مجلة المثنى للعلوم الادارية والاقتصادية
ONLINE ISSN : 2572-5386 … PRINT ISSN : 2226-1419
website : www.muthjaes.net

Contemporary Cost Management Techniques: The appropriate alternative to the traditional cost accounting systems applied in the Iraqi industrial units - an applied case

Faiza Ibrahim Mahmoud Al-Ghabban[a]
Higher Institute of Accounting & Financial Studies

Abstract

The changes in the contemporary business environment have led to the need to develop traditional cost accounting systems applied to industrial firms, which focus mainly on the cost of manufacturing and ways to allocate indirect manufacturing costs to products. The main problem of research has been that traditional cost accounting methods are no longer suitable for application in modern business conditions where there is an increase in the use of technology and dynamic changes in customers' preferences, global competition conditions, as well as challenges to the survival of industrial firms in the market. Modern cost management techniques therefore focus on cost reduction, as modern manufacturing companies cannot influence market prices but can influence their costs in current working conditions as they are more appropriate while focusing on costs throughout the product life cycle. The research aims to address modern cost management techniques and study their application in the Sanabel Iraq pastry Company with the aim of developing a method for estimating the costs of production in its plants, which has become the right solution to problems in them. Cost-management techniques are healthier than traditional methods of distributing indirect costs in proportion to the actual size of each activity rather than evenly distributed between the activities and the products. It is also important to research the quality of appropriate cost management techniques to distribute and redistribute costs per activity based on the data generated for production processes and to assist in the proper estimation and distribution of costs at all stages of manufacture. The research concluded that modern cost management techniques should be applied in conjunction with traditional cost accounting systems that provide short-term cost information, starting from the activity based coting technique and then applying other appropriate modern cost management technologies throughout the product life cycle and all the cost causes of operations and activities can be defined in detail in the company.

Article information

Search history
Receive :2/6/2021
Date modified :29/6/2021
Publishing :29/6/2021
Available online:19/9/2021

Keyword :
Traditional cost accounting methods
Modern cost management techniques
Industrial companies

Introduction

Cost accounting systems determine product cost and cost selection depends on production process type, so production order cost is determined under the production command system, while phase cost is used under the production stages system. Today, both systems are traditional cost-calculations, are not suitable for use in modern operating conditions that change rapidly to become more complex, and manufacturing processes in modern production companies are almost automated, fully computerized and lead to a change in

* Corresponding author : E-mail addresses : alghabban.Faiza@gmail.com.
2021 AL – Muthanna University . DOI:10.52113/6/2021-11/256-274.

manufacturing cost structure. This makes the indirect industrial cost component the most important in the modern manufacturing cost structure. The change in cost structure will make traditional cost systems inappropriate for product evaluation. In order to avoid the incorrectness of traditional cost systems in determining product cost and assessing product profit, calls have emerged for the development of cost systems through the adoption of cost-effective activity-based techniques.

❖ **Conventional Cost Systems (Overview)**

The traditional cost input is still based on the allocation of indirect costs in production centers, the re-loading of indirect costs charged to each production center on the products at a single loading rate for the center, and under a loading basis. As the number of hours worked on machines and the number of hours worked directly, although the last one was the most common and all related to the size of the production. Inputs in traditional methods are based on cost accounting information as an integral part of financial accounting. In terms of information output in conventional cost-setting systems, information is provided for the preparation of financial statements, such as commodity inventory assessment, cycle production cost, unit cost, sales cost, cycle income, and information for the preparation of operational budgets, either on a normative or actual basis, such as sales budgeting, procurement budgeting, Balancing the projected stock and balance sheets. Thus, traditional cost systems have been applied financially and administratively successfully, with no product diversity, relatively small indirect costs and no use of modern technology for product delivery, which were prevalent until the last quarter of the twentieth century. This has given way to modern cost-management techniques to replace them. The problem at the traditional cost input is to obscure the relationship between the cost element and the cause of the cost element, collect the asymmetric cost elements in terms of its causes and then load them on a single basis as a Asolution to all problems, and the idea of production centers as a center for pooling cost elements is the reason for the imbalance. Its results are to obtain unreliable, cost- effective information that equalize costs regardless of causation or benefit from those costs. This in turn leads to increased loading of some products and under loading of others and eventually errors in cost data affecting both the control and decision making function, leading to overpricing of products, Thus, reducing their competitiveness by cutting off production of some potentially profitable products, and a lack of loading continues to produce lost products that affect a company's survival in a competitive labor market. The use of traditional cost systems is to identify cost elements of products to determine cost. It consists of the following: (1)

- The cost objective as representing anything to determine cost is usually products that the company manufactures.
- The direct costs reflect sacrifices in economic resources and can be traced to a product.
- The indirect costs represent untraceable sacrifices must be allocated in appropriate ways.
- Cost pools that are built on different activities to determine the indirect costs of each activity.
- Cost distribution with foundations linking a set of indirect costs to a given cost goal.

The above elements are used to design cost systems to determine cost and evaluate profitability:

A. Productive work order cost system.

B. The cost-of-the-process system or the productive phase.

C. Activity-based cost technology.

Based on the above, the traditional cost entrance remains the most common for many years and is based on the following :

First: Allocate indirect costs to all production centers.

Second: Indirect costs charged to production centers are reloaded at a single load rate.

Third: The load rate in the centers is calculated according to a loading basis, and the hours of operation of the machines, the hours of direct work are considered to be the most reliable basis for their relation to the production size, without considering that many items of indirect costs are not related to size. This may create incorrect values for cost elements, as this basis for loading indirect costs does not take into account resource consumption, reducing the effectiveness of the traditional approach to measuring product costs by adopting cost accounting data.

