

THE ROLE OF PRODUCT LIFE CYCLE COSTING TECHNOLOGY IN IMPLEMENTING THE BLUE OCEAN STRATEGY

Ali Abdul Hussein Hani Al-Zamili

ali.alzamel@qu.edu.iq

Sabreen Saleh Jaber Al-Khuzai

Sabreensalih9@gmail.com

University of AL-Qadisiyah

Corresponding Author : Sabreen Saleh Jaber Al-Khuzai

Abstract : The current research dealt with an important topic for cost accounting and management accounting that revolves around the relationship between product life cycle costing technology and the blue ocean strategy technology. The research methodology was designed to identify and analyze the basic problem, which is represented by the economic units suffering from the high costs of their products and the intensity of competition with imported products, in addition to the lack of... These units apply contemporary costing techniques, including product life cycle costing technology, blue ocean strategy, and other techniques. Thus, the research aims to clarify the cognitive foundations of both the product life cycle costing technique and the Blue Ocean Strategy, as well as clarifying the role of the product life cycle costing technique and the extent of its impact on the Blue Ocean Strategy if applied by the economic unit. In order to achieve the research goal, the researcher relied on To the deductive approach in writing the theoretical side, while the applied side was based on the inductive approach, as it was based on a group of methods such as personal interviews with specialists and engineers, in addition to obtaining financial data, as work was done to apply the product life cycle costing technique and its role in implementing the ocean strategy. Blue in one of the laboratories of the General Company for Electrical and Electronic Industries, which is the Akkad laboratory for the manufacture of electric heaters. The 120-liter electric heater was chosen as a sample for the research. Based on the theoretical and applied study, a set of conclusions were summarizedT The most important of themTechnical application helps HProduct life cycle costs And C to reduce costs and improvePerformance through dispensingon Activitiesthatno Adds value, silverno About finding the Occasion designs For the mint And JLT TShepherd Exploitation optimum For resources Applying the dimensions of the Blue Ocean Strategy also contributes to achieving uniqueness from other competitors by providing innovative products.

Introduction: The challenges he faced increased laugh Units Economic Especially!At the present time, due to the rapid technological developments that have led to an increase in the intensity of competition in the market, as economic units seek to achieve superiority over competitors and maintain performance by following the best practices through which they can achieve their goals and ensure their survival in the market. Most economic units were affected by the loss of their market share due to their inability to compete with foreign goods that are often producednNot conforming to the required quality standards, as well as the absence of quality control. In addition, many laboratories stopped production in the contemporary work environment, which led to a decrease in production and an increase in costs. The obsolescence of the equipment used in production and the weakness of financing contributed to the decline in the competitive position of the products, so addressing Many researchers use modern cost techniques in their research, including product life cycle technology, because of its role in measuring and determining costs at all stages of the product life cycle, in order to provide a product that meets the desires and expectations of customers, increase their confidence in the economic unit and its products, and work to keep pace with industrial developments and improve quality. product and cost reduction, as the application of these techniques contributes to measuring, analyzing, and knowing success factors such as product quality, low costs, customer satisfaction, and lack of competition. This research is considered a complement to previous scientific studies and is distinguished from other studies in demonstrating the relationship between product life cycle costing technology and the Blue Ocean Strategy to improve The quality of the product and making it unrivaled, and it also sheds light on some philosophical aspects that previous studies did not address.

Chapter One: Research Methodology

the study Problem :-

Seeking the units Industrial to Achieving the maximum possible profits in a low-competition market according to the concept of the Blue Ocean Strategy. In light of the rapid technological developments at the present time, it is difficult to ensure survival in the market in light of the intense competition and price war. Thus, the research problem can be formulated with the following question:

(Is it possible to use the product life cycle costing technique?TContributedin TImplement a blue ocean strategyIn industrial units?)

The importance of the research: -

The importance of the research stems from the need for the industrial sector to reconsider its policies in order to be able to overcome many problems, the most prominent of which is the inability of its products to compete and ensure survival and continuity in the markets in light of the presence of a large number of imported competitive products, which requires it to use modern technologies and methods, and Here, the research focused on using contemporary cost techniques, including product life cycle costs and total quality management, to provide solutions to the problem of high costs in economic units in general and improve the quality of products.

YesDuffsearch:-

lie ascorerSearch through the following:

- 1.Addressing cognitive foundations toProduct life cycle costing technology.
- 2.Addressing the cognitive foundations ofBlue ocean strategy.
3. ClarificationThe role of product life cycle costing technology and the impact of its application on strategyYehBlue ocean.

Research hypothesis:-

The research is based on a basic hypothesis that:

(The application of product life cycle costing technology contributesinTanfYy ocean strategyBlue in a way that suits the requirements of the contemporary business environment).

