

The impact of compliance costs on the Activity Based Costing method and how it helps to bring down product costs

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Abstract

This essay seeks to define the quality costs associated with conformity. Based on the results, conformance and non-conforming costs were separated for quality costs. This essay also seeks to clarify the connection between the costs of conformance and the system's expenses based on ABC activities. The actions are split into two categories by the system: Whereas the second half of the activities is titled Activities that do not add value and costs to these activities are referred to as non-conforming costs, the first section is titled Activities that Add Value and costs of these activities are referred to as Conformity Costs. By focusing on the activities that add value, non-value-adding activities and their associated expenses (non-conformance costs) can be eliminated.

Keyword: Costs, Activity Based- Costing system, Product.

Introduction:

The issue with the research is that the expenses of conformance are not given enough consideration. This will raise the costs associated with non-conformity, which will inevitably raise both the product's overall cost and its quality. And not concentrating on the cost system based on ABC activities that helped lower costs, which categorizes activities into two groups: those that add value and classify their associated expenses as conforming costs, and those that do not add value and classify their associated costs as costs. The cost of the product rises as a result of non-conformity, failure to eliminate activities that bring no value, and costs.

Quality Costs

Costs associated with resources and goods that fall short of quality criteria were characterized as quality costs by Drury (2000: 902). It has also been described as all expenses incurred by any production or service organization to guarantee that the good or service is delivered to clients in accordance with their needs. There are other definitions of quality costs as well. According to British Standards BS6143, these costs include the price of quality assurance and assurance, as well as the price of loss and losses from failing to reach or attain quality. About AS 2561 (Evidence for recognizing and using quality costs), which is an Australian specification, I've described it as the difference between a company's actual cost to create and sell. that we can define quality costs as the costs that occur in order to meet the customer's requirements for goods and services, that is, they are costs that focus on activities and related costs that add value to the customer (matching costs), as attention to these costs leads to Reduction of

unnecessary activities that do not add value to the customer and the costs associated with it (non-conformance costs), all of which lead to a reduction in product costs while maintaining the quality of the product from goods and services.

Types of quality costs

Quality cost has two main pillars. The first axis represents a positive cost (conformance quality costs) and accounts for up to 50% of the quality budget. It is divided into two parts, namely, the cost of prevention and the cost of evaluation. As for the second axis, it represents a negative cost (the costs of non-conformity quality) and drains up to 50% of the quality budget and is divided into two parts: the cost of internal failure that occurs during the performance of the work and the cost of external failure. (Al-Ghamdi, 2010) The researcher will review the costs of conformity (prevention and evaluation) and the costs of non-conformity (internal and external failure) as follows:

Matching costs

Prevention Costs: Prevention costs are defined as the costs that occur in order to delete the faulty units before production. (Zimmerman, et.al., 2001: 430) Also known as efforts to prevent failure. (Hammoud, 2000: 271) It includes the costs of training employees in the quality departments, the costs of measuring and quality control equipment, the costs of quality engineering, the costs of supervising prevention activities, the costs of design engineering, the costs of maintaining protective equipment and devices, and the costs of evaluating suppliers (Kazem, 2015: 260). That is, the costs of prevention are costs that occur to prevent that products that do not conform to specifications are produced and therefore do not correspond to the needs and aspirations of customers. Therefore, work must first be done on a good market study and knowledge of the desired product by the customer, in order to work on designing a product that meets the needs and desires of customers.

Appraisal Costs: The evaluation costs represent all inspection and testing activities that take place in the organization to ensure that a defective product does not reach the customer. Theoretically, these costs are unnecessary if everything is done correctly the first time. (Al-Gargooli, 2004: 20) The evaluation costs are defined as the costs that are incurred to ensure that the materials and products meet the quality matching criteria. (Drury, 2000: 901) It includes the costs of inspecting and testing the raw materials purchased, the costs of inspecting and testing production in operation, the costs of inspecting and testing the complete production, the costs of inspecting and testing the production process on the production line, the salaries of the inspectors and the costs of the scattering of the inspection devices. (Sheikhly, 2006: 64). That is, the objective of evaluation costs is to ensure that the products conform to the planned specifications, as they meet the needs of customers, and to assess that there is no overrun on these specifications.