❖ **The essence of the flaw in the traditional entrance to costs and its effects:**

The flaw in the traditional approach to costs is that it blinds the relationship between the cost element and the cause of the cost. Charging costs based on hours, units, or hours of machinery is thought to be the more hours – base units – the higher the costs, which is not true for a large number of indirect costs. Therefore, the source of the imbalance in the combination of the asymmetric cost elements in terms of their behavior and their loading on a single basis, and the idea that production centers should be established as a center for collecting cost elements is the cause of the failure.

The consequences of providing unreliable and cost-effective information as well as equalizing costs regardless of the use of those costs, increasing the load of some products and under loading of others, so that the result will be errors in cost data that result in overpricing of products, Thus, they reduce their competitiveness or stop producing some products that could be profitable products. On the other hand, the lack of loading of some products leads to the continued production of lost products that affect the company's stay in the labor market, so the current problem of the industrial companies will remain with the following question:

When is the time to adopt cost-management technologies that work alongside traditional corporate cost systems?

To answer that question, consideration would need to be given to the operating conditions and manufacturing cost structure of industrial firms, which would be discussed in detail in the following paragraphs.

❖ **Cost allocation in traditional cost systems :**

One of the objectives of cost accounting is to measure the cost of production by relying on multiple cost-accounting methods, the outputs of which will be expensive to produce, and to measure the cost of pricing products and decision-making on whether to continue or stop producing or replacing a product with another product. Overall, there are two cost systems: (2)

- Job order Coating System.
- process Coating System.

The Job order cost system is used to measure the cost of products manufactured to customer-specified specifications. Cost elements are assigned to the production orders from which they benefited. The IQDob order cost system is used in industries that meet specific consumer needs such as shipbuilding, aircraft, elevators, furniture, clothing, etc. the cost unit according to the regulations is the operational order to be

completed according to the quantity and specifications required. Since production according to the production Job order system is not typical, it varies in quantity and specification. Therefore, the cost varies from command to command and production is made on the basis of specific requests by clients and not for storage - production runs through production centers determined by specification and order size, and cost determination is linked to the production order to end operation and after loading its share of costs.

In contrast, the process cost system is used in industries with continuous production, and does not depend on the issuance of separate successive production orders from the management to the production departments, and the production process is carried out by the transfer of production from one stage to another where manufacturing operations are added at each stage until the product is ready at the last stage. The phase cost system is applied in companies that produce a single recurrent product such as oil refiners. Each stage is dedicated to the productivity of an account called a phase, an industrial process with its own entity, and the stage may be a specific production department or part of the department, and the production stage is called the production process at which the product ends. The basic distinction between the order cost system and the production stages can be made by setting the cost target of any function consisting of a unit or multiple units of products, and the cost distribution is similar in both systems, with direct manufacturing costs attributable to the products. They are directly assigned to products that have caused them to appear. The problem for each system remains how to allocate some indirect cost elements to cost centers that have caused indirect industrial cost elements for the product unit that are considered directly to a cost center. Indirect manufacturing costs for products should be allocated on the basis of the relationship between indirect manufacturing costs and the particular product. It is important to emphasize that there are no allocation bases that can provide a fair distribution. The bases for personalization supported:

Allocation bases	
Direct materials costs .	Direct working hours.
Production units.	Space .
Total direct costs .	Number of orders.
Machine operation hours .	Cost of maintenance materials.
Cost of capital assets.	Quantity of raw materials.

Manufacturing costs are assigned to the cost target by a rate calculated by the sum of indirect costs based on the specified allocation.(4) one or more allocation rates may be used for indirect manufacturing costs of products. The more general allocation rates are used, the healthier the unit cost and the more objective the product profitability is in decision making. The effect of traditional cost systems depends on product profitability on the structure of the cost of manufacturing, if the indirect manufacturing costs significantly participate in total manufacturing costs, A traditional cost system creates a false image of product profitability. In general, the allocation of indirect costs to units produced is in two stages: The stage of allocating cost elements (resources) to cost centers, based on measures

that provide the relationship for the use of those resources.

- **Cost allocation under cost management techniques**

The intensity of criticism of the traditional cost input has been the strong inducer of the transition to cost management techniques, with both command systems and stages considered to be traditional cost systems depending on the type of manufacturing process, while cost technology can be applied on the basis of activity (ABC) regardless of the manufacturing process type. Deficiencies in traditional systems have been adopted. The main purpose of (ABC) technology is to provide a sound cost distribution and thus to assess product profitability. Accordingly, technology focuses attention on indirect manufacturing costs in order to determine the most appropriate method for allocation. Thus, the activity-based cost technique will measure the cost of resources used to perform activities, and then link the costs of activities to end products that will benefit from activities using measures that reflect the needs of products from activities. (ABC) technology

The stage of loading the costs of these centers on final products using the size-related loading bases, such as direct working hours, machine hours or direct material cost, although many elements of indirect costs are not related to the bases, and their figures are not commensurate with the number of units produced; The nature of the indirect cost components themselves varies.

Noting that the traditional cost system ignores many considerations in the company's activities when calculating product costs, as it focuses on the volume of production and the number of units produced, and distributes costs based on the assumption that products consume resources, so that the traditional loading bases are based on product unit specifications. This results in the indirect costs not being properly allocated to the products.

- **Cost allocation under cost management techniques**

The intensity of criticism of the traditional cost input has been the strong inducer of the transition to cost management techniques, with both command systems and stages considered to be traditional cost systems depending on the type of manufacturing process, while cost technology can be applied on the basis of activity (ABC) regardless of the manufacturing process type. Deficiencies in traditional systems have been adopted. The main purpose of (ABC) technology is to provide a sound cost distribution and thus to assess product profitability. Accordingly, technology focuses attention on indirect manufacturing costs in order to determine the most appropriate method for allocation. Thus, the activity-based cost technique will measure the cost of resources used to perform activities, and then link the costs of activities to end products that will benefit from activities using measures that reflect the needs of products from activities. (ABC) technology

Activity based costing has two cost-related dimensions and focuses on allocating resource costs to activities through cost-related causes. The second operational dimension focuses on processes by providing non-financial information about cost causes, whether resource causes or stimuli, which helps in the sustainable improvement of performance. The main assumption of (ABC) technology is that products consume activities and activities and consume resources. (5) it is activities that consume available resources that cause costs, and that products produce costs through activities that require design, manufacturing, and marketing. The technology is based on two stages of allocating the first indirect industrial costs, the whole direct costs are allocated to cost-causing activities to determine the cost of each activity,

and the second is related to the activity on the products by the degree to which each product benefits from the activity, meaning that if the production order does not use a particular activity. It should not be paid for any costs associated with this activity.