Research population and sample: -

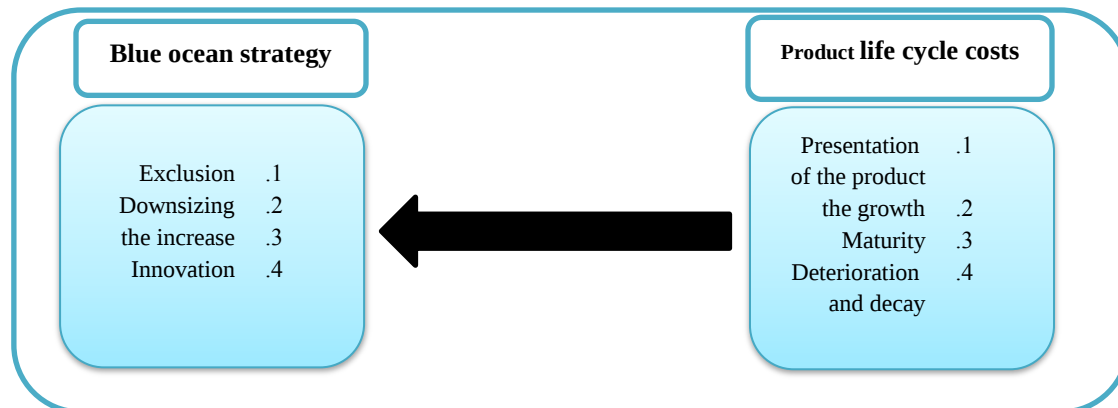
The Iraqi economic sector, represented by the Iraqi industrial economic units, was targeted as a research community, because of its importance in the economic development of the country, and because of the large industrial sector and the multiplicity of its economic units, it is difficult to cover it by the research, so the General Company for Electrical and Electronic Industries / Akkad Factory will be chosen as a place. To apply the search.

Default search form:-

In order to prepare the hypothetical model for research, it is necessary to accurately define the research variables, which are represented by contemporary cost techniques, including product life cycle costing technology and the Blue Ocean Strategy. The research variables can be divided into two types:

- 1- The explanatory variable: It is the independent variable and represents the product life cycle costing technique.
- 2- The response variable: It is the dependent variable and represents the blue ocean strategy, which includes the dimensions of exclusion, reduction, increase, and innovation. Figure (1) shows the hypothetical model for agency research:

Figure (1) shows the hypothetical outline of the research



Chapter Two: The theoretical aspect of the role of product life cycle costing technology in

First: Concepts of product life cycle costs: -

Researchers have presented many concepts for product life cycle costing technology, some of which can be summarized in the following table.

Table (1)Product life cycle costing concepts

The concept of product life cycle costs	Name of researcher and year	T
This technology means that the economic unit manages the costs of the entire life cycle of the product, that is, it covers the costs of research, development and design. These costs are called initial costs, while production costs are called regular costs, while the costs of sales and customer service are called final costs. They also cover the costs of maintenance and disposal of the product. Thus, this technology deals with the product. From different points of view represented (production, marketing, customer)	Wang & Ke 2016:212))	1
The product life cycle costing technique is a tool for managing costs and trying to reduce them without compromising the quality of the product at all stages that the product passes through during its life cycle, starting from the pre-toProduction and even disposal at the end of its useful life	(Shalah, 2020: 54)	2
The product life cycle costing technique can be defined as an estimation of costs throughout the life cycle of the product to determine whether the profits achieved in the manufacturing stage cover the cost of the product that is achieved in the pre-production and post-production stages.	(Al-Mihna, 2020: 48)	3
PLCCIt is a method of calculating the estimated product life cycle costs as the sum of purchasing costs, ownership costs, and operating costs according to the following equation +KO +KO LCC = KA	Waldemar, 2021:3))	4
Tracking and collecting all actual costs related to the product from the beginning of its formation to the end, as the product passes through several stages, namely research and development, design, production, marketing, distribution, and customer service.	(Gegan, 2021: 7)	5

Source: Prepared by the researcher based on the sources mentioned in front of each of them.

As the researcher believes, the product life cycle costing technique is a method or method for calculating all the costs incurred by the economic unit of any product during its life cycle, from the moment it appears in the markets until it disappears over a period of time, which varies from one product to another.

Second: Technical assumptions about product life cycle costs: -

The concept of the product life cycle is based on a set of assumptions, according to what the researcher sees (Atwa, 2020: 65), which are as follows:

- At each stage of the product life cycle, sales and profits are different due to the different stages. Thus, it can be said that the more competition in the markets, the shorter the life of the product.

- Applying any marketing strategy at one stage may not be applicable at the next stage of the product life cycle.
- Every product has a specific life cycle similar to a human being's life, which may be longer or shorter, starting from the moment of birth until death.
- It is not necessary that the product passes through all stages of its life cycle. It is very possible that it ends at any stage.

Third: Objectives of product life cycle costs: -

There are many goals for applying the product life cycle costing technique, the most important of which are the following: (Al-Anani, 2015: 494), (Al-Jadry, 2022: 72)

1. Determine the costs of each stage during the product's life cycle, whether before manufacturing, the manufacturing stage, or after manufacturing, in order to achieve comprehensive measurement of costs for the product.
2. Clarifying the interrelationships between cost elements at each stage, studying their impact on other stages, and making appropriate decisions that lead to cost reduction.
3. Explaining the importance of the research and development stage, the extent of its impact on other stages, and how to reduce costs in the following stages, as most of the expected costs are taken by decisions. It is during the research and development phase.
4. Explaining the importance of the post-manufacturing stage, including the costs of operation, maintenance, use, disposal or recycling of the product, due to its effective role in evaluating the performance of departments in those stages and measuring their cost.
5. The product life cycle costing technique aims to determine whether the profit achieved from a particular product covers the costs of research and development or abandonment within the production period or not.

