



THE ROLE OF QUALITY COSTS IN IMPROVING PRODUCTS AND ACHIEVING COMPETITIVE ADVANTAGES

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Article history:	Abstract:
Received: 2 nd January 2022 Accepted: 2 nd February 2022 Published: 7 th March 2022	The measurement and presence of quality costs and disclosure in statements and financial reports is an important aspect of economic units because they can make appropriate decisions to improve product quality and development and identify the services provided by products. The research aims to identify quality costs and how they are measured and what their role is to improve product performance and what competitive advantages can be achieved by economic units as a result of their attention and disclosure in financial reports and financial statements. To acquire many competitive advantages, including reduced costs and product quality and increased demand for products, and reflect a positive image on the work of economic unity and the efficiency of its performance and the satisfaction of customers and employees, as well as other competitive advantages that can be achieved. The Iraqi dairy company by identifying how to manage and measure and disclose these costs. The Iraqi dairy company is one of the most important industries to be linked to the lives of future in the future and do not care about quality costs as required and does not disclose them in its financial statements and this makes it difficult for the company to continue In its work and the disappearance of future market share.

Keywords:

INTRODUCTION

Under the great and rapidism in all countries of the world, economic units have become generally industrial and in particular, they must develop their products and provide them with the relative level of quality and efficiency. Not at the desired level of quality leaves significant effects on the environment and society through what these products are generated by large materials and losses and losses, as well as weak performance and this affects customers reflecting a negative picture of their products, leading to the loss of economic unity sales and market share as well as their reputation and competitive center Inside the market, because demand for economic unit products depends on the satisfaction of customers on product quality, at present customers have become so purchased from the products but they are viewing how these products are produced and what is the size of economic, environmental and social risks that can be The product is generated during its fully stages, so the quality costs and give them great importance for being foundation in the profitability of unity Economic or loss, which must be determined and measured quality costs as required, it will be addressed to quality costs in accordance with the following paragraphs.

First: Gaining competitive advantages and developing product performance through quality costs

First: the emergence of quality costs, their concept and their definition:

Dale & Plunkett, 1991:8) believes that it was the Americans of the 1960s who defined the first concept of quality costs, but at the same time differed views on what costs could be related to the quality of products, as it was most agreed that quality costs included inspection costs, product maintenance and repair costs, and thus interest in Western Europe in other countries. In 1967, the American Quality Control Association (ASQC) published the concept of quality costs with a special book, which was introduced in 1970 and completed and issued in 1974 if it includes the concept and definition of quality costs and what costs can affect the quality of the product, and then this topic took its importance and issued many books and articles on this concept (Dale & Plunkett), 1991:8)

See (Anta & Cuc, 2008:1881) there are two types of product quality:

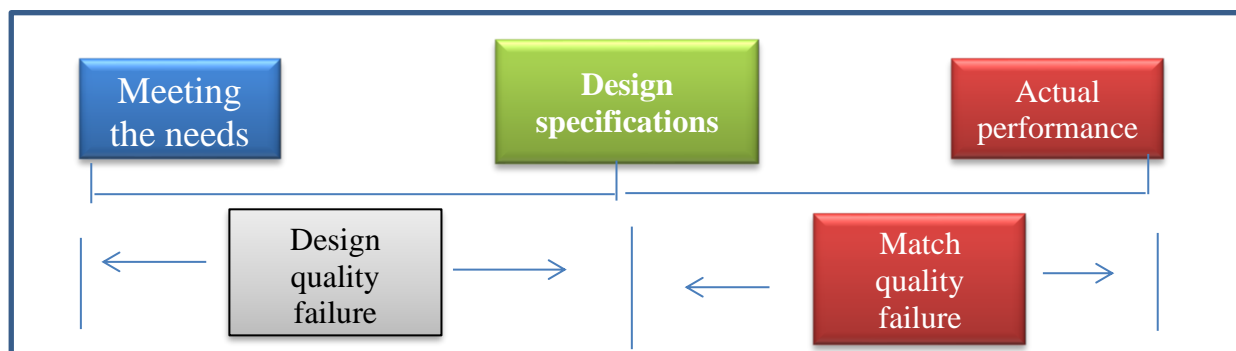
1. Design quality: This aspect relates to the differences in the quality of products that perform the same function for customers due to different design specifications, such as the type and quality of materials

used in the product and whether it can be recycled, disassembled or repaired in the future.

