

The Role of Changes in Modern Industry Environment in the Development of New Techniques in the Field of Management Accounting - A Literature Review

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Abstract

Problem: The traditional management accounting methods are not capable any more to provide the requirements emerged from the subsequent changes in the modern industry environment, or to meet its needs of accounting information. So, it becomes necessary that management accounting copes with changes in the modern industry environment through developing the traditional methods or inventing new techniques that is in line with the changes in the environment of modern industry, and meets its requirements especially with regard to accounting information.

Purpose: This study aims to identify the role of changes in modern industry environment in developing new techniques in the field of costs accounting then to describe the extent of the contribution of the invented techniques to meet the requirements produced by the changes in the modern industry environment.

Approach/Method: the study focused on reviewing the available articles in academic journals and resources represented in university dissertations.

Findings: it was found that the traditional cost accounting systems with its methods and tools are no longer respond to changes in the modern industry environment, and no longer be able to fulfill the requirements created by modern industry environment. The changes have contributed greatly to the development of the methods in the field of cost accounting that has the ability to fulfill the requirements created by these changes

Conclusion: Management accounting has the foundations on which it could be developed naturally so as to keep up with the changes that occur in the surrounding systems, and has the ability to keep pace with developments posed by these changes and to deal with them efficiently. Changes in modern industry environment have contributed to the creation and development of techniques in a way that enables these techniques to respond to the requirements created by the changing environment.

1. Introduction

In the last period of the end of the twentieth century until our present time, there have been a series of substantial changes in the industrial environment that are characterized by complexity and instability, as the circumstances of competition have changed and the technology utilization has been increased while modern manufacturing systems have been emerged besides to the focus on customer needs, moreover these changes has imposed many requirements that the cost systems could not be able to meet (Blocher al., 2010). Since the traditional management systems have been designed in a stable manufacturing environment that is characterized by limited competition and traditional manufacturing systems whose products are typical with limited technology usage, these systems have suffered from many criticisms especially with regard to unsuitability with its outcomes of accounting information to face those changes (Al-Tikriti, 2007).

Kaplan (1984) surveyed the development of cost accounting and managerial control practices and assesses their relevance the nature of industrial competition in the 1980s. Johnson and Kaplan's in their book entitled " Relevance Lost: The Rise and Fall of Management Accounting" (1987) criticized the management accounting practices during the 1980s showing that modern corporations must work toward designing new management accounting systems that will assist managers more fully in their long-term planning. So several management accounting innovations have been developed across a range of industries and implemented internationally (Sharaf-Addin et al., 2014).

From natural development point of view which conform with the nature of management accounting that pursues the necessity of modern environment requirements, through developing and initiation of new techniques that could encapsulates these changes which is not dominant in the shadow of traditional systems designed to face specific circumstances that are no longer exist, so every variable of modern manufacturing environment has a role in developing these techniques in an amount that meets the needs imposed (Al-Janabi, 2011)

From this point the study seeks to find modern tools and methods that are conformable with the changes happened in the business environment, so it keeps the role of costs accounting as a main source for costs information that are needed by the strategic management of costs in a way that these tools and methods coincide

with the strategic orientation of the top management (Dwommor, 2012). The Literature review confirms the wide adoption of advanced cost and management accounting techniques by providing evidences of transforming traditional techniques into newly developed techniques.

1.1 Study problem

The accounting literature showed vastly (Kaplan, 1984), (Johnson and Kaplan, 1987), (Cokins, 2002), (Abdel-Kader & Luther, 2006), (Haider, et al., 2011), (Dwommor, 2012) and (Antonsen 2014) that the traditional management accounting methods are not capable any more to provide the requirements emerged from the subsequent changes in the modern industry environment, or to meet its needs of accounting information that is characterized by complexity, instability and uncertainty accompanied with increasing competition and modern technology application in manufacturing besides to response the needs of customers.

So, it becomes very necessary that management accounting copes with these changes through developing the traditional methods or inventing new techniques and methods that conform with the strategic orientation of the top management, since it is now considered by the accounting thought in the field of costs accounting that the new techniques produced is a natural development due to the changes in the environment of modern industry and meet its requirements especially with regard to accounting information.