Fourth: Technical requirements and product life cycle costs:-

There are many aspects that the economic unit should take into account when applying the product life cycle costing technique: (Faramawy, 2011: 256)

- 1) Having a good costing system helps measure and control costs during the various stages of the product life cycle and provides management with the necessary data and information to develop policies and make appropriate decisions.
- 2) Obtaining information from various departments within the economic unit. This information is often divided into financial information and non-financial information. Therefore, there must be a flexible information system that allows easy flow of information between the multiple departments in the organizational structure within the economic unit.
- 3) It is necessary for senior management in the economic unit to be convinced of the objectives and advantages of applying this technology for the purpose of integration between multiple departments within the economic unit, as well as providing communication channels that help in the flow of information.
- 4) Applying the product life cycle costing technique properly requires developing a realistic plan for using the product, as there is no accurate estimate of the costs of the product during its life cycle, in addition to the lack of an accurate description of the activities that are carried out during the product's life cycle and its future use.
- 5) One of the requirements for the product life cycle costing technique is to take into account precisely determining the lifespan of the product. Therefore, the opinions of specialized engineers in the production department should be used, as well as previous experiences with similar products when determining the lifespan of the product. The time element is one of the important factors in obtaining the greatest benefit when using the technology. Product life cycle costs.
- 6) The product life cycle costing technique is linked to a certain amount of prediction of the future. Therefore, the element of uncertainty should be taken into account when applying the product life cycle costing technique, and striving to reduce the uncertainty associated with forecasting is based on correct and realistic historical data, as well as the use of statistical methods, in addition to the use of the probability approach.

Fifth: Technical reports on product life cycle costs: -

Most accounting systems emphasize the necessity of submitting accounting reports, as submitting life cycle reports for each product requires tracking the costs and revenues for each product separately within multiple periodic periods. For example, the costs of the research and development phase included in the product life cycle cost report are often incurred in calendar years. Different costs, and when tracking these costs along the entire life cycle, the total amount of research and development costs for each product separately can be calculated and analysed. This format for product life cycle reports offers multiple advantages, including: (Al-Jadry, 2022: 75).

- 1- The total costs and revenues related to each product are visible. The costs of the manufacturing process are very clear in most accounting systems, while the costs related to the upstream areas, such as (research and development costs) and the costs of the final areas (for example, customer services) are often less clear for each product separately.

2- Through product life cycle reports, it is possible to show the differences between products in the percentage of total costs they incur in the early stages of the product's life cycle. The higher this percentage, the more interested managers are in making more accurate forecasts for the revenues of that product.

3- It distinguishes the reciprocal relationships between cost categories. For example, economic units that work to reduce the costs of research, development and product design may face significant increases in customer service costs in subsequent years. These costs arise because the products do not meet the required quality levels and expected performance, and cost and revenue reports are prevented. For the product life cycle, these changes have a causal relationship between the costs of business functions, rather than being hidden costs, as in periodic income statements.

Sixth: Blue Ocean Strategy Concepts: -

Although this is strategicHIt is one of the modern strategies in the contemporary business environment, but there are many different concepts that revolve around it and which represent the opinions of researchers as a result of their different intellectual trends, and in the following table we will discuss some of them.

Table (2)

Blue ocean strategy concepts

Blue ocean strategy concept	Name of researcher and year	T
It is a strategy based on innovating or creating an uncontested market space and staying away from competition to achieve the highest possible profit margin for the economic unit and ensure its stability, thus ensuring continuity.HIn the market, it seeks differentiation and low cost at the same time to provide the best for both the customer and the economic unit by creating new demand.	(Hong & Ismail8,2011:88)	1
The Blue Ocean Strategy considers new, undiscovered areas that represent empty areas of markets that have not been reached by competitors, and thus represent pure blue markets to provide products and attract customers.	Hong,et.al, 2011:5))	2
A consistent style of strategic thinking that seeks to invent markets and industries that do not exist today, where demand is created rather than fought for, thereby outmaneuvering competitors and focusing on profitable and sustainable growth.	(Rawabdeh,et.al, 2012:392)	3
Blue Ocean Strategy, in its simple sense, is the ability of the economic unit to create a profitable and sustainable market space through which the unit can flourish and develop its products, in addition to defining a unique position in it by stopping any direct conflict with competitors. The strategy focused primarily on two elements: reducing cost and increasing value. It is worth Reference: Blue Ocean Strategy has been mentioned beforeIGOR ANSOFIIn 1965, but it was not called the Blue Ocean term at that time.	(Soudi, 2017: 2)	4
It is the mission of a successful economic unit to create value based on strategic moves and away from intense competition.	(Hassan,et.al, 2022:1490)	5

Source: Prepared by the researcher based on the sources mentioned in front of each of them.

From the above, the researcher believes that the Blue Ocean Strategy is one of the modern concepts that focuses on creating an uncontested market space to attract customers and create new demand, while at the same time seeking to achieve differentiation and reduce the cost of products with the aim of creating value for the economic unit and the customer together.

Seventh: The difference between the blue ocean strategy and the red ocean strategy: -

Table (3)
The difference between blue ocean strategy and red ocean strategy

Red ocean strategyROS	Blue ocean strategyBOS
Competition takes place in the existing market space	Create an uncontested market space
It requires beating the competition	It works to set itself apart from the competition
Fighting to capture current demand	You capture the order, i.e. create a new order
You make a trade-off between value and cost	Breaking down the trade-off between cost and value
Aligning the entire system of activities of the economic unit with its strategic choice of differentiation or low cost	It harmonizes the entire system of activities of the economic unit in pursuit of differentiation and low cost

Source: Kim, Chan, Mauborgne, Renee, 2004 "Blue Ocean Strategy" Harvard Business Review, P,5

Eighth: Dimensions of the Blue Ocean Strategy: -

The Blue Ocean Strategy includes several important elements or dimensions, which can be explained as follows:(Kriesel,2006:244), (Yang,2007:412)

- 1. Exclusion:**Most economic units try to eliminate some parts that they deem not important, and when they are excluded, they reduce costs without affecting the quality of products or the quantity of sales. It is also possible to exclude some workers who provide services that are not important to the economic unit.
- 2. Downsizing:**The Economic Unit works to reduce measures that it deems unnecessaryHThis coincides with reducing unjustified costs and also includes reducing some services provided to customers that it considers to be exaggerated.
- 3. the increase:**Increasing means that the economic unit takes some additional steps or procedures in the production process to improve the quality of the products (goods and services) provided to customers, which leads to attracting new customers and thus increasing sales and market share for the economic unit.
- 4. Innovation:**The economic unit that has a sustainable competitive advantage is the one that works to transform creative ideas into products for customers or finds solutions to problems, which helps it seize opportunities and avoid threats.

