Target Cost and its Role in Cost Reduction and Product Development (And Applied in Engineering Industrial Companies)

*Khaleel Radhi Hasan Alzlzly
Al-Furat Al-Awsat Technical University, Technical Institute of Samawa
Email : khlznb2016@gmail.com

Abstract-The objective of the research is to highlight the role of the target cost in the industrial projects represented by Al Muthanna Cement Plant and Samawa Cement Factory in particular, and in some developed countries in general. Where the main objective of the research is achieved through the following sub-goals, The conceptual framework of the target cost system, its concept, objectives and principles, Study the advanced management and productivity systems that help the target cost system to achieve its objectives, Benefit from the experience of some projects used for this system, especially Japanese projects, An applied study was conducted on the cement plants in Muthanna which have large capital and the extent of their application to the target cost system. The data were collected using the questionnaire and some personal interviews were conducted. The data were then tested using a set of descriptive statistical methods, Frequency, arithmetic mean, standard deviation), for the purpose of testing the correctness of the following research hypotheses: There is a possibility to apply the target cost system in some engineering and industrial projects. The target cost system leads to reduced costs for products in industrial projects. Target cost system provides important information to help in engineering product development. The research was divided into three sections: The first topic dealt with the theoretical framework of the target cost system. The second topic dealt with the systems that help the target cost system in reducing costs and engineering product development. In the third part, the field of study was concentrated in the Muthanna Cement Factory and Samawa Cement Factory. A questionnaire was conducted to determine the degree of acceptance and application of the hypotheses above by using the five-dimensional Likert scale and statistical analysis of the questionnaire using the statistical (SPSS) program to determine the suitability of the hypotheses for the application. At the end of the research, some conclusions were reached and some recommendations were made to implement the target cost system.

Keywords: Target cost, reduce costs, product development.

1- Introduction

Target cost system is considered one of the most important and the best modern cost management systems, because it is supposed to work on reducing costs and developing products without compromising the quality of the products. The system also focuses on satisfying the customers' desires continuously to achieve the highest percentage of sales and profits [1].Where the system starts its work since the stage of planning and design, by studying the market and conditions of supply and demand to identify the quality of products desired by customers and according to specifications and prices that suit them.This goal generates a sense of responsibility for all individuals working in the project, especially those who have a direct relationship with the design, as well as beyond the sense even to suppliers in order to reduce the cost of their products whether raw materials or manufactured initially[2].This is evidenced by the many researches and studies that have emerged in order to explain and clarify this system and what its objectives are and the pilot projects that it has used.The global cost system has emerged in violation. Because his activity goes beyond the coordination process it's a system that starts from this program so far [3].This system designs products that meet customers' needs and satisfy their needs with appropriate quality and price [4].

Among the reasons that led to their occurrence and planting well, these products became non-flammable [5]. There is also excessive production and activities that cannot be used in treatment. There are two concepts associated with the concept of basic standard cost.The main objective of the research is to identify the role of the target cost in reducing costs and product development in industrial projects, and the extent to which this system can be applied in industrial projects working with the Japanese experience.The problem of research is to study the feasibility of applying the target cost system to industrial projects in order to reduce costs and develop products similar to the Japanese companies that implement this system, which led to the spread of products with technological development and the right price.The target cost system is one of the most important modern cost management systems. It has been used in Japanese projects as well as in some other developed countries for the

*Corresponding Author: Khaleel Radhi Hasan Alzlzly,Email id : khlznb2016@gmail.com
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purpose of cost reduction and engineering product development. The system utilizes some advanced management and production systems such as QFD, Value Engineering (VE) and Continuous Development System (CI), as these systems are consistent with the cost target system in the importance of reducing costs while maintaining the quality of the products and fulfilling customer desires.And for the purpose of benefiting from the experience and knowledge of these companies that apply this system as well as the purpose of keeping pace with the development in the industrial field and achieve further progress in Iraqi industrial projects with the possibility of applying this system.

For the purpose of achieving the objective of the research, the validity of the following hypotheses should be tested:

1-There is the possibility of applying the target cost system in industrial engineering projects in Iraq.