From this perspective the problem of the study could be summarized specifically as the role of the changes in the modern industry environment to develop new methods and techniques in the field of cost accounting through which it is possible to meet the requirements produced by the modern industry environment.

1.2 Study hypotheses

- a. Traditional costs accounting systems are no longer able to meet the requirements imposed by the environment of modern industry.
- b. There is a role for changes in modern industry environment in inventing new techniques that coincide with the changes produced by modern industry environment that have the responsibility to meet the requirements of these changes.

1.3 Study Objectives

This study aims to identify the extent of suitability of the outcomes of the tools and means of traditional costs accounting in the field of managerial accounting to the requirements imposed by the changes in the modern industry environment, from the point of view of identifying the role of changes in modern industry environment to develop new techniques in the field of costs accounting then to describe the extent of the contribution of the invented techniques to meet the requirements produced by the changes in the modern industry environment.

In the light of these objectives, the study falls into two parts:

The first one is an attempt to identify the extent of the suitability of traditional costs accounting systems to the requirements imposed by the changes in the modern industry environment, the second part deals with identifying the role of changes in the modern industry environment in developing new techniques in the field of costs accounting that meet this purpose.

1.4 Study methodology

The study depends in testing its hypotheses on the inductive approach through descriptive method, by an extensive reading of the available articles in the academic journals and the resources represented in university dissertations.

2. Literature Review

2.1 Traditional cost accounting methods in light of the change in the modern industry environment

Controversy erupted in the early eighties of the last century about the extent of development in the field of managerial accounting, in terms of its ability to provide appropriate accounting information for administrative purposes, Kaplan has shown (Kaplan, 1984) his reservations about the lack of development in this field, where he pointed out that the information accounting began to lose its importance and is no longer appropriate for administrative purposes, and he stressed the need to follow modern accounting techniques that its features began to show during that period (Haider, et al., 2011).

This could be justified as the role of traditional managerial accounting at that time was limited to a narrow range represented in just the use of cost accounting for business management within the enterprise by focusing on the internal operating activities, while in the light of global competition environment, one should look at all the costs by focusing on the broad concept of cost management, which goes beyond the mere cost collection and preparation of reports to determine how to use resources efficiently (Jablan and Blagoje, 2012).

Al-Takriti (2007) proposed that the traditional systems has been designed to cope with circumstances that was focused on the problem of specialization of costs in the light of lowering the technological costs and the

raising of cost of information, but these circumstances have limited to much those systems are able to face the changes, in recent years the resulting problems due to traditional systems have been increased because of the great changes in the field of industry and technology development.

The most important aspects of the traditional costing systems may be listed as follows:

- 1) Paying attention to the internal environment in the light of limited competition.
- 2) The low level of technology in manufacturing and production.
- 3) The high cost of obtaining information.
- 4) Limited attention to needs of the customers.

Based on the foregoing discussion, one could review the reality of traditional cost accounting systems in light of changes in the environment of modern industry and its ability to cope with these changes, through several axes that represent the most important changes in the environment of modern industry, namely:

2.1.1 Increased competition

According to Kaplan (1984), the challenges in the competitive environment have led to the reexamination of traditional management control system. Numerous studies comment that the traditional cost control system involves inadequate mechanisms and techniques to provide a competitive management accounting information needed for decision making process (Sharaf-Addin et al., 2014).

Competition is increased and its range has been expanded in the world during the past 30 years, the global markets have become more sophisticated and extensive as a result of the reduction in many global limitations that restricted the global trade, the lower tariffs and restrictions on imports, in addition to many constraints hampering the movement of goods and services worldwide (Hoopwood, 2008).

With the widespread of competition, the importance of decisions about the added value of the client has been increased by focusing on their needs, which became one of the factors that must be met efficiently under imposed conditions that the market is limited by the price and not the product resulting in a reduction of the ability of companies to influence the price (Fahmi, 2009).

Such changes and associated reflections on the goal and scope of the management function demands expanding the analysis to include the all aspects of the industry. As a result of these developments, the administration has no longer need to appropriate information about the internal environment only, but it should be extended to the external environment, as well as to determine the position of competitors and the needs of customers in order to achieve a better competitive situation (Garrison, 2000).

