality; a matter that boosts the competitiveness of the product.

5– Activity Based Costing:

(For further information refer to Gosslding et al 2007)

The modern technologies have affected the indirect elements of the costs, as well as the methods of allocation, given that some of the methods of allocation that were previously in effect are no longer appropriate. The conventional methods in the domain of allocation of indirect costs are characterized by the conflict of remedies proposed to address the problem of allocation of such costs on the products. These methods face a lot of criticisms, including the following :(Saleh, 1996)

1- Lack of accuracy of the cost data of the products due to the absence of a causal relationship between the cost of the product and the resources used by the establishment.

2- The reliance on bases connected with the size of the production in order to burden the indirect costs on the products.

3- The inadequacy the conventional of methods of cost allocation for many of the industries using modern technologies.

The activity-based cost is a contemporary method that seeks to achieve a distinguished standard of accuracy in the calculation of the cost data through the analysis of activities within the business. It is an original new-fashioned method to measure and follow-up the cost, through the identification of the factors causative of the cost of activities, and the compilation of the related data and processing them in order to determine the cost of the product unit of each activity - Petty (1993). Such approach focuses on a more profound understanding of the behavior of costs and therefore identifies the causes of indirect costs. For that reason, the focus on the activities or events that cause the consumption of resources can lead to the rationalization of all costs (Mohammad, 1996).

The conditions of the modern environment of industry have led to encouraging the transfer to this method, as the industrial companies do not focus anymore on a limited number of products, or on one model of each product. Likewise, the human work is no longer the key element in the production process in addition to the fact that the intensity of competition between the

Industrial companies has incited such companies to seriously and deeply consider the right understanding of the structure of their costs, and that the use of such method leads to accurate allocation of indirect costs and hence to the accuracy of cost data, which represent one of the factors of achieving excellence and distinction for the establishment in the shadow of these circumstances (Mohammad, 1996, p. .439).

Fourth: The Field Study:

By carrying out the applied study, the researcher aims at achieving the objectives of the theoretical study and testing its hypotheses. The data of the applied study have been collected from their original sources by means of a “Questionaire” which the researcher depended in its design on the theoretical study. It was taken into, consideration that the sample would represent a developmental activity from the most important activities in the Kingdom as represented in the Cement Sector, where the Kingdom is witnessing a wide-scale constructional boom for those companies, and the products of such industry could have an export market that generates revenues to the country that supports its national economy. In light of this information, the “Questionaire” was re-drafted and the researcher settled on its format and content, as it became more clear and good for application on the community of the study.

4-1: the Research Population:

The Saudi joint-stock companies working in the cement sector, namely eight joint-stock companies as follows, (mentioned according to the date of their incorporation):

#	Name of the Company	Head Office	Date of Incorporation	Capital
1	Arabia Cement Co.	Jeddah	1/5/1955 AD	800.000000
2	Saudi Cement Co.	Dammam	23/11/1955 AD	1.020000000
3	Yamama Cement Co. Ltd	Riyadh	22/8/1961 AD	1.350000000
4	Yanbu Cement Co. Ltd	Jeddah	18/3/1976 AD	1.050000000
5	Qassim Cement Co.	Buraidah	11/8/1976 AD	450.000000
6	Southern Province Cement Co. (SPCC)	Abha	21/1/1978 AD	1.400000000
7	Eastern Province Cement Co. (EACCO)	Dammam	17/1/1983 AD	967.500000
8	Tabuk Cement Co.	Tabuk	20/7/1994 AD	900.000000

4-2: the Research Sample:

A random sample has been selected by the distribution of 4 forms to each of the eight companies that represent the research population, in order to cover different managements, which means that 32 forms were distributed and 22 forms were recovered which were good for statistical analysis, and they represent 67% of the research community.

4-3: Analysis of Data:

The researcher chose the descriptive analysis, which is based on data collection, presentation, and classification in the form of schedules, using the adequate analysis tools and methods, such as the percentages and the arithmetic average and the degree of importance. Hence the researcher conducted the Pearson coefficient test, and the Correlation Matrix test, in order to test the relations between the four hypotheses. The researcher has used 95% degree of confidence in testing the statistical hypotheses of the study, which means that the possibility of error equals 5%.