2-The application of the target cost system leads to reduced costs in industrial engineering projects.

3-The target cost system provides important information to help product development.

4-The target cost system cannot be applied to industrial projects because of some constraints that limit it.

In order to test these hypothesizes, the research is divided into three sections as follows: the conceptual framework of the target cost system, the systems that help the cost system target in reducing costs and product development. Which lead to focus on the field of study in Al-Muthanna Cement Factory and Al-Muthanna Cement Factory.

2- Conceptual Framework of The Target Cost System

“It is the estimated price of the product that the consumer is willing to pay for the product, the first point and the price to be paid by the consumer, to know the reaction of competitors against that price." [6]."Is one of the cost management tools that costs to produce”[7]".Cost in the initial stages of product design, and care for production processes according to market requirements"[8]."A set of finches that have been formulated to identify the required levels of cost levels, which are usually phased in, to facilitate the financial objectives planned by the administration"[8].Target cost concept can therefore be defined as: (from the researcher's point of view):

It is one of the effective and comprehensive cost systems, which is concerned with the coordination and organization of all stages and sections of the project from the planning, design, production and control, in order to provide a variety of products of appropriate quality and low costs, and have sophisticated functions that satisfy the needs of customers and achieve the required profits and important market position.For the purpose of determining the target price, the following conditions must be met to achieve the product profit target as follows:

1-The needs and desires of customers related to the physical and aesthetic characteristics of the engineering product.
2-The price that customers are willing to pay for the functions and characteristics that characterize the product.
3-Analyzing the characteristics and prices of competing products.
4-Put the product in the market and its place among competitors.
5-Analysis of competitors.
"The amount of profit that the management wishes to obtain from the designated product, which is determined on the basis of a long-term or medium-term profit plan that reflects the strategic planning of the project" (Kato, 1993, 33).Target profit can be defined by setting a total profit margin for all products in the production line, and then dividing the total profit margin specified on all products to reach the target profit for each product.

There are many internal and external factors that affect the process of determining the profit margin are:

*** Internal Factors:**
-Strategic planning (long, medium or short term) .
-Flexibility in setting the target profit margin.
-Total profit.

*** External Factors:**

-Analysis of competitors.

-Quantity of sales.

-The necessity or perfection of the commodity.

- The level of customer income.

The target cost is divided into several sections according to the stages the product undergoes during its life cycle. One study has divided the target costs as follows:[9].

1- **Targeted Manufacturing Costs:**
- Target cost for design.
- Targeted cost of production.
- Targeted cost of selling expenses.

2- **Customer Target Costs:**

- Targeted cost to run the product.

- Targeted cost of product maintenance.

-Target cost for product sales returns.

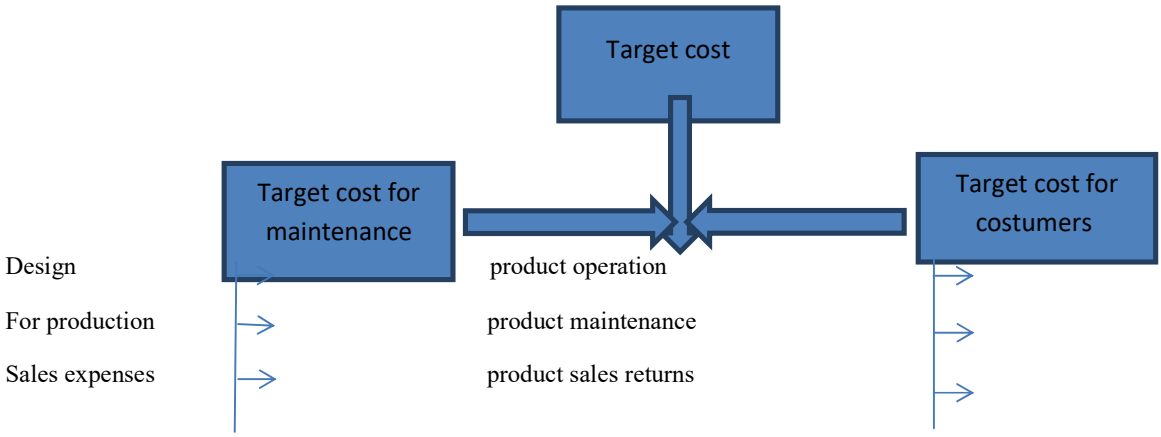

Figure 1: conceptual Framework

3- Systems of The System of Cost Target in Reducing Costs and Engineering Product Development