So, the traditional cost accounting systems are no longer able to cope with the changes in the competitive environment; since it was focusing on the productive activities and neglecting other relevant elements of competition activities.

2.1.2 The use of technology in manufacturing

The need to use technology in the field of manufacturing as one of the most significant changes in modern industry environment emerged as a result of increased competition and to resolve all the problems related with those changes that have impacted all the surrounding industry systems including cost accounting systems the matter that makes it necessary to identify the suitability of traditional cost systems with the variables brought about by this development, particularly its impact on the quality of accounting information under traditional systems.

The computerized production integrated system is one of the systems that have emerged in this area, designed primarily to bring about a kind of integration between functions related to manufacturing within the plant environment and beyond, and thus bring about a kind of coordination through specialized programs run by the computer between functions related to manufacturing, production and sales (Jin, et al., 2012).

The change in the manufacturing environment when using technology has a clear impact on costs systems where the cost of direct action decreased as a result of cutting out the employment, in addition to reduction in inventory costs by reducing the quantities necessary for production and sales, as well as reducing costs associated with quality by reducing defects and waste and remanufacturing damaged parts (Rahul and kaler, 2013). Traditional cost accounting systems no longer have the tools and techniques to cope with these changes due to technology usage in manufacturing, which makes the output of these systems unsuitable for decision-making which lead to the development of new methods that contribute to produce information adaptive to these changes.

2.1.3 The response to the desires of the client

The recent trend towards freeing global trade and reduction of restrictions imposed, and the use of technology in manufacturing, which led to the diversity and multiplicity of products, as well as to the focus on the outcome of the creative revolution based on innovation, driven by unstable and constantly changing needs. Consequently satisfying the needs and the requirements of the customer necessitated immediate response via product design and diversifying its features and characteristics according to the client's request in order to achieve this it is essential to replace the traditional manufacturing systems with more flexible manufacturing systems, thus producing a range of products designed according to customer's request (Jones and Hill, 2008).

The use of flexible manufacturing systems caused an increase in capital expenditures and an increase in indirect costs, due to higher preparation costs and the costs of design and restructuring of production centers, high costs of maintenance, supervision and training, as well as other types of costs such as design costs and the development of computer systems and software (Al-Kashef, 2001).

Thus, to respond to the needs of the customers, it is essential to provide a cost accounting system capable of providing financial and non-financial information that is consistent with the rapid changes in customer tastes, in other words, information relating to the external environment and internal environment of the facility, such a requirement is not available in the traditional cost accounting systems on the basis that the scope of these systems do not include the variables of the surrounding environment of the facility, whether productive or competitive. In such circumstances, the work in intense competition emerges from the response to the constantly renewable needs of the customers, based mainly on the need to provide financial and non-financial information consistent with the rapid changes, while the traditional cost accounting systems are no longer accommodate such changes.

2.1.4 Information Technology

The changes in the modern industrial environment have been embodied in increased competition, rapid technology growth, and the trend towards responding to the needs of the customer, the matter that leads to drastic reduction in costs, resulting in a greater need for information related either to internal or external uses, it becomes known that the information provided by cost accounting systems should not necessarily be financial so as to help in the planning and supervision, guidance and decision-making, but the information provided should be extended in scope to include all the external environment variables.

Moghaddam, et al., (2012) say that many of the products are produced by specialized computers that control manufacturing machinery without being affected by labor. In many huge plants, the role of labor in the production process is limited to monitoring only, and the widespread use of programmable devices to a significant reduction in the running, recording and analysis costs of information.

Alves (2010) noticed that the impact of technology on costs will increase as long as the changes in manufacturing environment are present and continuous leading to a significant reduction in the required amount of direct work as the changes become greater, also the significant differences in products in terms of size the production batches and complexity of designs, in addition to the increase in total additional costs to the extent that there will no longer be a link between the additional costs and direct work.