Non-conformance costs

Internal Failure Costs: The American Society for Quality Control (ASQC) defined internal failure as the costs that arise as a result of the deviation of production lines from the limits of control and the appearance of units that do not conform to the planned specifications and quality measurements that are required to be destroyed or recycled. (Al-Bakri, 2000: 8) It includes the following (Al-Hayari, 2019: 5):

A- Rework: The cost of correcting defective products.

B- Scrap: it is the products that have defects.

C- Retesting: This is the cost of retesting products after they are re-manufactured.

W - Unemployment: the loss of effective capacity resulting from quality problems.

C- Analysis Failure: The cost of analyzing goods or services that do not match the quality in order to determine the root causes of the problem.

H- Changing operations: The cost of adjusting manufacturing or service operations to correct defects or shortcomings

G- Reducing the level: The cost difference between the normal selling price and the low price for quality reasons.

D- Loss of revenue: This means the inability to meet current demands and the loss of future orders.

The researcher believes that the costs of internal failure occur before the products are delivered to customers, that is, their faults are discovered before they are delivered to the customer, and the organization takes corrective measures for the product in order to ensure that the product reaches the customer properly.

External Failure Costs: Huxatable indicated that the costs of external failure are the costs resulting from discovering defects in the product after the customer has obtained it, and represent hidden costs that are difficult to measure. (Al-Gargooli, 2004: 20) It includes:

A- For complaints: It includes the costs of verification and amending complaints about the defective product.

B- Guarantees: the costs involved in replacing or repairing defective products.

C- Return reform: It is the costs associated with receiving, repairing and replacing the defective product.

W- Exchanges: These are the costs of concessions offered to clients.

C- Sanctions: The costs associated with violations in service level agreements.

H - Lost Opportunities: Future profits lost due to customer exchange for quality reasons.

G-company brand: This point is the most important point because it is difficult to measure, and it can be the most harmful to the company. (Al Hyari, 2019: 6)

The researcher believes that the costs of external failure occur after the product is delivered to customers, meaning that the customer has received a poor-quality product with defects. This leads to customer dissatisfaction with the organization's products, and the costs resulting from the customer's dissatisfaction with the organization's products are among the most dangerous types of costs. Because it leads to the loss of the current customer in addition to the loss of future customers as a result of their refusal to buy the products of the organization, for this must follow the precautionary measures that prevent the arrival of such products to customers, and this is done through focusing on conformity costs.

Criticism of the traditional system of charging indirect costs:

The most important criticism directed at the traditional system is the inaccuracy, fairness or adequacy of the information it provides on the cost of products, despite the importance of this information to meet the requirements of the prevailing economic environment, which is characterized by continuous changes in the size, quality and specifications of production, and the reasons for inaccuracy or justice or Adequacy of Information under Conventional Cost Measurement Systems (Ibrahim, 2010: 11):

1- Lack of a clear causal relationship between the cost of the product and the resources that have been exhausted, which leads to the difficulty of making many decisions such as pricing decisions, and decisions of preference between buying or manufacturing some parts of the product, in addition to the decisions regarding determining the optimal mix of levels of achievement.

2- The instability in determining both the storable costs and the costs of the period, especially in light of the total cost loading, and the consequent instability in dealing with the marketing costs and many elements of administrative costs.

3- The presence of activities that do not contribute to production and do not add value to it, and thus can be avoided without any significant negative effects on production,

while these activities deplete a degree of resources that varies according to the nature of the commodity and the nature of the activity and the technology used, which leads to a higher cost.

4- The use of direct working hours as a basis for allocating additional costs does not provide a clear causal relationship between them and the costs and products in particular, as Ferrara and Hirsch indicated, in light of the dependence on automation, and the consequent automation over operating systems in most industries, and this led to the difference of elements The costs and the percentage of each component according to the degree of the applied mechanism, which led to a decrease in the need for manual work and then a decrease in the cost of direct labor to the lowest possible level compared to an increase in the percentage of the cost of indirect work, and manual work was limited - to a large extent in supervisory work during the life cycle of the product .