Target cost system in industrial projects aims at reducing costs and developing products mainly, using some advanced administrative and production systems, which are consistent with the importance of focusing on the customer and satisfying his desires by providing advanced products of quality and suitable costs.One of the most important systems to assist the target cost system in achieving its objectives is the system of testing and design of quality function (Quality Function Deployment) Value Engineering system and continuous improvement system, where it emerged that each of these three systems have an effective role In order to achieve the desired objectives in cooperation with the target cost system through previous studies of these systems.

1- the target cost system determines the product to be produced or developed, and determines its target cost, which will be designed and produced within its limits. QFD test system then studies all parts and components of the product to determine the most important specifications and parts that should be included in the product.

2- here comes the role of the value engineering system (VE), which performs the process of ascertaining the effectiveness of parts of the previously specified product and its importance in producing the

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product as required. It also detects the parts that are expensive and do not add value to the product to get rid of them and replace them with the best that achieve the target cost.

3- The role of the system of continuous development (CI), which plays the role of the radical changes needed by the project or the production process to reduce costs and develop products, through permanent control and detection of the incidence of rising costs and causes and try to get rid of them once and for all.

In the current circumstances and as a result of the strong competition between the advanced projects to provide the best products, these projects have started to reduce costs and develop the products from the first phase of the project until the completion of the product.Therefore, these projects sought to reduce costs without compromising the quality and quality of the product. The cost reduction was defined as "achieving real and permanent reduction in the cost of the activities carried out by the project or the cost of the unitproduced without affecting the quality of the product or its functions."[10].It also defined "getting more benefits from the same resources (inputs), or getting the same outputs with less input" [11].Therefore, the target cost is concerned with reducing costs since the beginning of the planning and design phase. The principle of prevention is better than cure, and by all possible means of reducing costs after determining the target cost. As well as focus on close relationship and cooperation with suppliers in order to reduce costs.As for the product development process, the target cost is the effective way to ensure the profits required in the development of products, as the costs of development within the target cost, in addition to the process of development and cost target go side by side in parallel, Save time, effort and hence costs.

1- Quality Function Deployment:

The system of testing and design of the quality function is one of the most innovative management methods in the development of products, which is used in the decision-making process regarding the specification of the functions and product, despite the difference and multiple views of customers towards those specifications and functions required [12].This system starts work since the design stage, which helps to reduce or prevent errors and thus save time, effort, money and improve quality [13].Therefore, this system is considered as a system of assistance to the target cost system in achieving its objectives of reducing costs and developing products.This system is defined by ASI as "the system that meets the needs of consumers in the form of products, having identified all the internal project possibilities and its divisions of manufacturing, distribution, installation, marketing and other services and develops."[14].