Under Activity based costing, direct manufacturing costs are tracked directly to products, so attention is paid to manufacturing costs that are allocated to activities rather than Jobs as in traditional systems. The ((ABC)) application is in two phases, the indirect manufacturing costs of the activity cost pools are initially allocated, after determining the relationship between the specific indirect manufacturing cost and the activity for the assignment the indirect manufacturing cost of the activity that caused it. In the second, indirect manufacturing costs from activity cost sets are assigned to products using cost engines, which represent any activity related to the cause-result and to the effect of the consumed resources. (7)The fundamentals of personalization can also be used to provide an obJective assessment of product profitability. Cost engines must correctly show the relationship between the activity and cost elements. Otherwise, the cost of the product and its profit can be distorted. The technology needs more effort and resources than traditional methods. Its application was justified in terms of whether the benefits exceeded the costs of their implementation. So when you decide to run a company, you decide to apply (ABC).

- **Conventional versus (ABC) in terms of influencing product profitability**

The dilemma for industrial companies is to choose the right cost system for them. Traditional cost systems show some limitations in evaluating product profitability, especially when the bases for cost allocation are not directly related to indirect manufacturing costs.8 the contemporary environment is characterized by automated and computerized manufacturing processes, technological innovations and global competition, which have resulted in significantly increased indirect manufacturing costs, direct labor costs have fallen dramatically. In such circumstances, traditional cost systems cannot make an obIQDective assessment of product profitability, because the basis for allocation in the traditional system such as direct working hours is no longer tied to indirect manufacturing costs. Therefore, (ABC) should be applied as a suitable cost technology in modern manufacturing conditions. Surveys conducted in modern manufacturing companies indicate the reasons for the application of technology: (9)

1. Production lines vary considerably in size and complexity of manufacturing.
2. The diversity of production lines is numerous and needs different degrees of support services.
3. Overhead costs make up a large part of total costs.
4. The characteristic of manufacturing has changed from labor-intensive to to Automation.

The existence of one or more of these factors will be an indication of the application of Activity based costing technology. The manufacturing cost structure is one of the factors that will be more clearly considered when determining which cost system to apply. Recent changes in manufacturing cost structure triggered by the automation of the process of permanent manufacturing have significantly increased the application of (ABC) technology in modern manufacturing companies around the world. It was also emphasized that increased automation of manufacturing resulted in increased indirect manufacturing costs, which became the most important cost in total manufacturing costs. At the same time, the nationality of direct labor costs has fallen, with the ratio of direct labor costs to total manufacturing costs in automation ranging from 5% to 15%.(10) the portion of indirect manufacturing costs (50%) was exceeded. When indirect manufacturing costs take a large part of

total manufacturing costs, an obIQDective assessment of product profitability can be made using (ABC) technology

❖ **Dynamic approach to cost management**

Dynamic cost management approaches allow for a product's profitability assessment throughout the product's life cycle. Therefore, the approach is directed to long-term decisions on product pricing, forming the appropriate product mix, eliminating the lost production line and entering the new product line. For purposes of providing management with product-related information and profitability assessment, the accounting function of companies needs to combine a consistent and dynamic approach to cost management, in other words, the need to combine product profitability with short- and long-term comparison. The interaction between these cost management approaches can provide a reliable picture of product profitability. While the fixed cost management approach relies on traditional cost accounting methods that focus on manufacturing costs to determine the cost of manufacturing per unit, the dynamic cost management approach includes modern methods that focus on total costs throughout the life cycle of the entire product. Modern management accounting literature recognizes cost-accounting techniques that focus on the life cycle of the entire product. These techniques may include: Target cost, lifecycle costs, and long-term pricing. (11) . The four techniques above allow for a comprehensive analysis of product cost and profitability through the entire product lifecycle. Targeted cost technology emphasizes the role of product design in reducing costs in manufacturing and the final phase of the product life cycle. And increase operational income(12). The constraint theory ensures the methods used to manage bottlenecks in the manufacturing process in order to reduce manufacturing costs and increase operating income.(13) The cost of the life cycle tracks all costs per product. (14) Allowing a full assessment of product profitability during its life cycle. Long-term cost-of-life pricing is therefore used in long-term pricing decisions. (15).

❖ **Target cost implementation characteristics**

Target cost technology is an approach that links market information with accounting information, and that determines the maximum allowable cost of a new product that can be achieved profitably. (16) Technology has been developed because of the fact that a large number of firms operate in such markets, where they cannot influence the market price that has been set. Companies that operate in this market must adIQDust their costs to the market price. Therefore, in order to maintain the required level of profitability, firms in these working conditions can only affect costs. Cost reduction becomes an area of management interest in the cost-targeting technology to determine the cost of the product at the expected market price and the desired profit per product: (17) the target cost is determined based on the expected market price and long-term profit required. Therefore, accounting practice will be derived from market requirements. (18)

Option 1: Through the integration of manufacturing technology, using cost management techniques such as activity-based cost-management technology that is cost-based and seeks higher profitability. (20) The second option is to redesign the product using the target cost to calculate costs specified in the second option. The design phase is important in the product life cycle, in which product features are identified by cost and market considerations and costs that are difficult to reduce when the product is designed and manufactured. (21) The target cost can be implemented through the following five steps: (22)

1. Market Price determination (MP).
2. Select desired Profit .
3. Calculate the target cost (TC) through the following equation

(Market Price - Profit required)

(TC = MP – DP)

4. Use value geometry to determine ways to reduce and rationalize cost.

❖ **Use value engineering and operational control to further reduce costs.**

In a modern business environment, market prices for companies are determined by the impact of supply and demand. Firms have little impact on market prices. Companies must adapt to market prices. This is by determining the desired profit level and the target cost in light of the market price and the desired profit. Once the target cost is determined, opportunities are sought to reduce actual costs. In the process of reducing the actual costs of targeted costs, companies are adopting a value engineering technology in the case of a new product or a cost of Kaiser in the case of remanufactured products. Value engineering uses the targeted cost to reduce product cost by analyzing alternatives between different types of product functions and total product cost. (23).