2. Quality of conformity: This aspect relates to how the product was manufactured, i.e. the extent of the commitment to manufacture the product according to the design planned by the unit and here a product of reduced quality may be manufactured as a result of the mismatch between the design and manufacturing requirements of the product.

This is confirmed (Horngren et al., 2012: 672) as the quality focuses on the design aspect which is the design of products that achieve and satisfy the needs and desires of customers, while the second side focuses on the quality of conformity as this aspect is the performance of the product or service in order to match the design and specifications provided, it has figure 2 explains this

Figure (2)
 Design quality and matching quality



Source: Horngren, Charles T., Srikant M. Datar, and Madhav V. Rajan , (2012), Cost Accounting a Managerial Emphasis, p(672).

From form (2) it is clear that the quality of design and conformity is clearly reflected in the design specifications of the products, the satisfaction of customers and the satisfaction of their needs depends on the provision of products characterized by high and distinctive actual performance, so if the quality of the design and the quality of conformity fails will affect the design specifications and this in turn will lead to poor actual performance of the products which reflects on the dissatisfaction of customers.

Attention to the concept of quality costs is important for reducing losses within the business system, and enhancing the capacity to control and control costs related to all valuable activities within development processes, as well as to control and improve visible and hidden costs during production processes (Brad et al,2006:53). (Taylor & Mastersonan,1996:72) Mastersonan considers attention to quality costs, analysis and evaluation to help improve product quality as well as contribute to improving the proper planning and implementation of product manufacturing, as well as its role in reducing costs spent on production processes.

(Neyestani, 2017:32) believes that quality costs at present are important tools in the process of measurement, control and decision-making of the economic unity process, as it is possible to achieve business excellence because if these costs are not

applied and attention is not paid to these costs make about 90% of the quality costs hidden difficult to control, but if this concept is applied it makes (100%) quality costs clear and manageable and addressed, This will thus enable the strengthening of market share, competitive position, product improvement and cost reduction and reflect a positive image of customers about the operations and activities of the economic unit.

Genichi Taguchi has also developed many engineering and statistical methods that have been reflected in many rapid improvements in cost and quality through improved product designs as well as manufacturing processes. Taguchi methods are a philosophy and many of the tools used to implement this philosophy, and taguchi palati philosophy can be expressed briefly (Wood, 2012:12):

1. Costs cannot be reduced without affecting quality.
2. Quality can be developed and improved without increasing costs.
3. Cost reduction can be achieved by improving and developing the quality of products and processes.
4. Costs can be reduced by reducing and preventing differences (i.e. preventing any mistake that occurs between what the customer is asking for and what is manufactured by the economic unit).

Accordingly, the researchers note that taguchi philosophy illustrates the importance of quality and its main role in reducing costs through this philosophy, it is clear that the increase in quality is not necessarily accompanied by an increase in costs, meaning that high



quality products do not necessarily have high costs as well as low quality products that do not necessarily have low costs.

Quality costs are a concept that has achieved significant developments in the business environment through improvement (leadership, strategic policy, human resources management, production processes, currency satisfaction, employee satisfaction, and community satisfaction, as well as the role of quality costs in achieving many positive aspects, most notably: (Brad et al, 2006:53)

1. Develop a comprehensive approach through which product quality costs can be controlled.
2. Identify and control hidden quality costs.
3. Identify and reduce exaggerated quality costs.
4. Enables effective software that can control product quality cost management.

Many writers and researchers have therefore developed numerous definitions of quality costs, a number of which can be explained by schedule 1 of my agencies:

Table No. (1)
Quality cost tariffs

to	Definition	source
1	Losses resulting from the difference between actual products and ideal products.	(Giakatis et al. 2010:183)
2	The costs of activities associated with prevention, processing and repair of poor products as well as the cost of production and sales lost as a result of poor quality.	(Blocher et al, 2010:759)
3	Are the costs associated with the success or failure of the product or service provided by the economic unit that enables to improve the quality and quality of products provided to customers.	(Rosiawan et al.,2018:555)
4	All the costs incurred by the economic unit to prevent errors and defects, or it's all the costs that occur as a result of defects in the products and do not match what is planned.	(Garrison et al. 2018:57)
5	Are those costs resulting from the production, processing, repair and avoidance of defective products	(Reda & Kanan, 2018:27)

Source: Prepared by the researchers based on the sources in the table.