4-4: The Finding of the Applied Study:

The results of the study can be analyzed in the light of the results of the following research hypotheses:

1- That the conventional concerns of management accounting in the modern manufacturing environment may produce misleading information that hinder sound decision-making.

2- In the shadow of the modern manufacturing environment, there are many areas and concerns of great importance that must be addressed by the Management Accounting.

3- That the application of the proposed methods to manage the Strategic Management Accounting would lead to the achievement of a range of possible strategic objectives.

4- A great importance is attached to the methods proposed to achieve the Strategic Management Accounting (SMA).

5- There is a moral link between the four hypotheses.

First: the demographic characteristics of the members of the sample:

The Schedules from number (1) to number (5) show characteristics of the research sample units in terms jobs, age, nationality, and academic qualifications (academic level) and practical experience. It is clear from Schedule (1) that the vast majority (27.8%) are accounting managers, followed by (22.2%) financial affairs managers. Schedule (2) shows that the majority

of the surveyed persons are between 30 and 40 years of age, with a percentage of (50.6%), followed by those who are between 40 to 50 years with a percentage of 33.3%.

Schedule No. (1)
Distribution of the Study Sample
According to the current jobs

Job	Percentage
Financial Manager	22.2 %
Accounting Manager	27.8 %
Head of Budget Section	0.00 %
Official Financial Reports	5.6 %
Manager Financial Planning	11.1 %
Other Jobs	33.3 %
Total	100 %

Schedule number (3) points that the majority of participants are Saudis, with a percentage of 61.1%, while Schedule number (4) shows that 77.8% of the sample units are holding bachelor's degree in accounting, while the holders of degrees in Business Administration below university level, represent 11.1% of the sample. Schedule number (5) also shows that most of the sample units have more than 10 years of experience, while 44.4% of respondents have 10 - to 15 years of experience, followed by those whose experience is more than 15 years and over (27.8%)

Schedule No. (2)
Distribution of the Study Sample
According to Age

Age	Percentage
Less than 20 years	0.00 %
From 20 to less than 30	5.6 %
From 30 to less than 40	55.6 %
From 40 to less than 50	33.3 %
From 50 to less than 60	0.00 %
60 years & more	5.6 %
Total	100 %

Schedule No. (3)
Distribution of the Study Sample
According to Nationality

Nationality	Percentage
Saudi	61.1 %
Non-Saudi	38.9 %
Total	100 %

Schedule No. (4)
Distribution of the Study Sample
According to Academic Study (Academic Level)

Academic Level	Percentage
Below University Study	11.1 %
Bachelor of Accounting	77.8 %
Bachelor of Business Administration	0.00 %
Master Degree (or Doctorate) in Accounting	0.00 %
Master Degree (or Doctorate) in Business Administration	11.1 %
Others	0.00 %
Total	100 %

Schedule No. (5)
Distribution of the Study Sample According to Practical Experience (Years of Experience)

Years of Experience	Percentage
Less than 5 years	5.6 %
From 5 years to less than 10 years	22.2 %
From 10 years to less than 15 years	44.4 %
15 years and more	27.8 %
Total	100 %

In sum, the dominant feature of the individuals in the sample is that they are Saudi youth, holders of a bachelor's degree in accounting, with long experience, the occupants of the positions of accounts managers or financial managers. Thus, the sample represents the target group to conduct the research.

Second: Calculation of the stability and internal consistency of the research instrument used to collect data:

One of the important things that benefit the researcher in the domain of social researches is the codification of measurement instruments used to measure the variables discussed in his research, and we know that the stability means the accuracy or consistency of the measure. In other words, the measure would yield almost the same results if re-applied to the same sample. Honesty means that the measure would only measure what it was set up to measure, i.e. to measure the phenomenon to which it was set up, and nothing else.

As already explained above, our concept on the honesty and stability is a key issue which the researcher should take into consideration upon starting to collect data through the research

instrument (Spector, 1994). Many researchers have made it clear that honesty can be obtained by many ways such as the presentation of the research instrument to a group of specialists in the field and targeted persons of the research sample to get their impression and feedback about the research instrument, and to what extent it has achieved the goal of research (Sekaran, 1992 - Diamantopoulos and Schlegelmilch, 2000 - Churchill and Iacobucci, 2002). As to the concept of stability of test, it means that the test should be free from the non-systematic errors (Abu Sarie, 2004, 185). Churchill and Iacobucci (2002) have made it clear that the best way to assess the internal consistency of a set of factors or terms within the framework of one or a group is to look for these terms within their principal framework by using the coefficient Alpha Kronbach, which is considered as the most useful test for measuring the test stability.