The application of value engineering technology begins with a customer analysis during the new or revised product design phase to identify the product functions preferred by customers. Value engineering determines which product functions are most preferred by customers and looks for ways to reduce product costs while maintaining the required level of product quality. All of this is done at the product design stage when most product costs can be changed. Therefore, the value engineering at the design stage aims to determine the host costs of the value that, if canceled, reduces the actual value or benefit customers receive from the use of the product. (24) On the other hand, the non-host cost of the value is a cost that will not be incurred if omitted to reduce the benefit to customers from using the product. It is a cost that the customer does not wish to pay. (25) Under value engineering technology, companies try to reduce both the value added and non-added cost. It is clear from the above that the value engineering technique is aimed at reducing the cost of the product during the design phase that Kazan's cost will focus on reducing the cost of the product during the manufacturing phase of the product. Kaiser's cost means continuous improvement to reduce cost, improve manufacturing processes, and improve product quality. (26) It can be said that if the cost of the product is secured by (85%) after the design phase, then the rest of the product costs can be changed during the manufacturing phase and other stages. By going to Kaizen cost technology, which seeks to continuously search for new ways to reduce the costs of manufacturing a product with a particular design.(27) Cost reduction can be achieved in manufacturing, by developing new manufacturing methods, by adopting comprehensive quality management |& constraint theory. (28)

The target cost and cost-per-weigh technologies are complementary, and they aim to reduce the cost of the product by maintaining the desired level of product quality. But the main difference is that the target cost technology is oriented toward design while the cost of Kansan is focused on manufacturing processes. The targeted cost enables the product to assess profitability because it is future-oriented. Most product costs are determined at the design stage. But after the design phase, it will be harder to reduce costs further. It can be said that Kazan's cost can affect 15% of total product costs. The target determines the cost of the product for subsequent stages of the product. Because it feeds control aspects in advance. (29)

❖ **Lifecycle cost technology is understandable and applied**

Since traditional cost methods focus on manufacturing costs and the allocation of indirect manufacturing costs on products, the cost of the life cycle is all the costs associated with the product during its life cycle. The purpose of the lifecycle cost is to identify the "real" costs of the

product and enable long-term evaluation of product profitability. Therefore, the cost of the life cycle creates a basis for a dynamic evaluation of the product. The cost of a life cycle determines the activities associated with a particular product and tracks the costs associated with the products during each activity. It is a useful tool when applying (ABC) for activity-based cost determination where the cost of the lifecycle can make every cost associated with the product an activity that is necessary to achieve the product. Therefore, do not make (ABC) focus on indirect manufacturing costs, but on all costs, whether industrial or other. Managers in today's business environment are also about total costs throughout the product life cycle. (30) The cost-of-life technology will therefore provide more cost-effective information for products that use the traditional cost method because they take all costs during the product life cycle. Therefore, the cost-of-life technology's information will provide a qualitative basis for long-term decision-making in terms of product prices, profit-assessment, as well as the formation of a mix and disposal of non-profit product. Applying the cost of the life cycle in assessing product profitability will provide information about product costs during each product life cycle. However, in order to assess product profitability, revenue must also be tracked over the life cycle of the product. Therefore, when assessing product profitability, two different views of the product lifecycle should be considered: (31) First vision: A cost life cycle that provides information about product costs during its life cycle. The second vision is the sales lifecycle. Provides information on sales and revenue earned from the sale in the market. So, the sales life cycle is a series of stages of product life in the market that starts from product entry into the market, through sales growth and finally reaching maturity, decline, and withdrawal from the market. (32) it must be said that the sales life cycle focuses only on the market stages throughout the product life cycle, thus recognizing the stages of: (33) introduction, growth, maturity, decline, and withdrawal from the market. Since the sales life cycle involves only the market stages of the product life cycle and the cost life cycle, the product life cycle from the point of view of the cost life cycle and from the point of view of the sales life cycle varies. The product lifecycle is longer than the cost-lifecycle view because it involves the stages of the product before the market stage.The product profitability assessment can be determined during the market stages of the product life cycle, because at these stages the product achieves profit. In all the pre-market phases, the product generates costs only and thus creates a loss. However, these costs that occurred in the R&D phase as well as in the design phase can be covered by revenue during the product marketing stages. Therefore, it is very important to combine cost and product life cycle in order to determine the appropriate long-term pricing policy for the product. Product-related costs need to be covered. Therefore, the research, development and design costs that occurred in the product phases must be covered Revenue during product marketing stages. Therefore, it is important to combine cost and product life cycle in order to determine the appropriate long-term pricing policy for the product. Product-related costs need to be covered. Therefore, the research, development & design costs that occurred in the product stages prior to the market stage must be covered by the revenue earned from the sale of the product. Product profitability must be evaluated dynamically throughout the product life cycle. A dynamic product profitability assessment allows the identification of a product's real contribution to the company's income and profitability. In order to determine the appropriate price for the product at a certain stage, the corresponding costs & the situation in the product market must be taken into account.