Brad et al. believes that attention to quality costs and control during the operations of the economic unit needs to coordinate and link many electronic programs and systems in order to develop the operations of the economic unit and improve its performance and to reflect a picture of the performance of employees and their work during the activities of the entire economic unit, requiring that these programs contain the following: (Brad et al. 2006:54).

1. A detailed record of quality cost elements.
2. Divide quality costs into specific codes within the accounting system applied by the economic unit.
3. Make a comprehensive recording of all quality costs, as well as record costs related to processors and customers.

Second: Elements of quality costs

The elements of quality costs when this concept emerged were divided into three elements: the costs of prevention evaluation and failure, which is still agreed upon by many writers and researchers (Dale & Plunkett, 1991:25), that the cost elements of quality are functions, tasks or detailed expenditures that, when

properly integrated, constitute quality cost categories, for example quality planning is the element of prevention, inspection during the process, evaluation element, reformulation of the element of internal failure, Products returned from customers are the costs of external failure, despite global trends using elements of cost costing quality, but these elements of quality costs vary from industry to industry, for example, elements of quality cost in the healthcare sector vary greatly from those in manufacturing as well as different from quality costs in banking operations, and However, it is expected that the attempt will be made to prepare standardized lists of quality costs for each industry or activity (Wood, 2013: 35). However, most writers and researchers agreed to classify the elements of quality costs into four elements (prevention costs, evaluation costs, internal failure costs, and failure costs for outsiders), so these costs can be clarified as follows:

1. **Prevention costs:** These expenses related to design and manufacturing costs geared towards preventing errors during operations and defect prevention costs , the costs of manufacturing products that do not match the specifications as well as include quality planning costs, inventory and



review costs of new products, planning process costs, and quality audit costs in products (Neyestani, 2017:35).

2. **Evaluation costs:** Are the result of measuring, evaluating and reviewing materials involved in production processes in order to manufacture products according to the required specifications, as well as the costs of evaluating products and determining their status and extent of conformity with the planned specifications of the product, as well as include inspection and testing costs, as well as the costs of evaluating and inspecting equipment, instruments and equipment used in production processes (Reda & Kanan, 2018:29)
3. **Internal failure costs:** Costs arising within the economic unit due to lack of development of products or defects caused by the failure to deliver and manufacture the product according to the required quality, such as scrap costs, product damage costs, as well as the costs of repairing or disposing of products, redesigning or tyranny (Giakatis et al., 2010:179).
4. **Costs of external failure:** These costs occur as a result of the failure of products or services that reach customers due to the poor quality of the design and the non-conformity of the required specifications specified according to the standards within the economic unit, these costs are costs of failure out because the product does not conform to specifications is not detected during the production processes after the return and customer dissatisfaction with that product (Tsai, 1998:721)

Third: Identify competitive advantages that can be gained based on quality costs

The concept of competitive advantages emerged in the 1950s as Alderson clubed in 1957, requiring each economic unit to stay in the competition environment for as long as possible by relying on a competitive advantage that can distinguish it from competitors and help it stay in the competition environment for as long as possible and enable it to meet the needs and desires of customers under restrictions and limitations that threaten the survival of units in the business environment (Golobic & Flint, 2009:844).

Porter also believes that the concept of competitive advantage is the main goal that economic units have long sought, as this goal can be achieved through different means and methods, as economic units can achieve a competitive advantage through innovation, change and improvement, and this is what Sony did when it invented the raden, and when sandvik By creating new methods, activities and methods for

mining, ka may achieve a competitive advantage by developing and improving the processing chain completely and this is what Italian companies did when they created and created new ways in the design of clothing through the development of the first episode of the processing chain, namely design, while other companies believe that achieving competitive advantage can be achieved through continuous improvement and this is what Japanese companies have done, There are also many ways in which competitive advantages can be gained (Porter, 1998:611-613).

(Mahdi et al., 2018:4) sees the concept of competitive advantages as implementing certain techniques and methods that help to use materials in the best possible way, by obtaining economic value that exceeds the usual value of achieving them, or by achieving a competitive advantage by maintaining customers, and other methods and activities that enable a sustainable competitive advantage. (Braslina et ai., 2014:35) sees competitive advantages as advantages that can be gained in different ways and means by more resources and more production in the same industry and in the same markets or when the economic unit offers the same benefits compared to competitors at a lower cost. (Lie & Pitts, 1996: 55) is to exploit economic unity to its internal strengths by creating value that competitors cannot achieve with the least effort, time and cost for the purpose of enabling the economic unit to distinguish and outperform competition for as long as possible.