Figure (2) below shows the dimensions of the Blue Ocean Strategy:

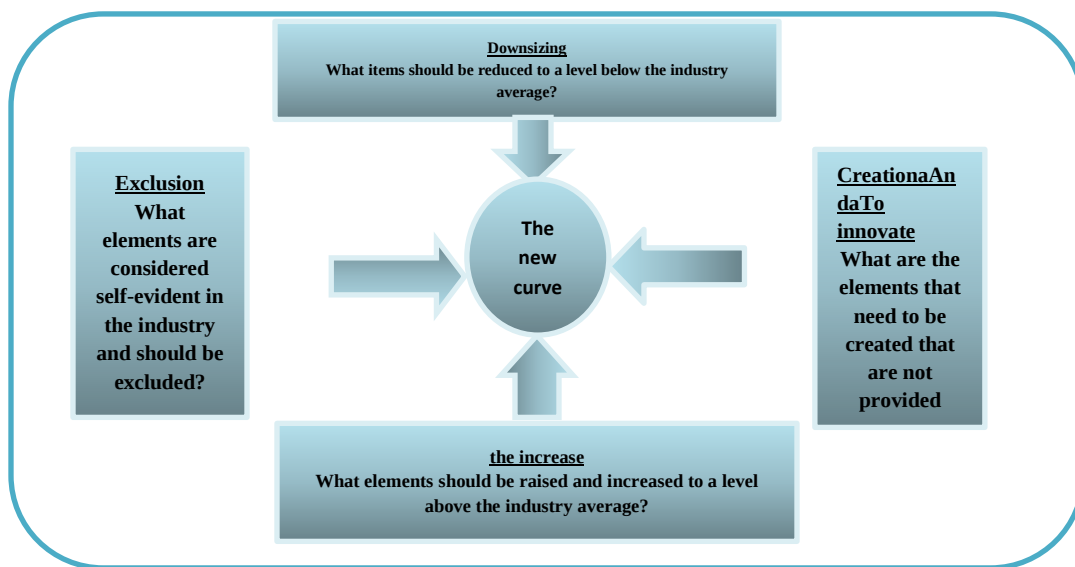


Figure (2) Dimensions of blue ocean strategy

Source: Al-Haidar, Barq Talib Abdul-Jabbar, 2020, The impact of strategic flexibility for the shift towards the blue ocean within the framework of developing the mental skills of managers, Master's thesis, College of Management and Economics, Al-Mustansiriya University, p. 83.

Ninth: Strategic characteristics of Blue ocean:

Four main characteristics will be used to analyze the concept of Blue Ocean Strategy according to the management concepts specified by researchers and based on in-depth studies in this field. These characteristics relate to naming the concept, how this concept is interpreted in different ways, are there promises to improve performance, and is the concept applicable? Universal, these characteristics can be explained as follows:

- **appropriate character:-**

Contemporary management concepts tend to be classified in a distinctive way, and often use a distinctive label that can be easily remembered by managers. The concept of strategy scores very high and advanced degrees in this field, as it can be said that the label is very attractive, as the concept of blue ocean strategy focuses on The fit between the original title and the distinctive and interesting subtitle, and the new labels for many old concepts, as well as the scale of the distinctive words that scored very high for the concept of Blue Ocean Strategy, as these words have many functions in economic units, including: shifting responsibility, claiming authority. Facilitating procedures ((Gandellini & Venanzi, 2011:

- **Performance improvements:**

Many researchers in much of the literature related to management concepts and ideas emphasize that promises to improve performance are important characteristics of any concept until it becomes widely spread, as it is unreasonable for managers to be interested in adopting any new concept if they do not realize that there are potential benefits to this adoption. Or they may fear that they will be at a competitive disadvantage if they do not adopt the strategy. The blue ocean strategy is an idea that contains, at its core, a description of how to become successful. It is referred to in the field of management-oriented ideas as one of the sources of success, and claims of potential performance improvement are very strong. general (Mol,et.al,2017:2In addition, the concept can lead to fundamental improvements in performance by outperforming the ideas of other departments. Although there is no data on the success rates of the initiatives of both the red and blue oceans, global performance differences are noticeable between them, such as automobile manufacturing companies (Kim & Mauborgne, 2005:8).

- **Interpretive space:**

One of the important characteristics of management concepts is that they are formulated in a relatively vague way, which means that these concepts are suitable for many translations and interpretations in practice. Researchers call these interpretations the interpretive space or interpretive feasibility in relation to management concepts. When examining the blue ocean strategy, it becomes clear that the concept has space. It is great for interpretation on the part of practitioners who rely on the concept of strategy and apply it in practice, as it can be said that the concept has a wide scope for interpretation, as the ambiguity of the concept means that it can be interpreted in different ways by most different readers who are required to give meaning to the concept, and given the presence of space and wide space for interpretation, it may be possible to achieve The reader ends up with his own blue ocean strategy instead of the strategy presented or intended by the creators of the concept (Clark,2004:307).