The stability test was conducted to measure the consistency or the internal consistency of each of the four study groups, and contained the words in the “Questionaire”. Easterby-Smith et al (2002) have said that if Alpha coefficient reached the degree of 0.6, this is considered as an evidence that of the stability of the search instrument. Schedule number (6) shows the result of the Alpha test for each group of the four study groups, which didn’t get less than 0.6 degree, which demonstrates the stability of the search instrument and the existence of a considerable deal of internal consistency between the terms of each group.

We used the coefficient "Alpha Kronbach" for the calculation of the coefficient of stability, and we got the results shown in Schedule # (6):

Schedule # (6)
Stability Coefficients

Hypothetic Questions	Number of Terms	Alpha Kronbach
First	10	0.862
Second	10	0.833
Third	5	0.814
Fourth	15	0.910

We note that the value of Alpha Kronbach is greater than 0.6 and close to ONE for most axes, which means the stability of the four sections.

To study the degree of consistency of the terms for each hypothesis, we did the following to each one:

We'd take the first term of the hypothesis and delete it, and then calculate "Alpha Kronbach" for the rest of the terms of the hypothesis. If the value of "Alpha" after the deletion of the term is greater than the "Alpha" of the hypothesis as a whole, this means that the deletion of the term increases the value of "Alpha" and therefore such term should be deleted because it is not consistent with the other terms.

However, if the value of "Alpha", after the deletion of the tem is smaller than "Alpha" of the hypothesis as a whole, this means that the deletion of the terms decreases the value of "Alpha" and therefore such term should be maintained and be considered as an term consistent with the rest of the terms of the hypothesis. We should repeat the previous process for each term of the hypothesis, and keep in the questions the terms which are consistent with each other.

We have used this method, and got the following results after the deletion of some inconsistent terms or phrases. Refer to the Schedules from # (7) to the Schedule # (10)

Schedule # (7)

Terms of the First Hypothesis		Kronbach
1	That the Management Accounting focuses its attention on the compilation of data on the internal environment only.	0.852
2	That the Management Accounting performance is confined to performance measures used in it rather than the financial standards.	0.857
3	That the information provided will be focused on the short term.	0.846
5	That the conventional management accounting does not pay attention to the reports on the cost of quality or breaking it down to its components.	0.835
6	That in the conventional management accounting, no adequate attention is given to the cost of researches and promotion.	0.858
7	That in the conventional management accounting, no attention is given to the provision of after-sale services, and how to address them and treat their implications and consequences.	0.859
8	That the conventional management accounting focuses on the profit in the short term upon evaluating the performance of officials at the establishment.	0.829
9	That in the conventional management accounting monitoring the cost takes place after implementation.	0.839
11	That in the conventional management accounting, the overhead costs are allocated on the basis of the size of the activity or the hours of operation.	0.856
13	That in the conventional management accounting, no attention is given to the provision of information on the competitors, especially with regard to the cost.	0.850
	T O T A L	0.862

Since the values of Alpha Kronbach in the Schedule are smaller than the value of Alpha Kronbach for the hypothesis, this means that all terms in the hypothesis are consistent with each other.

Schedule # (8)

Terms of the Second Hypothesis		Kronbach
15	The change from the management confronted with technology, which aims at reducing the deviations between actual performance and standard in order to attain the best performance available, to the management confronted with the market which focuses on what should be done in order to attain the required level of performance in light of market conditions.	0.820
17	The change from focusing on the considerations of size in tolerating the additional costs, to focusing on the causes of costs.	0.819
18	The change from thinking to confront a limited static market with typical standard products that are produced in large quantities to meet the open door situation in the market and face the local as well as international competition with the diversity of products and quick response to the customers' requests.	0.809
19	The change from focusing on the internal environment only to focusing on both the internal and external environment of the business at the same time.	0.807
20	The change from focusing on the reduction of the inventory costs to focusing on the disposal of the stock itself.	0.833