There are therefore many competitive advantages that can be achieved by economic unity, the most important of which are:

Cost: Are the costs borne by the economic unit, which enables it to obtain products, such as the costs of obtaining raw materials, design, manufacturing, marketing, advertising, manpower and other costs, as the economic unit works to acquire this mezze by obtaining the delivery of products at the lowest possible cost, for the purpose of excellence over competitors, by offering products at low prices, This increases customer demand for products, which will enhance the share of the economic unit in the market (Al-Awawdeh & Al-Sharairi, 2012:126).

Quality: This is a set of important product-related characteristics that are determined at the functional design stage, including aesthetics aimed at entertaining the customer and urging him to buy, repeat and offer products that can be repaired and recycled and can be divided into the concept of quality into the next dimensions (Horngren et al., 2012: 693):

- Design quality
- Matching quality



- Quality of service

There are also many competitive advantages that can be achieved, including flexibility that helps to deliver products easier and can be used easily, as well as competitive advantages is the advantage of time through which products can be delivered faster to customers and presented when demanded and other advantages.

Competitive advantages can also be achieved by relying on two first strategies called Overall Cost Leadership, an offensive strategy that seeks to make decisions, including reducing costs, driving expenses or reducing promotion costs by changing the means by which products can be offered at a lower cost, and another strategy called differentiation. Decisions can be made that enable the economic unit to achieve excellence in product delivery, including providing products that can be used easily, offering products free of ingredients and materials that harm customers, or offering products that can be disassembled or recycled (Porter, 2008: 35-38).

In light of the above, it is clear that quality costs are of great importance in improving the performance of the economic unit by providing products with a distinctive level of quality that can be used for a long time and easy to use and can be maintained or repaired easily because quality costs work to address the defects in products from maintenance to reach customers, and quality costs will enable the realization of many competitive advantages of the economic unit mentioned.

The second topic: the practical aspect

The company was headed to the General Company for Dairy Products, which is a subsidiary of the Iraqi Ministry of Industry and Minerals, where the company established a capital of (227,000,000) Iraqi dinars, the company is located in the capital Baghdad, in the district of Abu Ghraib and has an area of (450) dunma, There are currently (4) factories operating in the company, as it turns out that the company does not care about quality costs appropriately and should pay more attention to these costs, which will be explained as follows:

1. **Evaluation costs:** The following include :

- **Design costs:** It turns out that the company does not put any costs for product design and this is a negative negative on the economic unit so it is now that the design costs are important costs that require attention as it is the first episode of the series of green trouid, as most writers and researchers confirmed that the percentage (80%) is determined in the stage of product design.
- **The costs of manufacturing products that do not match the specifications:** it also became

clear that the company does not pay any attention to these costs as the costs of failed production in 2016 amounted to about (476,853,090) and in a year if the quantities produced increase the costs of failed production will increase and this will cause significant losses in the future on the company so these costs must be taken care of in order to reduce the costs of damaged production and reduce the losses incurred by the economic unit.

- **Quality planning costs:** It became clear that no amounts were allocated to quality planning costs in the entire plant operations and these costs are not disclosed in the financial statements, so it became clear that the water inside the company, which is the main aspect of the manufacture of products, amounted to (7000) cubic meters 70% withdrawn to production processes (integration with the product, evaporation, use, discharge) representing (4900) cubic meters while these water does not conform to the standard specifications set by the World Health and Safety Organization (10%) The deviation was calculated on the company by not matching the specifications for actual water with the standard specifications such as $4,900 * 10\% = (490)$ as the economic unit imposed by the Kyoto Protocol was fined 1,294 euros for each cubic meter of contaminated water inside. This means that the company will incur a fine of 490 cubic meters * 1,294 euros = (634,060) euros and then the company will bear the fine of 634,060 euros * 1,663.30 JD = 105,4631,998 Iraqi dinars, and there are many costs incurred by the economic unit due to its lack of interest in the costs of quality planning, including lack of planning for the quality of manufacturing, design, transportation, promotion and other costs, so the economic unit must take care of this aspect and allocate funds for costs for quality planning

2. **Evaluation costs: Evaluation costs include :**

- **Materials inspection costs:** The dairy company allocates costs on products in order to inspect them and determine their safety as they spend about (10,790,385) dinars per year, as it is clear that these costs are low as the process of examining materials is one of the most important activities that require focusing on them and spending on them higher costs because the dairy industry is damaged very quickly, so the products must be constantly inspected and preserved during storage and transportation because if products are provided that do not meet the required specifications It will lead to the return of products and then damage them



and cannot be recycled and this will carry significant costs for the economic unit.