- **Global: -**

Management concepts and common ideas tend to be global in nature, and separated from the context of the specificity of the individual economic unit, as it is noted (Wittrock(Management concepts are often defined as having an independent context)Wittrock,2015:101As for the Blue Ocean Strategy, it is clear that practitioners are demanding the global application of this strategy and its framework. It is noted that this concept is presented by consultants, as it is considered a globally valid formula. Some also believe that the Blue Ocean Strategy can be applied in all industries, starting with consumer products. model and even non-profit service units, and then presenting it as a useful strategy for economic units in various fields, whether in the public sector, the private sector, or non-profit units, as universality, in addition to acceptance of the strategy, is another indicator of presenting the concept in an attractive way through institutional and cultural contexts (Leavey,2005:20).

Tenth: The importance of the Blue Ocean Strategy: -

The phenomenon of globalization and rapid changes as a result of the development of production technologies and the increasing trend of entering international markets have led to an increase in the complexity of the situation, and the elimination of temporal and spatial considerations between different countries of the world, in addition to the availability of information about products and their prices to everyone and at any time. The reason for this is due to the contraction of the market and the oversupply as a result. Due to technological developments, globalization, and the current rapid changes that occur, in addition to customer demands and the entry of new competitors into the market, which makes it difficult for the economic unit to maintain its competitive advantage for a long time, when

technological transformation breaks the intensity of competition and opens new doors for competitors to enter the markets of those who focus on these technologies, as competitors build New features quickly and competitor features are judged (Kim & Mauborgne, 2005:26). Some researchers also pointed out that the strategy is more effective in the case of saturated markets or in a state of contraction as units should target new customer groups to expand their customer base (Alam & Salam, 2017:10). Therefore, applying the blue ocean strategy helps to transform the market for the better and make it an unparalleled market. In this case, the concept of competition loses its importance, and the strategy arises and gains new demand. Thus, it breaks the principle of trade-off between value and cost, as most economic units seek to achieve cost. Low cost and differentiation at the same time, the goal of the Blue Ocean Strategy is to bring business into places that did not previously require extensive monitoring to discover it (Eskandari, et.al, 2015:197).

The researcher agrees with (Eskandari, et.al) In order to create a blue ocean, the economic unit must strive for creativity and provide products that are different from what others offer, through a set of processes and procedures that are characterized by flexibility to achieve distinguished performance that contributes to providing value to the customer and the economic unit together.

Chapter III: The role of product life cycle costing technology in implementing the ocean strategy

First: An introductory overview of the General Company for Electrical and Electronic Industries

The General Electrical Industries Company was established and electronic based on the decision of the Council of the canceled Economic Corporation taken in session (Zaqm) (45) on (17/8/1965). Following the cooperation agreement between Iraq and the Soviet Union in 1959, the company was established under the name (General Company for Electrical Appliances and Equipment), which was published in the Iraqi Gazette, No. 367, on 2/2/1967. The company began production on 4/28/1967 on land amounting to Its area is 108 thousand square meters. Then, it became one of the institutions affiliated with the General Corporation for Electrical Industries in 1970, and then its name was changed to the "General Company for Electrical Industries" after the abolition of public institutions in 1987 and its association with the Ministry of Heavy Industries, where its ownership was transferred to the Military Industrialization Authority at that time, based on the letter of the Presidential Office of Issue No. 49789 dated 11/26/1987, and the amount is in the letter of the Ministry of Heavy Industries, No. 23881 dated 11/28/1987. In the year 1993, the company became affiliated with the Ministry of Industry and Minerals on 10/25/1993, and in accordance with the provisions of the Public Companies Law No. 22 of 1997, it was decided to establish a company under the name "The General Company for Electrical Industries", with its primary location in the heart of the capital, Baghdad, in the Al-Waziriya area, with a capital estimated at (285,653,000) million dinars, based on the letter of the Ministry of Industry and Minerals No. 42213 dated 1/22/1997, which was implemented starting from 1/1/1998. At the end of 2015, the company's name was changed again to become "The General Company for Electrical and Electronic Industries" based on Article 31 of the Public Companies Law (22) of 1997. Thus, the policy of merging companies with each other was implemented, including (Al-Ezz General Company), which specializes in the manufacture of electronics and furniture. The wooden factory in the Taji area, as it was merged with the General Company for Electrical Industries under the new name, so that Al-Ezz Company became a factory affiliated with the General Company in administrative and financial terms, but independent of it in terms of production, due to Al-Ezz Company's capabilities for success in terms of material and electronic technical aspects, in addition to its To pressure public expenditures and advance the reality of companies, the General Company for Electrical and Electronic Industries consists of a group of factories distributed in different geographical locations: Al-Waziriya factories, Al-Masbah / Al-Taji factories, Al-Ezz factories in Al-Taji and the Baghdad Al-Shak factory.

Laboratories of the General Company for Electrical and Electronic Industries in Baghdad: -

The company in question has many capabilities, whether material, represented by the various production factories it owns, or human, represented by engineering, technical, and administrative cadres with long experience and practices in the company's various specializations, as the company consists of a group of laboratories and agencies: (based on the planning and follow-up department in the company General Electrical and Electronic Industries)

- Box transformer factory: This factory specializes in the production of box and electrical transformers of all capacities. As for the investment activity, there are products produced in partnership with the private sector, and these products include (repair of electrical transformers, meter boxes, digital cameras, fire extinguishers and safety equipment, crystals, cathodic protection system and lighting systems Solar energy.
- Industrial Engines and Electrical Generators Factory: It produces industrial engines and generators with different capacities, where cooperation has been made with the private sector to expand investment activity and produce larger quantities of generators with different capacities due to the country's need and increased demand for this product.