We conclude by reviewing the previous four axes the followings:

- A. The shortcomings of traditional cost accounting systems is not considered a defect since it has been designed under somewhat stable business environment, therefore, its methods and tools were responding to that environment's variables to a large extent, so as to enable them to analyze cost data and to translate it into cost-information used in the planning control and decision-making.
- B. When the modern industry environment begins to change and the features of changes become more evident in terms of the increase in the intensity of competition and the use of technology and the emergence of manufacturing systems that respond to the changing customers' needs and the increasing importance of information technology, it was found the traditional cost systems methods and tools were no longer responding to the requirements created by those changes.
- C. changes in modern industry environment influenced the traditional cost accounting systems in terms of objectives which focuses on measuring actual costs and comparing it with the standard costs, and in terms of the range as it is only limited to the internal environment analysis, and orientation that concerns with the short-term operational factors and the nature of the information which was financial in first class while analysis tools were limited to measure the actual costs ignoring the conditions of competition.

2.2 The role of changes in modern industry environment in the development of modern technologies in the field of cost accounting

The modern manufacturing environment is dynamic and characterized by instability also dominated by a state of uncertainty, resulting in the emergence of many of the fundamental changes that are reflected in management accounting system, from this point management accounting seeks to develop methods and tools to cope with these changes, these changes have many reflections on all surrounding systems of the modern environment including cost accounting systems.

To indicate the role of changes in the modern manufacturing environment in the development and introduction of new technologies in the field of cost accounting, to accommodate the requirements imposed by these changes and to be consistent with them which calls for the most important new technologies that have emerged in the field of cost accounting with an indication of the role of each variable of modern industry environment addressed in the development and introduction of these technologies.

The role of changes in the environment of modern industry in the development and introduction of cost accounting techniques will be discussed as follows:

2.2.1 The role of competition in the development of modern technologies in the field of cost accounting

It is well-known that to stay in the competition, one should possess a competitive advantage that contributes to achieve profitability, and in turn, profitability depends on the value added to the product, price and the costs of creating that value, and as the price of the product linked to prices of competitors, attention turned towards reducing the cost of achieving a competitive advantage (Dwommor, 2012).

The conditions of competition that focuses on reducing costs to achieve competitive advantage were tackled by cost accounting, where the attention is directed towards a number of techniques, including Chain Value Analysis (CVA), Target Cost (TC), Activity-Based Costing (ABC), Back Flash Costing (BFC), the technique of Total Quality Management (TQM), just in time inventory system (JIT), continuous improvement, Kaizen Cost (KC) in addition to many of the techniques that have emerged in this area. Based on the literature reviewed, there is a consensus among academia and practitioners toward the need of developing a conceptual framework to describe the best practice of management accounting techniques. This can clearly be seen in the framework developed by IFAC (1998) explaining the four stages of management accounting evolution. The framework developed is to support the new management accounting techniques such as TQM, JIT, BSC, and TC so as to capture the technological development in business environment and to meet the global competitive challenges (Sharaf-Addin et al., 2014).

The competition element is considered among the changes in modern industry environment that has the most impact on the management accounting systems, in consideration of the widespread of the imposed requirements which require the response of costs systems, when reviewing the most modern techniques we find that they are related to the element of competition and searching in one or more of its aspects. To illustrate the role of competition - as one of the most significant changes in modern industry environment - in the creation and development of new techniques and methods in the field of cost accounting, it requires the need to search in the most important aspects of the element of competition, including the following:

a. Competitive Advantage

Competitive advantage is defined as the strengths of the organization that appears in resources, competencies and distinctive capabilities that allow their products to differentiate or the substantial reductions in costs compared to the organization's competitors and achieve profitability, by adding value to the customer and determining the price of the product (Jones and Hill, 2008).

In the absence of competition, the traditional cost systems were mainly focusing on reducing costs through production stage, and ignoring to a large extent the rest of the stages of study and development, design, marketing and customer service, which indicates that the scope of the analysis of activities is limited to the internal environment and ignores the surrounding external environment. Therefore Yang and Shang (2007) pointed that the conditions of competition require the need of expanding scope of the analysis of the costs so it is not enough to analyze the internal environment, but the external environment should be included in the scope of the analysis, trend like this will create the need for developing modern technology that is able to achieve this goal, therefore the back of the so-called value chain style was the chain analysis value Analysis (CVA). Saleh (2005) believes that the value chain is a group of connected value generating activities that begins of activities to get raw materials from suppliers and ends with the delivery of the final product to the customer, with an emphasis on activities that occur outside the facility, and given the facility as part of the value system begins of getting the raw materials and ending with the final consumer. Kelety (2006) concludes that the value chain analysis enhances achieving competitive advantage by:

- Analyzing Value Chain activities in order to identify the cost of these activities and to determine the current cost or the behavior of future resources as a basis for understanding how to achieve competitive advantage.
- Determining the relative importance of the activities according to their contribution to the total cost, and determining the value of each activity separately and comparing it with the value it adds to the total values of other activities.
- Comparing the costs of the current activities with the costs of previous periods as well as comparison with the costs of competitors within the same industry to determine the competitive strategy to be followed.

b. Competitive Price:

The modern manufacturing environment has many properties such as: intense competition, the multiplicity of customer needs and the multiplicity and diversity of products, the matter that enhance achieving survival and growth, and then continuity, therefore adoption price policies that are in line with those developments to be able to remain in the competition circuit.

Perhaps pricing based on market is one of the most modern entrances, being based on market study to determine the price, and then determine the cost in light of that price after specifying a certain profit margin that is desirable to achieve, this approach is the basis for the target cost approach (Al-Janabi, 2011). Hence there was a need to develop technology in line with the conditions that limit their ability to compete by price and are able

to compete by reducing costs; therefore the target cost (TC) approach was developed.

The approach of target cost (TC) which is based on a focus on the market price, and thus determine the cost through the market to develop products that meet the prices of customers and their requirements for quality, the concept of targeted cost can be expressed through the equation that indicates that the target cost is equal to the target price minus target profit, the market price and market profit in this equation are the variables determined by the competitors in the market, while the cost is a variable that can be controlled through the management of value chain activities (Faraj, 2006).

The researcher believes that the target cost method mainly based on the value chain analysis method, on the grounds that the latter enables to select all the activities in which they can reduce the cost of the product in order to determine the competitive price, this indicates that there are overlapping relationships between modern methods and techniques so that each of which depends on another within a certain range.

c. Cost Management Cost Management

The entrance of traditional management accounting was based on cost analysis and its use in achieving planning and control purposes and in decision-making, then management thought was evolved to refer to the cost management which is used to describe the decisions of managers in order to achieve consumer satisfaction by working continuously to reduce and control costs (Saleh, 2005).

So it is found that in competitive environment that limit the ability to determine product's price that is superior to competitors' prices, the alternative is a trend toward cost reduction, this requires the response of costs accounting systems to these changes through the development of techniques that enable them to manage the cost whereas the cost reduction cannot be achieved through one specific area, but should include reducing the costs of all fields.

In the area of development of new technology in the field of cost accounting, Al-Tikriti (2007) believes that the traditional cost systems designed in the light of the low-tech and high cost information, but as a result of the use of modern technology in the field of manufacturing, the problem of indirect costs allocated to the products has been emerged, where the cost of direct work represents a small percentage of the total cost of the product while the indirect costs have increased, therefore the traditional methods cannot be used in these developments, as a result, Activity-Based Costing (ABC) system has emerged.

Garrison (2000) believes that as a result of the increased costs and lower profits and the intensity of competition in the world, ways to collect more accurate data for decision-making have been looked for, and the result was the development of important tools: Just in Time (JIT) Inventory System, which paid more attention to the better management of costs associated with inventory. Al-Afeeri (2010) believes that the entrance of Just in Time (JIT) Inventory System is based on the quality control through the realization of time of starting operation, immediate purchase and scheduling of customized production, and work according to the principle of specialization in internal processes and activities of the production, which can control costing performance, by reducing accounting procedures in the light of modern manufacturing environment, which focuses on achieving a high level of quality and customer acquisition. Thus, (JIT) theoretically excludes the need for commodity stocks because the production does not happen unless you make sure in advance that it will be sold and this requires reliable suppliers and those who will provide raw materials with the required quality on time completely.

In the area of cost reduction the Japanese contributed to the development of continuous improvement technique known as Kaizen Cost (KC) which is based on continual improvements on the product that is reflected in the reduction of cost and improving product quality, Basile (2001) pointed that continuous improvement seeks to improve performance and quality and to reduce the cost to a minimum without compromising the quality of the product, thereby lowering the cost in the short term, in line with the life cycle of the product in order to meet the demands of customers and to achieve a competitive advantage leading to increased market share.