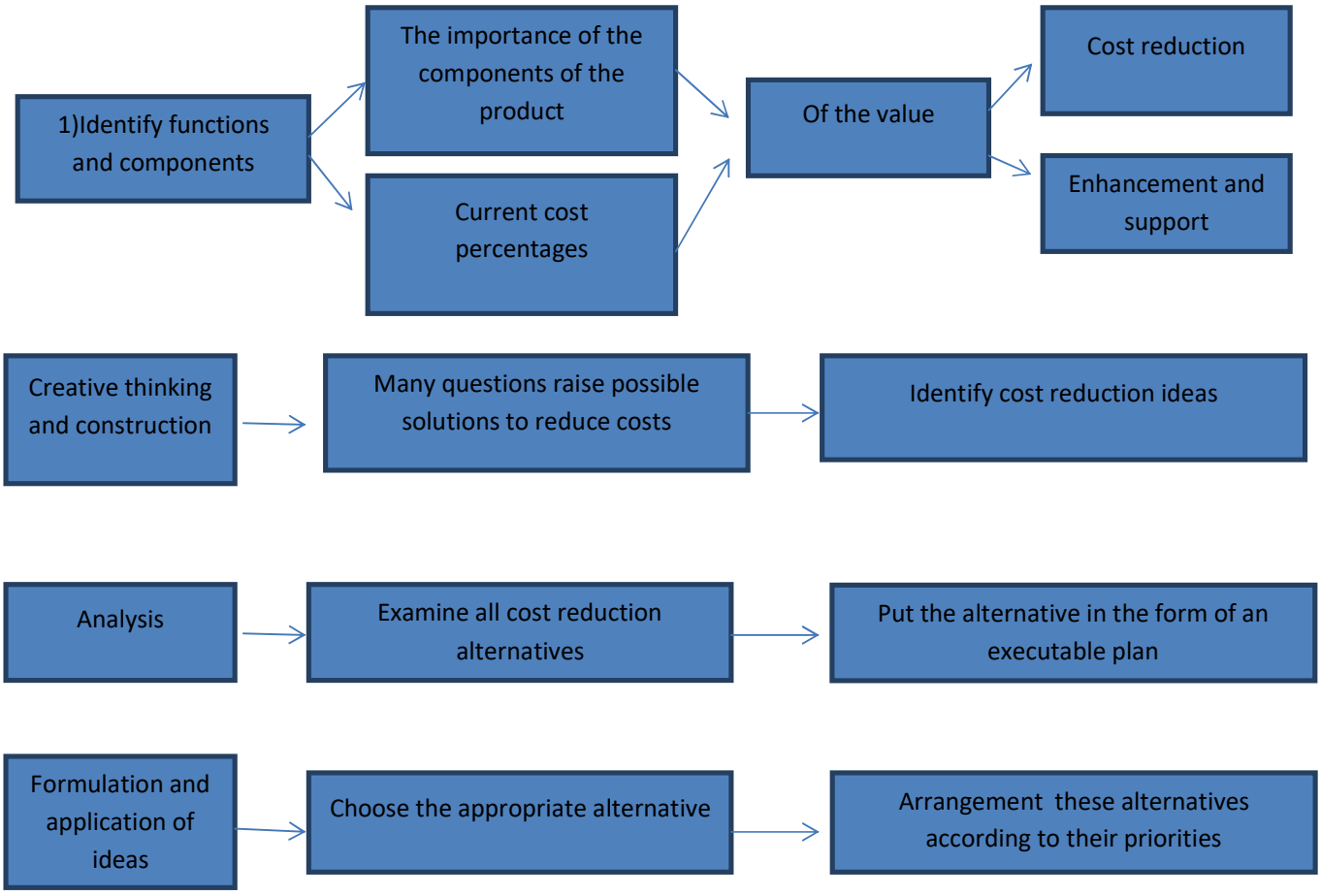
It is also known as "the technology that determines the most important characteristics and specifications of the product required, and ensures the actual realization of products throughout their life cycle."[15].QFD has proven successful in many industrial and service legislations, such as: automotive, electronics, household appliances, clothing, plastics, construction tools and agricultural vehicles, as well as retail and factory designs. [16] Application Method (QFD): QFD is a comprehensive and organized way of arranging decision-making information for product design as it ensures product design with the quality and specifications required by customers. The narrow and limited meaning of applying this method or technique is to use it as a mechanism to arrange data for product design and to compare the components and characteristics of this product with the characteristics required by customers and between competing offers[17].

2- Value Engineering System (VE)

It reduces the costs by analyzing the components of the product and its functions in a scientific way that through the identification of the parts Which must be contained in the product and those that should be deleted and replaced with better ones.This system starts from the planning and design stage. It is in line with the target cost system in terms of cost reduction, quality assurance and customer satisfaction[18].The value engineering system was defined as "a serious attempt to link cost to productivity without compromising quality reduction."[19].It was also known as "the means to identify certain jobs that meet the predefined customer requirements at the lowest cost."[20].The application of the value engineering system in Japanese industrial projects is morecomprehensive than in Western projects. In Japanese projects, the product is produced within a target cost and therefore the cost reduction is limited to a certain number or amount, while in Western projects the reduction in costs is unrestricted unrestricted or so-called absolute reduction [21].The system of value engineering is based on the analysis of the functions of the product and the identification of its components, and then the restructuring of those functions that cause the increase in costs without being contributed to the required form in the output of the product [22].This is done through the following steps:[23].Identify and define product

components to be covered by the reduction process and those requiring further support, stimulate creative thinking and construction, Analysis and Formulation and application of ideas.