- Air Conditioner Factory: Specializes in the production of split and window air conditioners, central air conditioners, and PradaTWater in different capacities).
 - Electric Lamp Factory: It produces incandescent and fluorescent lamps, as well as healthy water, nitrogen gas, and oxygen gas.
 - Motors and Home Appliances Factory: In this factory, water pumps for chillers, air-cooled engines, chillers, home protection devices, and finally electric heaters with a capacity of 80 and 120 liters are produced.
 - Feeding Industries Factory (Main Feeding Factory): It supports the company's laboratories by supplying them with all semi-manufactured parts, meaning it includes supporting operational units.
- The company produces products with specific specifications according to the requests of the beneficiary, as it looks forward to developing new production lines and expanding

Second: roleProduct life cycle costing technology in the General Company for Electrical and Electronic Industries

Calculating the product life cycle costs for the electric heater (120 liters): -

The cost of the electric heater with a capacity of (120 liters) will be calculated according to the technology of product life cycle costs and through the point of view of production and according to the model included by the researcher in the theoretical aspect and at the disposal of the researcher in a way that is compatible with the nature of the technological path for the electric heater with a capacity of (120 liters). My agencies are:

$$PLCC = RDD\ c + M\ c + MD\ CS\ c$$

Since:

PLCC: The total costs of the product's life cycle.

RDD c: Costs of the research and development stage.

M c: Costs of the manufacturing stage.

: MD CSMarketing stage costs and after-sales services.

1: Calculating the costs of the research and development phase: -

Research and development costs focus on conducting studies and researchContinuously develop water heaters with standard specifications that meet the ambitions and desires of customersThe costs of the research and development phase include the costs of the Planning and Follow-up Division, the Technical Division, the Projects Division, and the Information Technology Division. The costs are measuredThe heater is inThe research and development stage is at the maximum level of energy available to the factory600 heaterannuallyThe share of each heater amounts to 12,000 dinars of research and development costs at the level of available energy.

2- Calculating the costs of the manufacturing stage: -

A- Costs of the internal tank manufacturing stage The internal tank consists of a group of important parts that represent the outputs of sequential production processes that the product goes through. Based on the records of the Financial Division and the Technical Division, in addition to the field experience of the researcher at the General Company for Electrical and Electronic Industries, she found that the cost of raw materials for one heater from the internal tank is as shown in the following table:

B - Costs of making the outer coverThe outer casing is one of the basic and important parts of the electric heater (120 liters), as it is manufactured from zinc-coated steel sheets (pallet). These sheets go through several production processes to give the final shape to the casing. Among these processes is cutting the pallet using a scissors machine first, then the places of the heater bushing and bushing are perforated. The tube and the location of the thermometer, then move to the longitudinal skirting machine to make a longitudinal skirting machine for the ends, then assemble the edges of the piece to become in a cylindrical shape, then using the circular skirting machine a circular skirting machine is made for the upper and lower ends, and after completion, the outer cover is dyed with thermal powder dye so that it is ready for assembly with the outer covers. Which in turn goes through stages similar to the stages of the outer shell, and the table below shows the cost of the raw materials for the outer shell of the heater.

C - Costs of the final assembly phase of the electric heaterThis stage consists of assembling the parts and components of the electric heater (120 liters) together to obtain the final shape of the heater.

Through our presentation of the previous stages that the heater goes through during the manufacturing stage of the electric heater (120 liters), we can obtain the total cost of raw materials through the table below.

Table (4)Costs of raw materials for an electric heater with a capacity of (120 litres) for the year 2022

the cost	the details
60575.538	The cost of the internal tank stage of the heater
11607.84	The cost of the outer cover stage of the heater
30666.6363	The cost of the final assembly stage of the heater

102850.014	The total cost of raw materials for the heater
------------	--

Source: Prepared by the researcher based on the previous table

The manufacturing stage includes direct labor costs, which were determined by the researcher and based on the cost records of the General Company for Electrical and Electronic Industries. The direct labor cost for the electric heater with a capacity of (120 liters) is (7,812) dinars/heater, and the share of one heater in the fixed costs is It is represented by work costs and expenses, in addition to other expenses (10,000).

After determining the cost of direct materials, direct labor cost, and fixed cost during the manufacturing stage, we obtain the cost of the electric heater (120 liters) during the manufacturing stage, as in the table below.

Table (5)Electric heater costs (120 liters) during the manufacturing phase in 2022

The share of each heater from the costs of the manufacturing stage		the details
Total	partial	
	103000	raw materials
	8000	Direct action
111000		Direct cost per heater
	8000	Backup tools
	5000	Fuel and oils
	5000	Electricity
18000		The cost of indirect industrial expenses
129000		Total variable costs per heater
	4000	the job
	3000	Extinctions
	3000	Other expenses
10000		Total fixed costs per heater
139000		The total cost of the electric heater during the manufacturing stage

Source: Prepared by the researcher based on the previous table above, as well as the records of the Financial Division

It is clear from the table above that the cost of direct raw materials was determined in Table No. (20), while the direct labor cost was determined in Table No. (19). As for indirect industrial expenses, it was determined based on the records of the Financial Division, in addition to the fixed cost that was determined in Table No. (20). By adding the above-mentioned costs, we obtain the cost of the electric heater (120 liters) during the manufacturing stage.

3- Calculating the costs of the marketing stage: -

The cost of the marketing stage includes the costs of the Marketing Division, whether they are the costs of marketing studies required by the product in the sales stage or in the design and development stage of the product, as well as other marketing operations, in addition to the share of one electric heater from the administrative cost. The table below shows the marketing and administrative cost of the heater.