The researcher believes that through the review of new technologies, it seems that most of these deal directly with cost reduction or addresses this aspect indirectly, but there are many techniques that there no enough space to mention it all.

2.2.2 The role of the using technology in manufacturing to develop cost accounting techniques

The use of technology in the field of manufacturing refers to the logical organization of individual, engineering, production and sales functions in addition to the assisting functions by following one system of computerized coordination, through the use of advanced techniques in manufacturing and what follow it of advanced manufacturing technology, automation and computer aided design systems and numerical control machines with the help of integrated manufacturing by computer, in addition to flexible manufacturing systems followed by production flow in a flexible production lines, as well as Just in time production followed by purchase systems and planning resource requirements systems.

The use of techniques in the manufacturing has impacted costs systems through:

a. Change in the structure and behavior of costs:

The use of technology in manufacturing has led to significant changes in the structure and behavior of costs, the dominant trend tends toward loading fixed costs more than variable costs, since most industries have relied on

the use of computerized machinery, increased automation means increased investments in machinery, leading to increased depreciation premium or increase the burden of a long-term lease. On the other hand Rahul and Kaler (2013) believe that the use of technology in manufacturing has led to an increase in indirect costs more than direct costs and decreasing the cost of the human element, which has become a small percentage of the total manufacturing costs, thus diminished the importance of analyzing the cost components according to its traceability and its linkage to unit activity as direct or indirect costs, moreover increased indirect costs has resulted in the need to search for the foundations of loading not on the basis of unit of the product only, but also take into account the extent of the complexity of the production process and the extent of its contribution to the resource consumption.

Al-Janabi (2010) pointed that in order to meet modern industry environment requirements establishing the need for fundamental changes in the accounting systems, therefore the emerged activity based costing (ABC) method is based on a new costing philosophy that avoids the shortcomings of the traditional systems, and keep pace with the modern manufacturing environment and what requirements it imposed to improve the cost accounting to the desired level in light of developments and growing technologies.

Al-Tikriti (2007) believes that the system (ABC) has matured as a result of the great technological advances in production methods and as a result of questioning the accuracy of the results provided by the traditional systems for the calculation of production costs, in addition to the growing needs of economic departments for more accurate and detailed information, the increased accuracy comes in accordance with the (ABC) system to determine the product cost.

b. Commitment to a high level of quality:

Modern manufacturing systems contributed to achieve some kind of flexibility in the design and manufacturing of the product and reforming it according to the constantly changing desires of customers, as it allows the production of a wide range of products with a reduced manufacturing time, which is reflected directly on costs, and thus contributes to the high level of all aspects of the activity through implementation of the work correctly from the first time, and avoid rebooting, extravagance, loss and wastage.

Rahul and Kaler (2013) believe that the advanced manufacturing systems is one of the applications in the field of accounting techniques that helps in widening the application of the concept of just-in-time system (JIT), either in production or in storage, where it could exclude all the activities that do not lead to an increase in value-added of the product or service, in addition to the possibility of applying continuous improvement technique (KC) in all activities on the ground that modern manufacturing systems enable to a largely extent in determining these activities accurately and thus the possibility of improvement.

c. The emergence of modern manufacturing systems

The competition under the constantly changing environment is characterized by the emergence of the modern innovations that have led to an increase in the diversity and multiplicity of products in response to the changing desires of customers, such circumstances require the presence of flexible manufacturing systems whose specifications change in short term, so as to enable the introduction of new relevant specifications of products to fit with customer requirements.

Modern manufacturing systems use technology in the manufacturing processes through an integrated system of machines that rely on advanced technology, equipment and specialized computer programs, which positively contribute to the management of the manufacturing process beginning from the study and development stage then design and production with high efficiency and the ability to develop and redesign customized products (Blocher, et al., 2010).

The importance of modern manufacturing systems is represented in its contribution to support the competitive advantage of the organization that it seeks to achieve, through the achievement of excellence in the manufacturing process and flexibility in the production process, as well as achieving quality in production with the possibility of re-design of the product and reduce labor costs, and the most advanced manufacturing systems that have emerged in this area include: automated manufacturing systems, flexible manufacturing systems and just in time production systems.