5- Reliance on information that is inaccurate, which results from traditional systems for measuring costs, leads to the selection of inappropriate competitive strategies that end with the organization leading to losses in most cases.

6- Basing the allocation bases under the traditional systems for measuring costs based on the volume of production, as the only reason to download all the elements of additional costs, and this is considered largely misleading, especially in light of the multiplicity of products and the different specifications and the diversity of production batches sizes, and what it requires from different sizes of inputs And various specifications of these inputs, in addition to that many additional cost elements are not related to the volume of production, but rather are related to other causes such as the number of purchase orders or the number of times the machines are equipped or the number of times received, ... etc.

7- Failure to achieve effective control over many elements of the additional costs, whose percentage increased at the expense of the ratio of the initial costs as a result of reliance on modern technologies, in addition to the lack of understanding of the activities and the costs they cause, as achieving better control over the cost elements depends on determining their causes .

8- Distorting the cost of the products and thus distorting their profitability, and this leads to wrong decisions for those who depend on those costs, whether they are administrative or investment decisions, regardless of whether the decision-makers are from inside or outside the organization.

9- Actual costing - according to traditional costing systems - begins at the actual production stage, and then these systems ignore a large proportion of the product life-cycle costs, for example design costs.

10- Failure to provide information or non-financial measures to measure the efficiency of using available resources and energies especially in light of the complexity of production processes, the breadth of products, the short product life cycle and the profound understanding of the activities of the organization, which helps to define the activities that these products require, And avoid unnecessary ones, and then identify the untapped potential of the organization.

Activity-Based costing (ABC):

The costing system based on activities is based on a basic idea that relies on linking the resources used and activities that use these resources, and then linking the costs of activities with the final product. Activity-based cost accounting has been integrated with other cost management techniques, such as: continuous improvement and development cost, target cost, cost reduction through the value chain, Zero Defect flawless production strategy, Just In Time procurement and production system, cycle costs Product life. Total cost of quality. The Activity Based Costing System (ABC) is

defined as a system that is based on cost drivers that connect the activities carried out with the products and accordingly allocate the indirect costs of the activity directly to the products. (Hilton) added that the ABC system is a two-step system for allocating indirect costs to products, in which the first step is to determine the necessary activities, and that each activity includes a cost pool, and an activity is allocated Indirect costs on activities in the cost pool based on the resources of the organization that were used, and then the cost driver is determined for each cost complex, but in the second step, the costs of the activities are distributed on the production line (Al-Nayli, 2008: 46) From all of this, the researcher believes that the ABC system achieves fairness in the distribution of costs, whereby costs are allocated in two phases. The first stage, the allocation of costs directly on the activities that caused these costs to occur, and is then in the second phase of these activities on the allocation of cost products. Consequently, the products have borne the costs of the activities that contributed to building that product.

Cost system design based on ABC activities

The process of designing a cost system based on ABC activities includes several steps as follows: -

Process value analysis

The ABC activities system begins with the analysis of the system for the activities needed to produce a specific product or service, it identifies all activities that consume the resources needed to produce a product taking into account that it classifies them into activities that add value and activities that do not add value by nature, noting that Product operations are only activities that add value. As for the rest of the production process steps, such as moving products from one point to another and also examining and waiting for operations, they are activities that do not add value, they consume resources without adding value to the product. (Garrison & Noren, 2002: 226) From all this, the researcher believes that it is necessary to analyze activities to activities that add value and activities that do not add value, in order for there to be an attempt to get rid of unnecessary activities that do not add value to the production process and to the customer.