21	The change from focusing on monitoring the cost after implementation to focusing on managing the cost before and during implementation.	0.807
22	The change from focusing on the partial cost and cost control to focusing on the total cost and cost reduction.	0.822
23	The change from using one set of internal financial standards to the diversification of standards according to the nature of performance, and using financial and non-financial measures, both internal and external.	0.833
24	The change from the management of the personnel by intimidation and control and directing their behavior and standardizing their performance and tracking their work and reporting them to managing Personnel through the arousal of interest and creating the motivation and incentive to implement the strategies and objectives while promoting the development and innovation, and working on teamwork basis and the sense of responsibility and self-monitoring and follow-up for the purposes of education and not for purpose of defamation.	0797
25	The change from thinking with the mentality of “it could not be better than what actually took place” to the thinking with the mentality of “there is always the better than what is good”.	0.802

T O T A L	0.833

Since the values of Alpha Kronbach inside the Schedule are smaller than the value of Alpha Kronbach, this means that all terms in the hypothesis are consistent with each other.

Schedule # (9)

Terms of the Third Hypothesis		Kronbach
26	Support and strengthen the strategic competitiveness of the business, and the search and pursuit to achieve a competitive advantage and to maintain continued growth.	0.805
27	Assistance in taking the strategic decisions.	0.778
28	Adoption and activation the containment of the advanced technical and technological techniques in design, planning, production, control and information.	0.767
29	Adoption and activation of the trends of development in the management culture: analyzing the activities, analyzing the time, reducing the duration of the cycle of composition of the product, overall quality, and the driving forces of innovation and creativity.	0.791
30	Study, analysis and taking advantage of the dynamics of competition.	0.741
	T O T A L	0.814

Since the values of Alpha Kronbach in the Schedule are smaller than the value of a thousand Kronbach, this means that all the terms within the hypothesis are consistent with each other.

Schedule # (10)

Terms of the Fourth Hypothesis		Kronbach
31	Information for the selection of the patterns of the alternative production competing technology.	0.906
33	Information on the suppliers: Their financial status, their precedents.	0.902
34	Information on the markets, customers and products.	0.902
35	Analytical information on the profitability of customer groups.	0.909
36	Information on new and innovative products.	0.909
37	Information on the variety of products.	0.907
39	Information on the chambers of commerce and trade unions.	0.902
40	Information on the identification of the source (purchase or production).	0.902
41	Information on the stock.	0.910
42	Information on the sale price and the degree of satisfaction of the customer.	0.910
43	Information on market share of the establishment vis-à-vis the competitors.	0.898
44	Information on waiting times, delivery, quality standards, analysis of the cost of quality.	0.903
45	Information on alternative products.	0.904
46	Information on alternative inputs.	0.899
47	Information on new technological additions and expansions.	0.904
	T O T A L	0.814

Since the values of Alpha Kronbach in the Schedule are smaller than the value of a thousand Kronbach, this means that all the terms within the hypothesis are consistent with each other.

Third: analysis of data to test hypotheses:

After making sure of the existence of a great deal of honesty and consistency in the research instrument, the researcher engaged in the data analysis by using the arithmetic average, as well as percentages, and the prevailing view. He did so by calculating the weighted average of the responses of the study sample to the terms contained in all questions of the hypothesis - in a form similar to a measure of the five-Eckart. The weighted average is used if the variable takes different values in terms of importance. Therefore, such importance must be taken into account by giving appropriate weight of each answer in proportion with its importance. Schedule # 11 was therefore given:

Schedule # (11)

Choice	Weight
Strongly Disagree	1
Do not agree	2
Do not agree to some extent	3
Agree	4
Strongly Agree	5

The purpose of this Schedule is to know the category to which the responses of the sample belong. According to the value of the weighted average of the sample answers the degree of the contribution or the prevailing view are defined, as shown in the following Schedule No. (12):

Schedule # (12)

Value of the Weighted Average	The Prevailing View
From 1 to less than 1.80	Strongly Disagree
From 1.80 to less than 2.60	Do not agree
From 2.60 to less than 3.40	Do not agree to some extent
From 3.40 to less than 4.20	Agree
From 4.20 to less than 5	Strongly Agree

To examine the importance of terms of the hypothesis, we classified the different responses in the following Schedules (from 13 to 16) and calculated the degree of significance and order according to their importance, and the findings will be discussed in the light of the following headings:

First: Analysis of the results of the first hypothesis: Her I am

(The application of conventional Management Accounting in modern manufacturing environment in the Saudi cement companies, may produce misleading information that hinder making proper decisions)

Schedule No. (13) represents the findings obtained by the researcher in the analysis of the responses with respect to terms of the hypothesis. The Schedule shows the order of importance and the prevailing view of the justifications for criticism directed at the conventional Management Accounting which the researcher presented in thirteen justifications from #(1) to #(13) in the list attached to the annexed of the research. The Schedule also shows that the overall prevailing view of all terms of the axis for the vast majority of the axis as a whole is "Agree to some extent," with a weighted arithmetic average of (3.09). This

indicates that members of the sample believe that the conventional Management Accounting currently performs the role assigned to it, and is quite sufficient for the local competition. The Schedule also shows that the most important justification is justification number one which states that the Management Accounting focuses on the compilation of data on the internal environment only, and least important justification is justification nine which states that, in the Management Accounting, the control of cost takes place after the implementation.

This confirms the invalidity of the first research hypothesis, which states that (the application of conventional Management Accounting in the environment of modern manufacturing in the Saudi cement companies may produce misleading information that hider the making of proper decisions.

Second: Analysis of second hypothesis (in modern manufacturing environment, many challenging issues must be addressed by the Management Accounting).

The following Schedule No. (14) represents the findings and results attained by the researcher from the analysis of the responses pertaining to this hypothesis. The Schedule shows the order of importance and the prevailing view of the new challenging issues that should be addressed by the Management Accounting in modern manufacturing environment The total number is ten issues from (15) to (25) in the list of the "Questionnaire" attached to research annex. The Schedule shows that the prevailing view for all terms of the axis for the vast majority of the axis as a whole is "approve" with a weighted arithmetic average of (4.13). This indicates that members of the sample have a conviction that in the modern manufacturing environment, the Management Accounting has new areas and concerns of great importance that must be addressed to Management Accounting. The Schedule also shows that the most important justifications are no justifications (19, 21), which provide for (a change from focusing only on the internal

environment to focusing on both internal and external environments, and the change from focusing on cost control after implementation to focusing on cost management before and during the implementation. The least important is the justification No. (20), which refers to the change from focusing on the minimization of inventory costs to focusing on the disposal of the stock itself.

This confirms the validity of the second research hypothesis, which states that in the modern manufacturing environment, there are many challenging issues that must be addressed by the Management Accounting.

Schedule # (13)


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Third: Analysis of the third hypothesis " the application of new techniques for Strategic Management Accounting "SMA" leads to development of alternative strategic objectives).

The following Schedule No. (15), represents the findings and results obtained by the researcher from the analysis of the responses with respect to this hypothesis. The Schedule shows the order of importance and the prevailing view of alternative objectives as the result of application of the new techniques for the Strategic Management Accounting (SMA). The total number is five objectives, from #(26) to #(30) in the list of the "Questionnaire" attached to research annex. The Schedule shows that the prevailing view for all terms of the axis for the vast majority of the axis as a whole is "strongly agree" with a weighted arithmetic average of (4.51). This indicates that members of the sample have a conviction that the application of the proposed techniques of the Strategic Management Accounting leads to development of alternative strategic objectives. The Schedule #(15) also shows that the most important objectives is the objective #(27) which provides for "the assistance in making the strategic decisions), and the least important are the objectives (29, 30), which refer to (the adoption and activation of the development trends in the management culture - analysis of activities - reduction the duration of the circuit of composing the product - the overall quality - the driving forces of innovation and creativity and study and analysis of the utilization of the driving forces of competition.

This confirms the validity of the third research hypothesis, which states that " **the application of new techniques for Strategic Management Accounting "SMA" leads to development of alternative strategic objectives**".


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Fourth: Analysis of the fourth hypothesis "The new techniques for Strategic Management Accounting are important.