Strategic pricing policy changes throughout the product lifecycle. In the first stage, the price is set at a high level to recover high R&D costs as well as to benefit from product differentiation and demand. In the second stage, where price is still fixed at a high level because the company is trying to increase income and profitability with the new product in the growing market. In the third stage, the price starts to fall and is determined at the market level. At this point, the company controls the cost in order to maintain the required level of profitability without compromising product quality. In phase IV, the price is set at a relatively low level. At this point, the company is trying to extend the life of the product.. (34)

- **Dynamic and consistent approach integration for cost management**

In order to obtain an obJective assessment of product profitability, the management of fixed, dynamic, and traditional costs has been developed in traditional cost accounting methods at the time of the Industrial Revolution when the most attractive information by managers was product cost information. At that time, the majority of total costs were direct manufacturing costs, while indirect manufacturing costs, sales costs and administrative costs did not take the high part of total costs. So, traditional cost accounting methods have been, and are, focused primarily on manufacturing costs and the way in which indirect manufacturing costs are allocated on products (cost target). Since indirect manufacturing costs were not significant, indirect manufacturing costs were allocated on a cost-allocation basis linking indirect manufacturing costs to the manufacturing process. But working conditions have changed dramatically in the contemporary environment, owing to innovation, competition, automation of production processes, globalization, and changes in customer preferences. Today, working conditions are complex. Companies have very little impact on market prices and are under pressure to cut costs and maintain the desired level of product quality in order to meet customers' preferences. These new working conditions have changed the manager's needs for information that led to the development and implementation of new accounting methods that can provide traditional cost accounting methods for a consistent assessment of product profitability, i.e. they can provide information on product cost in an accounting period. This information will be sufficient for managers in a stable business environment and for short-term decision-making. But in a modern business environment, this information is insufficient to get cost improvement and maintain the desired level of product quality, and managers will need total cost information. This is unless traditional methods that focus on manufacturing costs alone can determine the cost of the product. The first change in cost-estimation systems was therefore made with (ABC) approval Because of automation of manufacturing processes & changing the cost structure of manufacturing companies. Direct labor costs have been eliminated at all, but at the same time the indirect manufacturing costs portion has increased significantly. The problem has been: (ABC) allocate indirect manufacturing costs to activities in manufacturing and then allocate them from activities to the product based on the consumption of an activity related to a particular product. (35)

Under (ABC), indirect manufacturing costs are allocated to products through a number of cost-driving bases, not through a single allocation basis as in traditional cost systems. This has made it possible to achieve greater reliability of product costs and restore managers' confidence in cost systems. By adopting (ABC) product profitability assessment, it will be more reliable than traditional cost methods. (ABC) is a revolution in cost accounting, management accounting, and a

link between a consistent and dynamic approach to cost management and a product profitability assessment.

The implementation of (ABC) was the first step in managing modern cost and dynamic evaluation of product profitability.(ABC) focuses on the manufacturing process in order to provide the distribution of indirect manufacturing costs for products. For (ABC) to be applied across the entire company, activities within the company must be identified to relate to their costs. The purpose of (ABC) application to the entire company is to determine the cost of a particular activity and to identify activities that lead to higher costs. Activity cost information will be useful to managers trying to reduce costs. It will also enable the support of (ABM) Managers who determine which activity to maintain and which should outsource.(ABC) & (ABM) technologies will enable the implementation of other modern cost management technologies such as targeted cost & lifecycle cost. Cost management technique will focus on costs associated with the product and not just on manufacturing costs. Due to modern working conditions, managers are interested in overall costs & profitability of the fixed product for short-term decision making, while managers need information on product profitability throughout the life of the product. The assessment of the profitability of the fixed product is unable to give the full picture of how much it contributes to the income because it is originally intended for a fixed accounting period, on the other hand, A dynamic product profitability assessment takes all costs associated with the product from R&D to withdrawal from the market & all product revenues earned, giving a clearer picture of combining the profitability of a fixed and dynamic product.

- **A consistent approach versus cost-dynamic management**

Although a fixed product profitability assessment focuses on product manufacturing, it can indicate the stage of life of the product in which it is a product. There must be a consistent approach to cost management due to external financial reporting. In contrast, dynamic product profitability assessment provides management with information on product profitability throughout their life, providing a useful basis for long-term decision-making in terms of product prices, quantity of production, product mix, and so on. The cost methods used to assess the profitability of a partially dynamic (ABC)-based product can be used for consistent and dynamic product profitability assessment. In fixed cost management techniques, (ABC) is used to determine the cost of the product. In dynamic cost management techniques, (ABC) or (ABM) is used to determine the cost of a specific activity within a company that can then be used at the target cost as well as at the cost of the life cycle. The target cost determines the target cost of the product, which includes the cost of targeted materials, the cost of targeted labor, the cost of indirect manufacturing, the cost of targeted sale, and the cost of distribution. The target can be determined by the activities according to this definition, and the comparison of the actual activity cost determined by (ABC) / (ABM) /TC techniques indicates whether the activity cost is within the target level. The (ABC)/(ABM) technologies can also be used for life cycle costs that take product-related costs during product life, where(ABC)requires identification of product-related activities during its life and tracking cost based on product activities defined in the product's life. So(ABC) technology enables a qualitative implementation of lifecycle costs when designing. Fixed & dynamic cost management techniques are interconnected & the profitability of a dynamic product can be evaluated only if the fixed product profitability assessment has adopted appropriate cost methods for the purpose of the product price decision-making process, the product mix. Accordingly,

fixed & dynamic cost management techniques should be integrated. Fixed cost management technologies focus on manufacturing. Target cost as a dynamic cost management technique focuses on design to identify other costs, in other words, lifecycle cost technology with (ABC) technology.