Identifying activity centers

An activity is defined as a set of activities performed within an organization (Al-Sabou ', 2000: 63) and it has been defined as any process or event that causes the creation or presence of costs (Hussein, 2000: 64) and the activity center can be defined as part of the production process that the administration needs To report on its cost independently, treating each activity as an independent activity center may not be considered economic for many organizations, but rather several activities related to each are grouped into one center in order to reduce the registration and detail costs required. There are four levels of activities:

A- Unit level activities: These are activities that are performed every time a unit produces a product.

Batch-level activities: These are activities that are performed every time a batch product is produced.

C- Product-level activities: These are activities that are performed to support the production of each type of product.

D- Facilities-level activities: These are activities that provide facilities for the manufacturing process in general.

The extent of merging activities depends on the extent of the difference between the organization's products. When the level of difference between the products is low, it is possible to integrate these activities more easily without a significant decrease in cost

accuracy, but the greater the difference between the products, the less the possibility of merging the activities, and the more it increases The need for more independent activity centers to ensure the exact cost of products is determined. (Garrison & Noren, 2002: 228, 230).

Tracing cost to activity centers

The costs are determined on the basis of activities in two phases, where the costs are allocated to the activity centers pending their loading on the products as the organizations prefer to allocate the costs directly to the activity centers in order to avoid any distortion of the costs (Garrison and Noren, 2002: 231) and in order to define the activities and costs Performing each activity, the ABC system explains in detail how to use the organization's resources. The ABC system creates small cost basins associated with various activities (Horngren, et.al, 2000: 141). The complex or cost basins means that it is a group of homogeneous activities that are performed within the activity unit in order to achieve a specific goal which is a link between the resources of the organization and products, As the organization's resources are consumed by these activities, in order to complete the final product of goods and services.

Selecting cost drivers

Each dock has a cost of activity, a measure of services to perform activities, where this measure is used as a basis for cost allocation (for example the use of cubic feet for packets transported as a measure of distribution activities). In some cases, costs in the cost basin can be tracked directly to the product. For example, the cleaning and maintenance activity of a particular template consists of salaries and wages paid to workers responsible for cleaning and maintaining this template, and direct tracking of costs improves accuracy in calculating the cost. (Horngren, et. Al, 2000) One unit cost is calculated from the cost guide for each activity as the source comes (Al-Nayli, 2008: 60):

The unit cost of a unit of cost for a particular activity = total cost of activity (cost pool) / total number of unit of cost of activity for a given activity

Then determine the amount of consumption of each of the cost guides as follows:

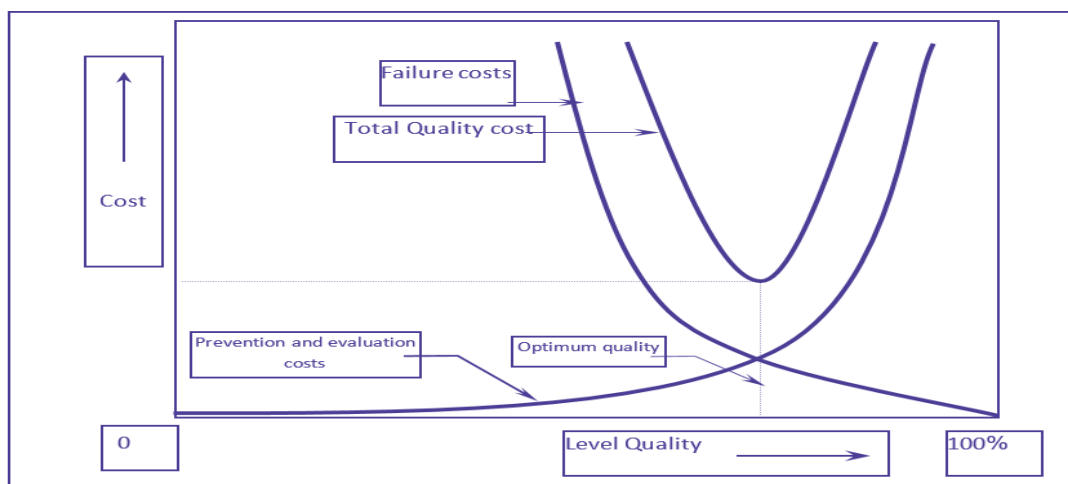
The share of the unit produced from the activity costs = the unit cost of the activity cost vector x the amount of the cost unit consumed from the activity