The following Schedule No. (16), represents the findings and results obtained by the researcher from the analysis of the responses with respect to this hypothesis. The Schedule shows the order of importance and the prevailing new techniques for Strategic Management. The total number is (5) objectives, with the total number of (16) areas, from number 31 to number 47 in the list of the "Questionnaire" attached to research annex. The Schedule shows that the prevailing view for all terms of the axis for the vast majority of the axis as a whole is "strongly agree" with a weighted arithmetic average of (4.28). This indicates that members of the sample have a conviction about the importance of the techniques proposed for the achievement of the Strategic Management Accounting (SMA). Schedule no. 16 also shows that the most important statement is number 42 which emphasizes availability of information on the sale price and customer satisfaction, and the least important is statement number 39 which refers to availability of information on chambers of commerce and trade unions.

This confirms the validity of the fourth research hypothesis, which states that "The new techniques for Strategic Management Accounting are important".


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Fifth: the Correlation between the hypotheses:

After proving the hypotheses of the research, the researcher tried to examine whether there was a correlation between the four hypotheses, by using the Pearson correlation coefficient.

Schedule no. 17, shows the results of the correlation and the association and the level of moral side, as two figures appear in each box, the top number is the correlation coefficient, and the bottom number is the level of morale, and the negative sign means that correlation is adverse. If the level of morale is more than 0.05, it means that the correlation is weak, but if the level of the morale is 0.05 and less, it means that the correlation is indicative from the statistical point of view.

Schedule # (17)

Correlation coefficients between the axes and the level of moral side

Hypothesis	First	Second	Third
Second	0.035 0.891		
Third	0.121 0.633	0.642** 0.004	
Fourth	0.185 0.462	0.380 0.120	0.569* 0.014

* The correlation coefficient is spastically indicative at “0.05” moral level.

** The correlation coefficient is spastically indicative at “0.01” moral level.

Accordingly, the Schedule 17 refers to the following:

• There is no correlation between the first hypothesis and the second, third and fourth hypotheses.

• There is no correlation between the second hypothesis and the fourth hypothesis.

- There is a correlation between the second hypothesis, which states that "in the modern manufacturing environment there are many challenging issues that must be addressed by the Management Accounting", and the third hypothesis, which states that "the application of new techniques for Strategic Management Accounting "SMA" leads to development of alternative strategic objectives" .

(It is strong and statistically indicative at the level of 0.01).

-There is a correlation between the third hypothesis, which states "the application of new techniques for Strategic Management Accounting "SMA" leads to development of alternative strategic objectives" and the fourth hypothesis, which states that "new techniques for Strategic Management Accounting are important ". (It is strong and statistically indicative at the level of 0.05).

Fifth: Conclusion and Recommendations:

In this research, the researcher presented a synopsis about the production and management systems in the high-technology manufacturing environment, and then the researcher dealt with some previous studies that addressed the impact of modern technology on the Management Accounting. The researcher presented three alternative approaches for the application of Strategic Cost .

The researcher points to only 5 of new techniques which are most commonly applied in modern manufacturing environment. They are:

1- Just-In-Time (JIT)

2- Target Cost (TC)

3- Value Chain Analysis (VCA)

4- Total Quality Management (TQM)

5- Activity-based Costing (ABC)

The researcher also conducted a field study in some Saudi joint-stock companies working in the cement sector, to demonstrate the validity of the hypotheses of the research through the statistical analysis of the responses of the surveyed persons on the possible objectives and results from the application of the methods proposed for the strategic cost management (Strategic Management Accounting), and the researcher considered that proving the validity of the hypotheses represents the findings and results which he obtained through this research.

At the end of this research, the researcher presents the following recommendations:

(1) During the process of developing the costs systems, it is necessary to depend on the methods proposed for the strategic cost management (Strategic Management Accounting), including purchase and just-in-time production, the target costing, the analysis of value chain, the overall cost management, and the cost on the basis of activity, because of their prominent role in the different areas of development.

(2) The need to apply the methods proposed for the strategic cost management (Strategic Management Accounting) on actual state of affairs in Saudi Arabia, especially in the shadow of the modern technologies, with the existence of the products and production lines, and complex production processes and the increase of the additional costs and reduction of direct costs.

(3) To necessity to develop awareness among the accountants in general and the costs accountants in particular, with regard to the philosophy of the modern systems of production and management in order to be ready to develop the accounting systems and the cost systems to keep pace with the new and evolving changes.

(4) The continuation of studies in the field of cost management accounting (Strategic Management Accounting) in the shadow of the modern technologies, with a view to the continued development of costs systems, and upgrading the quality of the cost information for the purpose of planning, control and decision-making.

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