1. Case study of cost management techniques related to industrial companies:

The Iraqi company of Sanabel is working on making two kinds of pastries, namely cakes and bread, and the company works within its normal capacity. The cost estimates are based on a production order system based on customer orders and tastes and one basis in the allocation of indirect industrial costs, and for the purpose of executing applications by customers, which are represented in the following amounts:The first production order was 18,000 kg of bread, while the second production order of the required biscuits was 25,000 kg. The cost of the pastry production company Sanabel Iraq was as follows:

Total cost of raw materials (direct)		118166.49 IQD
Share of the production order (Job N0.1)	23018.40 IQD	
Share of the production order (Job N0.2)	95148.09	
Total cost of direct work is		84,546 ID
Share of the production order (Job N0.1)	31897 IQD	
Share of the production order (Job N0.2)	52.649	
Indirect costs :		182480.07 IQD
Total rent	16650 IQD	
Salaries and wages	44451	
Indirect materials IQDs	3753.90	
Water, electricity, fuel and oil	2,9224.77	
Maintenance	2020.56	
Water, electricity, fuel and oil	10997.50	
Maintenance	16,300	
Depreciation of machinery and equipment	59082.34	

The selling price per kilogram of bread is (7.5) IQD and the biscuits are (12) IQD per kilogram. The total costs for each of the company's products can be determined as follows:

Table No. (1)
The direct cost of the products of Sanabel Iraq pastry Company

Cost elements	Total	First production order quantity (18,000 kg)	Per unit	The quantity of the second production order (25,000 kg)	Per unit
Raw materials	118166.49	23018.40	1.28	95148.09	3.81
Direct wages	84546	31897	1.77	52649	2.11
Total direct costs	202712.49	54915.40	3.05	147797.09	5.92

2. **Determine the appropriate basis for allocating indirect costs on productivity orders**

The company has made direct business selections as the basis for customization, reaching 9240 hours of direct work, with 2,688 hours of direct work first production order and (6,552) hours of second production order. The indirect costs of the work orders amounted to (1,824,00.07) IQD at one

responsibility center. In this case, the hourly share of indirect industrial costs will be (19.75) IQD (18,2480.07/9,240) hours, and the hourly share of indirect labor costs will be multiplied by the number of hours of each of the first & second production orders. Progress can be explained in the table below:

Table No. (2)
The total cost of the products of Sanabel Iraq pastry Company

Input	Total	first production order quantity (18000 Kg)	per unit	second production order quantity (25,000 kg)	per unit
Total direct cost	147797.09	3.05	54915.40	202712.49	5.91
Allocation of indirect costs	129394.96	2.95	53085.11	182480.07	5.18
Total cost	277192.05	6.00	108000.51	385192.56	11.09

The rate of profitability for each production order is calculated by subtracting total costs from total revenue, as in Table (3) :

Table No. (3)
Rate of profitability for the products of Iraq's Sanabel pastry company

Input	Total	first production order quantity (18000 Kg)	per unit	second production order quantity (25,000 kg)	per unit
Total income	435,000	135,000	7.5	300,000	12
Total cost	85192.56	108000.51	6.0	277192.05	11.09
Profitability	49807.44	26999.49	1.5	22807.95	0.91
Overall profitability and per order	11.45%	20%		7.6%	

It notes from Table 3 that the first production order achieved a higher rate of profitability than the second production order. The first order had a profit rate of (20.00) IQD while the second achieved a lower profit rate of (7.60). IQD But what is the case when adopting (ABC) and will the results remain the same or will there be a different change and can be explained in the points below:

Table No. (4)
Processing activities for the products of Sanabel Iraq pastry Company

Internal command activity	AC No.1
Storage Activity	AC No.2
Processing Activity	AC No.3

In terms of quality control, it controls the quality control activity (AC No.4). In terms of the manufacturing process in the company, it shall organize the main activities described in Table (5):

Table No. (5)
Product manufacturing activities for the products of the Sanabel Iraq pastry Company

Food production activity	AC No.5
first Production Division Activity	AC No.6
Second Production Section Activity	AC No.7

For marketing and distribution operations, the main activities described in the following table are organized:

Table No. (6)
Activities of the marketing and distribution of the products of the Sanabel Iraq pastry Company

Packaging Activity	AC No.8
distribution activity	AC No.9

Finally, the function of administrative and financial operations, which organize administrative and financial activity. (A10)

3. Cost Calculation

In this step it should be noted that the costs associated with the packaging activity will be included in the direct costs to be allocated directly to the second production order because the delivery of the biscuits at sale and delivery is the only product that needs packaging. (Table 7)

Table No. (7)
The direct cost of the products of Sanabel Iraq pastry Company

Input	Total	first production order quantity (18,000 kg)	Per unit	second production order quantity (25,000 kg)	per unit
Raw materials (direct)	188166.49	23018.40	1.28	95148.09	3.81
Direct work	84546	3187	1.77	52649	2.11
Packaging	16300	0	0	16300	0.65
Total direct costs	219012.49	54915.40	3.05	164097.09	6.57

4. Allocation of indirect costs

Resources consumed by each activity can be identified as indirect costs through the table (8). The allocation can be described as follows:

Table No. (8)
Allocation of indirect cost on activities for the products of Sanabel Iraq pastry co.