The relationship between quality costs and the ABC system

There are two views of quality costs:

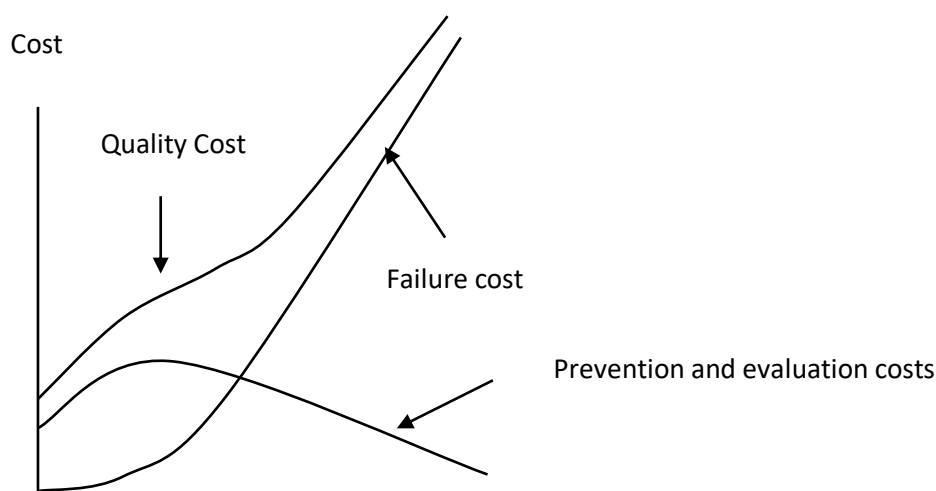
The traditional view: It assumes that the costs of internal and external failure decrease when increasing the amounts spent on prevention and evaluation costs, in addition to that it assumes that the optimum level of quality occurs when the total costs of quality are minimal. (Slack, et. Al. 2004: 728) That is, when the costs of conformity increase, the costs of non-conformance decrease, but it increases the total costs of quality, achieving the hypothesis "Improving quality results in an increase in the total costs of quality and the consequent increase in price Meaning that good quality is matched by high price." (Al-Sharifi, 2005: 55,56) The traditional view can be illustrated in Figure (1).

Figure (1) the traditional view of quality costs



Source: Al-Sharyab & Al-Kilani, 2010: 2

As for the modern view: it assumes that the optimum level of quality occurs at the zero defects level, where the costs of non-conformity (internal and external failure) increase with the increase of defective products, while the costs of conformity (prevention and evaluation) increase slightly in the beginning, and then decrease by the increase in defects. The total costs of quality are minimal at the zero level. (Hilton, 1999: 498,499), as shown in Figure 2. The level of zero defects means that the level of product quality is 100%, and this occurs when the organization focuses its efforts on the costs of prevention and prevention so that failure can be minimized, or at least discover any defects in the products before they are delivered to the customer. It is noted that the more the costs of failure tend to decrease, the greater the focus of the organization's effort on prevention and prevention activities compared to evaluation activities, because evaluation only detects defects, while prevention and prevention completely get rid of it (prevents its existence) (Hussain, 2000: 292)Figure (2) modern view of quality costs



Source :(Hilton , 1999 : 498)

According to the costing system on the basis of activities that uses value analysis, that is, the systematic analysis of activities needed to produce a product or perform a service, i.e. all activities that consume the resources needed to produce the product or service are identified with their categorization into activities that add value and activities that do not add value by nature (Garrison and Noren) (2002: 226), where activities that add