2.2.3 The role of responding to customer's desires in developing cost accounting techniques

Achieving competitive advantage in the current manufacturing environment is linked to the extent of the speed of response to the needs of the customer, and by adding value attached to the product appreciated by the customer that enable to increase the price by amount of the value added with the pursuit of reducing costs, and the way that the organization can deviate profitability by the difference between the price and cost and therefore the response to the needs of customers in many industries is the main motivation in product development, where the amount is based respond to these needs as follows (Teese, 2010):

- a. Constant quest to add value of the client to meet the changing desires and constantly renewed seeks to increase the volumes of production and the diversity and multiplicity of products.
- b. Creative revolution based on continuous innovation through the addition of new features and attributes resulting in a change in the nature of competition in the industry.

The researcher believes that the development of manufacturing systems requires the need to develop cost accounting through the development of new techniques that increase the ability to respond to these desires so that the value chain analysis technique is the foundation to achieve this goal, as it includes the analysis of the external environment of suppliers, competitors and customers. On the other hand, the added value through continuous development and study and continuity to update the product design contributes greatly to meet the changing desires of the clients, which requires the necessity of costs management of this value through continuous improvement technique (KC) and technical target cost (TC) in addition to many of the techniques that are concerned with costs reduction.

2.2.4 The role of information technology in the development of cost accounting techniques

In constantly changing modern business environment dominated by a state of uncertainty, one of the most important goals of the organization is the seeking to achieve competitive advantage that requires a number of ingredients such as the use of communication means and the use of information technology, which enables the flow of information on the different levels within the organization itself and with the external environment. Gustavo (2003) believes that the use of information technology requires consideration of the concept of information management through regulating it in a way that facilitates its update and retrieval and to ensure its transition and storage in order to strengthen the decisions, in addition to managing information by ensuring the flow or transition between targeted activities efficiently by providing the possibility of performing multiple analyses for various activities that are useful in decision-making (Pakizeh et al., 2013).

Blocher and Cokins (2010) pointed to the extent of the contribution of information technology in the development of cost accounting systems by improving the ability to coordinate and control activities leading to an improved level of managerial decisions, value chain analysis technique (CVA) could be considered as a tool to design programs that ensures the flow of information through the analysis of all activities included in the value chain.

3. Finding:

Through the review of the most significant changes in modern industry environment and its reflection on the management accounting systems, it was found that:

1. The traditional cost accounting systems with its methods and tools are no longer respond to these changes and are no longer able to fulfill the requirements created by modern industry environment. This proves the first hypothesis, which states: "The traditional cost accounting systems are no longer able to meet the requirements imposed by the changes in modern industry environment."
2. The changes in modern industry environment have contributed greatly to the development of the methods in the field of cost accounting that has the ability to fulfill the requirements created by these changes, and this is what validates the second hypothesis of the study which states that " There is a role for changes in modern industry environment in inventing new techniques that coincide with the changes produced by modern industry environment that have the responsibility to meet the requirements of these changes."

4. Conclusions and recommendations:

4.1 Conclusions

1. The traditional management accounting systems have been designed under conditions no longer exist at the moment, so the output of accounting information is no longer fit with the changes in modern industry environment and is no longer meet their needs.
2. Management accounting has the foundations on which it could be developed naturally so as to keep up with the changes that occur in the surrounding systems, and has the ability to keep pace with developments posed by these changes and deal with them efficiently.
3. Changes in modern industry environment contributed to the creation and development of techniques and methods in the field of management accounting in a way that enables these techniques to respond to the new requirements.
4. Modern technologies in the field of cost accounting have become able to meet the requirements created by the changes in the modern manufacturing environment and meet the needs so that it can apply an integrated approach of these techniques.

4.2 Recommendations

1. It is necessary to design cost accounting systems in a way that is consistent with the circumstances and changes, through the development of existing methods or the development of new techniques that enable it to cope with the changes occurring in the environment.
2. Applying modern technologies that are appropriate with the reality of modern industry plus applying value chain and target cost analyses.
3. Expanding the analysis to include the external environment from global suppliers, customers and competitors

as well as internal environmental analysis through the fundamental interest of all activities that occur within the organization in a balanced manner.

5. Focusing on the element of competition as one of the most significant changes in modern industry environment by responding to customer preferences and choose the right strategy that achieves the competitive advantage.

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