Following diagram shows the steps of the value engineering system:



Continuous Development System (CI):

This system is known as "Kizen" by Japanese enterprises, under the name of continuous development (CI) or Value Analysis (Value Analysis) by US projects. (Ansari, et al., 1997).It is one of the distinguished Japanese systems.[24].It is a system based on caring for the morale of individuals and developing their intellectual ability to innovate, identify problems and find radical solutions to them. As well as the development of team spirit and the ability to work together, so that the goal of the individual is the same as the goal of the group as a whole [25].The system of continuous development has been defined as "the actions that are undertaken to maintain the level of production costs without rising, or to reduce these costs to the lower level and expected based on the strategic planning of the project."[26].It was also defined as "the common factor between philosophy, systems and problem-solving mechanisms, a Japanese system of origin and origin, because it appeared in Japan 30 years ago." (Ta'imah, 2010).He also defined the "critical examination of the functions of the product in order to implement these functions with a high degree of confidence and reliability and the lowest possible costs." [27].

- Characteristics and principles of the system of continuous development:[28].

-Continuous assessment.

-Use the Deming industrial principle (plans, design, monitor and verify, work, set benchmarks for best performance).

-Focus on the use of documents and documents.

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-Setting standards for best performance and best innovative solutions.

-Use the principle of visual management or flexible management Visual Management, which means the participation of all workers in the development of manufacturing plans along the career ladder.

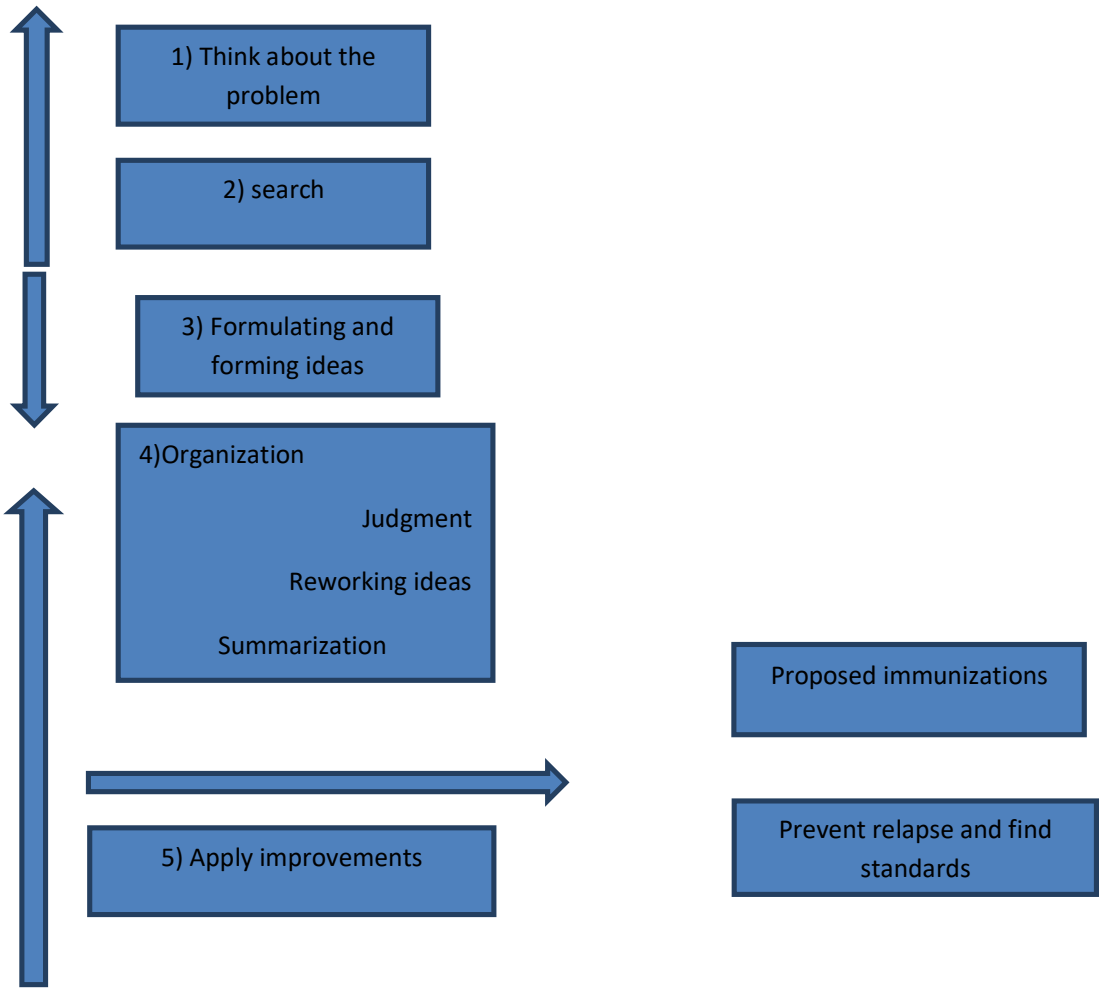
-Use the principle of time management, which means completing tasks in as little time as possible.