Inspection costs and inspection of machinery and equipment: The dairy company does not work by examining machinery and equipment and this reflects a negative picture on the economic unit as it is necessary to follow up and inspect the machinery and equipment continuously in order to maintain and repair them, and for the purpose of maintaining the health and safety of products from damage because it will affect the lives of customers and individuals who consume these products.

While other evaluation costs, such as product testing costs, product evaluation costs and evaluation of materials involved in production processes, reflecting a negative picture of the company's work and performance, are not taken care of, therefore, it is necessary to pay attention to the costs of evaluation and disclose them in financial statements.

3. Internal failure costs: As a result of the lack of interest in design, industry, quality planning and material inspection processes during operations, the company suffered losses of about 476,853,090

dinars in 2016 and (175,830,300) dinars in 2017, which is the cost of internal failure, which is a loss to the company. As a result of the products not conforming to the planned specifications and therefore being neglected and thrown in the form of residues, the non-conformity was the result of a lack of interest in the costs of internal failure by the company, so it is necessary to pay attention to these costs and disclose them for the purpose of reducing the losses incurred by the resulting company for not conforming the products to the specifications established.

4. Costs of external failure: As a result of the failure to deliver products to customers in a timely manner and manufacture them as required and planning for quality and planning for design and industry blindness, which led the company to bear the costs of external failure estimated at about (2,075,143,705) dinars and if the company continues to not pay attention to the costs of inspection, maintenance, evaluation and prevention, the costs of external failure will increase in the future and if production increases in the future these costs will increase in the future.

Quality costs can be displayed at The Iraqi Dairy Company as follows for 2016

to	Statement	Amount
1.	Evaluation costs	Design costs
		Manufacturing costs for products that do not match specifications
		Costs of preventing defects and errors
		Inventory and audit costs of new products
2.	Prevention costs	Costs of evaluating and reviewing the materials entering
		Product evaluation costs
		Inspection and testing costs
3.	Costs of internal failure	Inspection costs for equipment and tools
		Costs of product damage
		Costs of processing scrap and residual waste
		Product maintenance and repair costs
		Wrong product design costs



4.	Costs of external failure	Costs of product failure to conform to customer specifications	
		Product return costs	

Source: Prepared by the two researchers

THIRD TOPIC: CONCLUSIONS AND RECOMMENDATIONS

FIRST: CONCLUSIONS

1. By paying attention to the concept of quality costs, many competitive advantages can be achieved as well as product performance can be significantly improved.
2. Taking into account the quality of products does not mean neglecting the environmental aspects of the products, as attention to quality costs will enable the economic unit to protect the environment from the damage caused by the products.
3. Paying attention to quality costs will enable the economic unit to achieve sustainability because paying attention to quality costs will reduce costs, achieve environmental protection and protect society.
4. By paying attention to and disclosing quality costs, the Economic Unit will be able to obtain an ISO quality certificate, which will enable the economic unit to keep pace with the changes and developments taking place on economic units around the world.
5. Detailed disclosure of quality costs in financial statements makes it easier to identify and control positions of imbalance and weakness, and enhances customers' confidence in products and their loyalty to economic unity.

SECOND: RECOMMENDATIONS

1. There is a need to pay more attention to the issue of quality costs and how to improve the performance of products and develop them because they are important topics that require control by economic units.
2. Develop and improve the performance and skills of accountants and work to make them aware of the field of cost accounting and how they are controlled and disclosed in detail by participating in many training courses and holding workshops for them.
3. Enact many laws and legislation that oblige economic units, especially industrial units, in order to avoid irregularities and fines incurred by the economic unit.
4. Purchase of equipment and equipment that enable the filtering of water before use by the Iraqi Dairy Company for the purpose of reducing contaminated

water that affects the lives of individuals and the use of modern and advanced equipment and equipment that help to carry out production operations in the best possible way.

5. Work on the continuous modernization of the ISO 9001 certificate of the Iraqi Dairy Company in order to keep up with the changes and developments globally.
6. Re-tabulation of the accounting system adopted in the organization of accounts and the preparation of financial statements for the purpose of disclosing quality costs in detail in financial statements.

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