value are represented in those necessary activities that cannot be dispensed with, and are performed efficiently, which entails costs that customers and consumers believe are beneficial and add value to the goods or services that they obtain, and these activities contribute directly to Satisfying customers, and then increasing the value of the product from their point of view, and the cost trends for these activities and the information they provide affect the interpretation of their cost behavior, and then these guidelines must be monitored to identify the value chain according to the chosen strategy, and among the most important of these activities: purchase, storage, use . As for activities that do not add value. It consists of two types of activities, the first type: necessary activities that may be performed in an incompetent manner, and this performance may need to be improved or developed using the appropriate technology in order to be efficiently, which leads to a reduction in its cost and the times it consumes from the times necessary for its performance such as waiting times before the delivery of the product The times of handling raw materials in warehouses and the times of transporting products under operation from one stage to another. The second type: unnecessary activities that can be completely dispensed with, and these activities entail costs that customers and consumers believe are unjustified and do not add value to the goods or services that they obtain as they deplete resources and do not add value, which leads to an increase in cost without corresponding to an increase in benefit . Where the necessary activities must be improved and developed that are not performed efficiently, and unnecessary activities must be avoided, and thus avoid their variable cost and associated fixed costs, and consequently reduce the cost of products without tangible impact on their value from the viewpoint of customers and consumers. (Ibrahim, 2010: 17, 18) Quality management relies mainly on the efficiency of each activity group and its ability to develop and improve, and that responsibility is the responsibility of all those activities. Therefore, customer satisfaction is achieved as a result of good management of this or that activity. (Al-Ani et al., 2002: 41)

From all of this, the researcher believes that the costs of activities that add value to the customer are identical costs (prevention and evaluation), while activities costs that do not add value to the customer are costs of non-conformity (internal and external failure). By eliminating unnecessary activities that do not add value to the customer and the production process, the costs associated with these activities (costs of non-conformity) are eliminated, thereby reducing the costs of non-conformity that account for the bulk of the quality costs. Whereas performing the correct work properly in the first time and every time leads to getting rid of these activities that do not add value and the costs associated with it (non-conformance costs). By focusing on the costs of prevention, error is avoided from the start (by conducting studies and research aimed at avoiding the occurrence of errors), leading to a reduction in the percentage of production of products that do not conform to specifications (reducing the costs of internal failure) and thus the customer gets a product that meets Desires and needs (reduce the costs of external failure). Reducing these types of costs means reducing costs of inconsistency, which are the costs of activities that do not add value to the customer and the production process, and all of this leads to a reduction in product costs in general. Hence the effect of the costs of conformity on the costs system based on ABC activities. The ABC system focuses on activities that add value to the customer and the production process, as it aims to eliminate unnecessary activities that do not add value to the customer and the production process. The same applies to quality costs, which classify costs into conforming and non-conforming costs. As the costs of conformity (prevention and evaluation) are what add value to the customer and the production process, while the costs of non-conformity (internal and external failure) are the costs that do not add value

to the customer and the production process. Quality costs aim to get rid of the costs of non-conformity (internal and external failure) that are costs that do not add value according to the ABC system and get rid of these costs is by focusing on the costs of activities that add value (matching costs), and this is done through conducting targeted studies and research To design a product that has good specifications and the study is conducted by a specialized team of researchers, all of which leads to a reduction in the costs of internal and external failure, which are costs that do not add value to the product and the production process and thus reduce the costs of quality and the costs of the product in general .

Conclusions

Failure to follow modern concepts and regulations in the field of costs such as the concept of quality costs, and the costing system based on activities lead to an increase in product costs while not paying attention to the quality required by customers. Focusing on compliance costs (for prevention and evaluation) reduces product costs. ABC achieves accuracy and fairness in calculating product costs. ABC provides complete information about activities that add value from the customer's point of view and activities that do not add value from his point of view. Customer satisfaction is the foundation that any organization strives to achieve in order to maintain its existing customers and gain new ones. The ABC system analyzes activities and their costs to activities that add value from the customer's point of view and therefore the costs related to them are identical costs (prevention and evaluation), and activities do not add value and therefore the costs related to them are costs of non-conformity (internal and external failure). Focusing on activities that add value and related costs (matching costs) leads to disposal of activities that do not add value and costs related to it (costs of non-conformity) in a way that leads to a decrease in total quality costs, and hence a decrease in the cost of the product.

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