One : Allocate costs for the internal order preparation activity

Average cost per activity in IQD = 5500 / 400 = 13.75

First order share = 100 × 13.75 = 1375 IQD

Second order share = 300 × 13.75 = 4125 IQD

Two : Allocate storage activity costs

Average cost per activity in IQD = 7100/1900 = 3.736.84

Share of the first production order = 1000 × 3.736.84 = 3736.84 IQD

Share of the second production order = 900 × 3.736.84 = 3363.16 IQD

Three : Allocation of costs of the processing activity

1500 = 15 / Average cost per order in IQD = 7500

Share of the first production order

Share of the second production order

= 200 x 15 = 3000 IQD = 4500 IQD 15 ×= 300

Four : Allocation of the costs of the qualitative control activity

Average cost per order in IQD = 11300 / 1080 = 10.46

First order quota = 720 x 10.46 = 7533.33 IQD

Second order share =360 x 10.56 = 3766.66 IQD

Five: Allocation of the cost of food production activity

Average cost per order in IQD = 8000 / 43000 = 0.19

Share of the first production order = 18000 × 0.19 = 3348.84 IQD

Share of the second production order = 25000 × 0.19 = 4651.16 IQD

Six : Allocate costs for the first Production Section activity

Average cost per order in IQD = 21743.96 / 1520 = 14.31

Share of the first production order = 800 x 14.31 = 11444.19 IQD

Share of the second production order = 720 x 14.31 = 10299.77 IQD

Seven: Allocation of costs for the second production section

Average cost per order in IQD = 24779 / 1420 = 17.45

First order share = 720 x 17.45 = 12564 IQD

Second order share = 700 x 17.45 = 12215 IQD

Eight: Allocation of distribution activity costs

Average cost per order in IQD = 10200 / 250 = 40.8

First order share = 100 × 40.8 = 4080 IQD

Second order share = 150 × 40.8 = 6120 IQD

Nine: Allocation of the costs of administrative and financial activity

Average cost per order in IQD = 11.70057 / 400 = 28175.14

First order portion = 100 × 28175.14 = 17514.28 IQD

Second order share = 300 × 28175.14 = 52542.38 IQD

The indirect costs of Sunabel Iraq can be explained by the following table

Table (10) shows the Technical cost Guides (ABC)) for Sanabel's activities Iraq to produce pastries

Table (10)

Cost orientations for Sunabel's activities Iraq to produce pastries

Activities	Cost driver	First production order quantity (18,000 kg)	Second production order quantity (25,000 kg)	Total
A1	NO.Order	100	300	400
A2	Inventory (kg)	1000	900	1900
A3	Material (kg)	200	300	500
A4	Test hours	720	360	1080
A5	Product (KG)	18000	25000	43000
A7	Work hours	800	720	1520
A8	*	*	*	*
A9	Machinery operating hours	100	150	250

A10	Number of deliveries	100	300	400

From the table and from the results found in table (10) , can find the total cost of products can be found under the adoption of (ABC) and as shown in Table (11).

Table No. (11)
The total cost of Sanabel Al-Iraq Pastries Company Products

Details	Total	First production order quantity (18,000 kg)	Per unit	Second production order quantity (25,000 kg)	Per unit
Total direct cost	219012.49	59915.4	3.05	16407.09	6.57
Total indirect cost	166180.07	64596.48	3.59	101583.59	4.06
Total costs	385192.56	119511.	6.64	265680.68	10.63

Table (12) shows the profitability rate of the production orders of Sunabel Iraq for pastry and under Technology as follows:

Table No. (12)
Rate of profitability for the products of Iraq's Sanabel pastry company

Details	Total	First production order quantity (18,000 kg)	Per unit	Second production order quantity (25,000 kg)	Per unit
Total income	435,000	135,000	7.5	300,000	12.00
Total costs	385192.56	119250	6.64	265750	10.63
Total Profit	49807.44	15480	0.86	343250	1.37
Profitability rate	11.45	11.47%		11.42%	

5. Discussion of the applied case:

It is clear from the previous tables that the rate of profitability of the two is close and at a rate of (11.47) for the first and (11.42) and the second, having been divergent under traditional cost methods. By identifying and classifying activities involved in product manufacturing, the extent to which cost management techniques overlap, where (ABC) work has been initiated that activities consume resources and therefore products consume activities, the cost of activities is grouped into clusters to be allocated to cost targets. Its directors will be a source of information for the launch of (ABM) and (ABB) technologies in a way that cannot be applied in isolation from the (ABC) application, the latter being the source of information for them. In addition, (ABC) identifies valuable host activities that do not add value, (ABM) enables management by exploiting cost information and activities to reduce costs and profit, and (ABB) information is a feed of (ABC) technology because it is (ABB) technology

Based on progress, (ABB) requires an application of (ABC) technology. As for the interrelationship between the three techniques, Technology applications reduce production costs by relying on the cost-effectiveness of analyzing activities and eliminating activities that do not add value through (ABC) and non-efficiency activities through (ABM) while maintaining value-hosting activities that affect the performance of the company. With regard to the impact of technologies (T.C, V.E, and Kaizen) on the company's service, for T.C, reliance is placed

on V.E to reduce cost during the planning and design phase while maintaining quality to ensure customer needs are met. After the transfer of pricing from the company to the customer's hands, T.C became more responsive to customer requirements by pricing market research and selecting products that achieve targeted profits within specifications that convince customers of the value and benefits of products that they are willing to pay for. Value engineering is a method of quality improvement and cost reduction that uses product design and production process information, so the relationship between The relationship between T.C and V.E is therefore complementary. Cost reduction is through improvements to the current production process and product design. The location of a technology application (Kaizen) in the value chain follows the target cost.the relationships between (T.C and V.E) technologies are positive for the value of products. The relationship between (ABC) and T.C provides information to understand the cost structure of products and the competing price to support the decisions to determine the optimal mix.

Finally, dividing the Sanabel Iraq company into activities by adopting (ABC) and (ABM) will provide feedback in evaluating alternatives for product redesign, which demonstrates the complementary relationship between cost management techniques to improve productivity, quality, lower costs and meet customers' needs for a value-added product.