Table (6)Electric heater costs (120 liters) during the marketing phase for the year 2022

The share of each heater from the marketing and administrative costs	the details
3000	Marketing costs
3000	Administrative costs
6000	total cost

Source: Prepared by the researcher based on the records of the Financial Division in the Economic Unit, the research sample

The table above shows details of the marketing and administrative costs related to the electric heater (120 litres). The marketing cost for one heater is 3,000 dinars, while the administrative cost is 3,000 dinars. By adding the marketing and administrative costs, we get the cost of the heater during the marketing stage.

After calculating the cost of each stage of the product life cycle (research and development stage, manufacturing stage, marketing stage), which was included in the approved model for measuring the costs of the product life cycle

represented by the electric heater (120 litres), it is worth noting, after reviewing the actual reality of the company General Electrical Industries Company's system lacks a recycling stage in relation to...QWith an electric heater (120 liters), so we can say that the product life cycle costs for the electric heater are as follows:

Product life cycle costs for the heater= Costs of the research and development phase + costs of the manufacturing phase

+ Marketing stage costs
 = 12000 + 139000 + 6000
 = 157,000 dinars

Third: Implementing the Blue Ocean Strategy in the General Company for Electrical and Electronic Industries

Through the researcher's field experience in the laboratory of the economic unit, the research sample, reviewing the details of the work in the departments and divisions, and numerous interviews conducted by the researcher with officials in the unit, the researcher determined the mechanism for implementing the strategy in its four dimensions according to the costs of comprehensive quality, as follows:

1- The dimension of exclusion:-

By applying this dimension, costs that burden the cost of the product without achieving value and can be dispensed with are excluded.

2- Dimension of reduction: -

By applying this dimension of the Blue Ocean Strategy, some unnecessary costs have been reduced and do not affect the quality of the product, which can be dispensed with by unifying some processes. Thus, time and effort are shortened and costs are reduced at the same time, in addition to training the company's employees on the use of modern cost techniques to improve performance. Reducing costs resulting from traditional methods.

3- Dimension of increase: -

To increase the quality of the product and the way it is presented, in addition to increasing marketing outlets to deliver it to customers and achieve their satisfaction, research and development costs must be increased to increase the expenses allocated to conducting research to develop products and determine the reasons for the decline in demand and the decrease in market share. Through interviewing officials, the special costs for this were determined, estimated at 3,000,000 dinars. The General Company for Electrical and Electronic Industries also seeks to achieve this.

4- The dimension of innovation:-

This dimension is the main foundation of the Blue Ocean Strategy and this is due to the importance of the role it plays, which is to find and create new ideas to provide products that satisfy and meet the needs of customers, as the general company constantly seeks to improve the quality of the products and present them in a way that distinguishes it from the rest of the competitors, as it works on continuous communication with the work environment. As well as learning about new ideas presented by customers to benefit from developing the product. The general company began developing the electric heater and manufacturing the solar heater that runs on solar energy, and work is still continuing in this direction. Through the previous presentation of the dimensions of the Blue Ocean Strategy, a table can be prepared that shows the implementation of the strategy in light of the costs of comprehensive quality.

Find out (7)Implementing the Blue Ocean Strategy in light of comprehensive quality costs for the year 2022

Total costs in dinars	Research and development costs	Failure analysis costs	Scrap costs	Internal audit costs	Design costs	Re-examination costs	Test equipment calibration costs	Information costs	Type of costs of Ocean strategy
3426882	-		-	-	-	2185933	166685	1074264	The dimension of exclusion
1534684	-	560250	580783	225596	168055	-	-	-	Dimension of downsizing
3000000	3000000		-	-	-	-	-	-	Increase dimension
-	-	-	-	-	-	-	-	-	The innovation dimension

Source: Prepared by the researcher.

From Table (33) above, it is clear that information costs amounting to 1,074,264 dinars have been excluded, in addition to 166,685 dinars, the costs of calibrating inspection equipment, as well as re-examination costs, which amount to 2,185,933 dinars. The reason for this exclusion lies in the fact that an amount of 3,426,882 dinars can be saved without prejudice to this. In the quality levels required for the product, in addition to that, the costs of some activities can be reduced, including design costs, as an amount of 168,055 dinars was found that can be dispensed with because designs of previous years are often relied upon with minor modifications to them, in addition to reducing internal audit costs that do not add a value of 225,596 dinars, as well as reducing scrap costs and failure analysis costs. In this case, an amount of 1,534,684 dinars is saved through one of the dimensions of the Blue Ocean Strategy, which is the reduction dimension, while research and development costs can be increased by an amount of 3,000,000 dinars in order to increase research and work to develop the product for the need. The economic unit in order to maintain its market share and get out of the intense competition in the markets, as work has been done on this and the General Company for Electrical and Electronic Industries has actually begun working on developing the electric heater and manufacturing the solar heater that works on solar energy, and it is in the experimental phase at the present time. Therefore, the researcher was not able to accurately measure its costs, thus the fourth and basic dimension of the Blue Ocean Strategy, which is the innovation dimension, has been applied.