Conclusions and Recommendations

Conclusions

1. The are several challenges inherent in (ABC) adoption. These are high cost of implementing (ABC), resistance to change, lack of top management support, lack of cooperation & commitment among departments, lack of knowledge concerning (ABC). problems in defining cost drivers, problems in identifying activities, high cost of consultations, and a higher priority of other changes or projects.
2. There is an integral and interlinked relationship between the (ABC) and other technologies under consideration in achieving the objectives of Iraq's Sanabel pastry company.
3. A key component of the technologies in question in the company is that it seeks to improve quality across the company as a whole, not just for the producers, where they are integrated into the implementation mechanism and are interlinked in terms of achieving objectives.
4. There is an integral and interlinked relationship between (ABC),(ABM),& (ABB) technologies by dividing the Iraq's Sanabel pastry company into activities & considering that activities consume resources & products & consume activities as a source of (ABM) technology.
5. (ABC) identifies activities that add value & activities that do not add value & (ABM)'s work on identifying necessary activities & unnecessary activities.(ABB) technology is dependant (ABB) technology relies on the full information of (ABC) and the interrelationship between (T.C, V.E & Kaizen) technologies by moving pricing decisions to consumers, & then relying on market research by pricing for (T.C, V.E) is the best supporting technology to reduce cost & improve quality.
6. under strategic vision, Kaizen is complementary to T.C because of their integration into cost reduction and quality improvement goals. The complementary relationship of T.C,V.E and Kaizen technologies has an impact on the company and its objectives because the objIectives of these technologies are to serve the Iraq's Sanabel pastry company goals and achieve the objectives of cost management.
7.Cost management techniques provide the information needed by management whether financial or non-financial to demonstrate the cost

and health of products using cost-benefit causation and activity to help achieve organizational strategies for the Iraq's Sanabel pastry company.

8. The research reviewed the use of the (ABC) methodology to overcome shortcomings in traditional approaches to allocating costs to products so as to promote effective financial management and concomitantly, efficient service delivery.

9. Iraq's Sanabel pastry company employ traditional costing methods depending upon their market forces and characteristics. One of the most important decisions to be made is about the type of costing system that would be suitable for Sanabel Iraq company.

10. In the long-term, the benefits to be derived from implementing an (ABC) system far outweigh the costs.

11. The key benefits relate to (ABC) provides a strong link between organization's operational performance and actual financial performance; can reveal how an Iraq's Sanabel pastry company activities align with its strategic goals and objectives.

12. (ABC) provides better cost control and cost management;better understanding of cost reduction opportunities; improves managerial decision making; and provides more accurate information for product costing and pricing.

13. The role of direct labour in current manufacturing environments has diminished, but at the same time the level of support services has increased. Traditional methods of cost calculation do not take into account this increased complexity and still allocate overhead costs by their diminishing labour base or even do not take into account overhead costs

Recommendations

1. In present day Iraq's Sanabel pastry company, performance measurements play an important role in providing strategic directions and developing corresponding operational methods. the activity-based costing which calculates the cost of activities and helps in making decisions on product mix and price for improving the utilization of resources and minimizing the cost of production.

2.In the light of technical developments in manufacturing, companies must react to and develop developments.

3. Applying (ABC) technology in Iraq's Sanabel pastry company will provide the right climate for applying (ABM) & (ABB) technologies.

4. The Iraq's Sanabel pastry company integrated technology work achieves its goals, especially as V.E intervenes to bridge the gap between T.C and the initial cost of the product to achieve T.C within the desired quality specifications using continuous gradual improvement.

5. The impact of that integration on the business is more clearly defined by the shared obectives of those technologies, which complement each other or the goals the Iraq's Sanabel pastry company seeks and through which it is achieved.

6. As a result of interaction with the modern environment, Sanabel will need to respond to the conditions of that environment by relying on modern cost-management techno Iraq's Sanabel pastry company logies to provide information that supports the company in implementing and developing its strategy.

7. There is a need for a more accurate product costing method, . ABC. Discusses the application of ABC with the objective to provide information on whether the system would be applicable and under what circumstances it is better suited for improving the overall operational effectiveness.

Reference

Horngren, C.T., Datar, S.M., Foster, G. (2003). Cost Accounting – A Managerial Emphasis, Prentice Hall, New jersey, p. 96-97 .

Lucey, T. (1996). Costing, DP Publications, London, p. 175-176.

Engler, C. (1988). Managerial Accounting, Irwin, Homewood, Illinois, p. 427.

Lucey, T. (1996). Costing, DP Publications, London, p. 88.

Horngren, C.T., Datar, S.M., Foster, G. (2003).Cost Accounting – A Managerial Emphasis, Prentice Hall, New IQDersey, p. 141.Lucey, T. (1996). Costing, DP Publications, London, p. 88.

Horngren, C.T., Datar, S.M., Foster, G. (2003). Cost Accounting – A Managerial Emphasis,Prentice Hall,New Jersey, p. 141 .

Weygandt, IQD.IQD., Kieso, D.E., Kimmel, P.D.(2005). Managerial Accounting, IQDohn Wiley & Sons, USA, p. 144.

Ibid.p154.

Lucey, T. (1996). Management Accounting, Letts Educational, London, p. 37.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005). Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005). Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Horngren, C.T., Datar, S.M., Foster, G.(2003). Cost Accounting –A Horngren, C.T.,Datar, S.M., Foster, G.(2003). Cost Accounting - A Managerial Emphasis, Prentice Hall,New IQDersey.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005). Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Garrison, R.H., Noreen, E.W. (2000). Managerial Accounting, Irwin – McGraw Hill.

Lucey, T. (1996). Management Accounting, Letts Educational, London.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005). Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Garrison, R.H., Noreen, E.W. (2000). Managerial Accounting, Irwin – Garrison, R.H., Noreen, E.W. (2000). Managerial Accounting, Irwin – Garrison, R.H., Noreen, E.W. (2000). Managerial Accounting, Irwin – McGraw Hill.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005). Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Horngren, C.T., Datar, S.M., Foster, G.(2003). Cost Accounting – A Managerial Emphasis, Prentice Hall, New jersey.

Horngren, C.T., Datar, S.M., Foster, G. (2003). Cost Accounting – A Horngren, C.T., Datar, S.M., Foster, G. (2003). Cost Accounting – A Horngren, C.T., Datar, S.M., Foster, G. (2003).Cost Accounting – A Managerial Emphasis, Prentice Hall, New jersey.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005), Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.

Lucey, T. (1996), Management Accounting, Letts Educational, London.

Blocher, E.IQD., Chen, K.H., Cokins, G., Lin, T.W. (2005), Cost Management – A Strategic Emphasis, McGraw Hill – Irwin, New York.