Chapter Four: Conclusions and recommendations

First: conclusions

- 1- The unified accounting system makes it difficult to adopt the economic unit of contemporary cost techniques, including product life cycle costs, as it suffers from deficiencies in identifying, measuring, and classifying costs and providing information about them.
- 2- The Akkad factory for manufacturing electric heaters (research sample) lacks a recycling stage, as attention to this stage contributes to achieving savings in resources as well as a relative reduction in costs.
- 3- Applying the dimensions of the Blue Ocean Strategy contributes to achieving uniqueness from other competitors by providing innovative products.
- 4- M suffers Akkad work for the manufacture of electric heaters (research sample) Due to the lack of financial resources and the lack of electrical power supply The command Which is reflected in the low level Production The sales volume is compared to the designed and available capacity of the factory, despite the technological development enjoyed by the line Productivity This is due to the oversupply of imported competing products that are drowning Markets Local and which no Most of them meet the requirements for quality and quality control, the reason for this is the absence of a role Devices Censorship and discouragement of the national product, silver no About the establishment of some state departments By turning around On the instructions and laws in order to purchase from Markets Local.
- 5- The loneliness Economic It did not collect its data in order to determine the actual cost of Mint And CElectric heater capacity of 120 litres Silver no Therefore, it relied on pricing its products the prices prevalent in Markets local don Taking Look Consideration Product cost And C, which leads to a defect in the decision-making process Administrativewhich belongs to Electric heater capacity of 120 litres And even no You can find out if they sell the heater Win or lose?.

Second: Recommendations

- 1- Updating the unified accounting system applied in most units no Iraqi economic system, in line with the Contemporary technologies Such as product life cycle costing technology And C And Application of contemporary costing techniques Especially the blue ocean strategy So that the unified accounting system provides accurate information about costs for units Fitting for Tasdiya.
- 2- Strengthening the recycling phase operations because of their important role in reducing waste Lac Natural and rare resources involved in the process Productivity Consequently, this is reflected in the reduction of product costs And It was broken no On preserving natural resources from depletion in order to achieve sustainable development.
- 3- application strategic H Blue ocean Because of its important role in exclusion Activities Non-host of value which no Related to quality The command Which enhances the quality of the product And c It comes and makes it With leadership It reduces the costs of these products And This enhances the competitive advantage of the units Economic.
- 4- a To focus on knowing the needs and desires of customers in order to meet them during Procedure Market research and studies, silver no About developing the marketing strategy for the factory, the research sample, with the aim of reaching the largest possible number of customers and introducing them to the characteristics and advantages that characterize the product. And C This is done through Procedure Campaigns Ad Introducing citizens to The quality of Mint And C And Its efficiency compared to Mint And Competition and product promotion came And C via social media Social Being a prevalent promotional tool close to customers, the research sample factory should also open a number of distribution and direct sales outlets. on B level Ld.

5- Developing and developing the capabilities of cost accountants with the aim of enabling them to apply accounting techniquesAdministrativeIncluding product life cycle costsAndC Because these techniques contribute to improving the quality of the productAndGat and reduce costsAnd the responseTo the needs and desires of customers, which enhances Mint's competitive advantageAndC Factory sample search.

Sources

First: Arabic sources

- 1- Al-Mahna, Qusay Abdul-Aimah Aswad, 2020, Integration of the techniques of target costing and time-oriented product life cycle costing and its impact on cost management, an applied study, master's thesis, University of Karbala, College of Administration and Economics, Karbala.
- 2- Remove. Fouad Muhammad Mahmoud, 2020, The role of integration between the product life cycle cost accounting system and strategic cost management approaches in enhancing the competitiveness of small and medium-sized industrial establishments in the Gaza Strip (case study), published research, Journal of the Islamic University for Economic and Administrative Studies, Islamic University, Gaza, Volume 28, Issue 4.
- 3- Gigan. Huzam Faleh, 2021, The importance of the comprehensive cost of the product life cycle in reducing costs using value engineering and continuous improvement, an applied study, published research, Al-Muthanna Journal of Administrative and Economic Sciences, Central Technical University, Technical Management Institute, Iraq.
- 4- Ani.Khalil Al-Qazzaz. Ismael, Corel.fair,2002,Total Quality Management 2000 and requirementsISO9001,Printing pressThe blonde, Baghdad.
- 5- Atwa. Heba Hassan Muhammad Hassan, 2020, Analysis of the relationship between the two methods of product life cycle costing and target costing and their impact on the success of medium and small projects, published research, Scientific Journal of Commercial and Environmental Studies, Volume 11, Supplement to Issue 4.
- 6- Fermawi. Abdul Rahman Mustafa Abdul Azim,2011The role of the product life cycle costing method in rationalizing decisionsAdministrative**Scientific Journal of Business Research and Studies**, Issue 4 , Helwan University College of Commerce and ManagementBusiness, Egypt.
- 7- Aljadiri. Durgham Ahmed Abdel Redha (2022), "Product life cycle costs and green quality management and their impact on improving the competitive advantage of Iraqi economic units", PhD thesis, University of Baghdad, College of Administration and Economics, Baghdad.

Second: Foreign sources

- 1- Kim. Chan, Mauborgne. Renee, 2004, Blue Ocean Strategy, Harvard business review, Harvard business school press, France.
- 2- Wang. Fengzhou, Ke. Tengmin, 2016, The Strategic Framework of Product Life Cycle Cost Management, International Conference on Education, E-learning and Management Technology (EEMT 2016), China
- 3- Hong.Alex Ng Hong, Ismail. Wan Khairuzzaman bin wan, 2011, Blue Ocean Strategy: A Preliminary Literature Review and Research Questions Arising, Australian Journal of Basic and Applied Sciences, 5(7): 86-91.
- 4- Saudi. Nada, 2018, Blue Ocean Strategy: Is it specific to radical innovation?, Conférence Internationale in Economie-Gestion & Commerce International.
- 5- Hussein, A. Al-Gamdi, & Mohammed AL-farhan, 2013, "TQM –Organization support of employees", Journal International, Journal management. Turkey.
- 6- Kim. W. Chan, Mauborgne. Renee, 2017, "Blue Ocean Strategy", 1 Ed, New York.
- 7- Lainos. I, 2011, "Red Ocean vs Blue Ocean Strategies", Unpublished masters thesis from University of Piraeus.