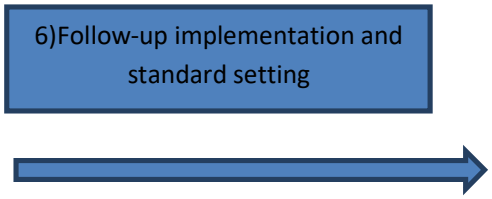
Method of implementation of the system of continuous development (CI)

The method of continuous development system is summarized in those civil industrial activities carried out by the system to eliminate the losses and faults and defective production, in addition to those activities aimed at the development of production revenues through the development of capabilities and competencies of workers. But sometimes there may be some obstacles to the process of continuous development. These barriers are known as the SiolSyndrom group, which means that groups of workers have priorities and objectives that are focused and different from the objectives of the project and cause a significant loss of resources and Production process, loss of time due to waiting time, bad communication, slow transfer of products, access to useless information, loss due to defective products, or loss due to low creative capacity of employees.And the reason for the occurrence of these salutations is the flow of the administrative process in a vertical (ie from top to bottom, and the lack of participation of all administrative levels or workers in the manufacturing plan or decision-making).

While the production process flows horizontally (towards customer satisfaction, involving all staff at different levels). These intersections and variations can be avoided by following these steps:

1-Management of the administrative process (90) degree towards the horizontal situation.
2-Give each group of these groups the appropriate authority to manage itself.
3-Try to combine the views and decisions of all groups, so that they agree on the method of manufacturing the product.
And after following the preliminary steps that would eliminate "concurrent devices" that hinder the process of continuous improvement of any part or stage of the project.
The process of improvement can be divided into two basic phases, which are separated by some of the steps illustrated in the following figure:(Ibid. 228, 229)





6- A field study in Al-Muthanna Cement Plant and Samawa Cement Plant:

The study aims at demonstrating the ability to apply the principle of cost target and its ability to reduce costs and improve products. Where the researcher prepared (30) paragraph within the scale of Likert pentagram and using the statistical method through the program spss to test hypotheses the subject of the research through three axes. Through statistical processing in the SPSS program (frequencies, arithmetic mean, standard deviation, and percentages) of the five-dimensional Likert scale:

Table 1: Characteristics of the study sample

Response	The weighted average	General trend
Strongly disagree	From 1 to 1.80	Strongly disagree
I do not agree	From 1.81 to 2.40	disagree
Neutral	From 2.41 to 3.20	Fairly true
I agree	From 3.21 to 4.20	agree
Strongly agree	From 4.21 to 5	Strongly agree

First: Characteristics of the study sample:

For the purpose of determining the sample of the study, some inquiries were made for the purpose of answering them by the participants in the questionnaire:

Table 2: General information

Service years	**number**	**ratio**	**age**	**number**	**ratio**	**Science degree**	**number**	**ratio**
Less than 10 years	3	10%	From 25 to 30 years	6	20%	high	3	10%
From 11 to 20 years	11	36.7%	From 31 to 45 years	19	63.3%	BA	15	50%
From 21 to 30 years	14	46.7%	More than 45 years	5	16.7	diploma	7	23.3%
More than 31 years	2	6.6%	-------	-------	-------	Secondary	5	16.7%

The above table represents general information about the sample of the study, which is represented by the workers in the calculation sections in the cement plant (Al-Muthanna and South Samawah currently), which is (scientific qualification, age, number of years of service).

Table 3: Axis One

No	**Paragraphs**	**Arithmetic Mean**	**Standard Deviation**	**Percentages**	**Chose**	**Level of significance**
1	The Company has an effective accounting information system that relates to the target cost.	4.60	0.51	60%	Strongly agree	000
2	The Company uses a cost accounting system to suit its industrial activity.	4.00	0.66	60%	Agree	000
3	There is interest by senior management in cost	4.00	1.24	50%	Strongly	000

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	management.				agree	
4	The company enters its employees with training courses for the target costs.	3.50	0.85	70%	Agree	000
5	The company evaluates all its activities through individuals and their contribution to achieving the target cost approach.	2.60	0.96	60%	No agree	000
6	There are continuous channels of communication between customers and company departments.	3.40	0.69	50%	Agree	000
7	The company develops relations with suppliers according to the principle of cooperation between the parties.	3.50	0.97	50%	Agree	000
8	The Company has sufficient product information for the purpose of working on the cost-target principle of cost management.	3.80	1.31	40%	Strongly agree	000
9	Management relies on the delegation of authority to encourage administrations to innovate.	2.80	1.03	40%	Agree	000
10	The company encourages employees and develops their abilities in various disciplines.	3.50	0.97	50%	Agree	000
11	Axis as a whole	3.37	0.58	53%	Agree	000

The questionnaire for the first hypothesis shows whether there is a possibility of applying the target cost system. The mean is 3.57, which is acceptable by dividing the five-dimensional Likert scale as well as the standard deviation (0.58). The relative weight of the test is (53%) which is good, so the hypothesis is accepted. The first question (the company has an effective accounting information system that relates to the target cost) is based on an average (4.60), a standard deviation (0.51) and a relative weight (60%). The lowest percentage of the fifth question (the company evaluates all its activities through individuals and their contribution to achieve the target cost input), which the average of the calculation (2.60) with a standard deviation (0.96) and a relative weight (60%) and choose (do not agree).

Table 4: Axis Two

No	Paragraphs	Arithmetic Mean	Standard Deviation	Percentages	Chose	Level of significance
1	The company reduces costs by examining the level of technology used in the production process.	3.00	1.41	60%	Agree	000
2	The company studies the prices of the raw materials involved in the production process and is necessary to reduce the cost.	4.50	0.42	80%	Strongly agree	000
3	The company identifies customer needs and contributes to cost reduction.	3.60	1.17	50%	Agree	000
4	The company coordinates design management and marketing management in order to reduce costs.	3.80	0.42	80%	Agree	000
5	The company is studying competitive prices in the market to reduce costs.	3.90	99%	50%	Neutral	000
6	The company encourages employees to increase production while reducing cost.	3.70	1.88	60%	Strongly agree	000
7	The company studies the advantages and components of the product to know the competitive advantages and their impact on cost reduction.	4.10	0.87	40%	Strongly agree	000
8	The company is studying the sources of	3.90	0.56	70%	Agree	000

	material supply which contribute to reducing costs.					
9	The company uses the QFD test system for products.	3.50	0.52	50%	Agree	000
10	The management of the company uses the principle of cost for the purpose of reducing costs by studying the desire of customers as well as product design.	4.00	0.47	80%	Agree	000
11	Axis as a whole	3.80	0.39	62%	Agree	000

The second hypothesis is that the cost principle helps to reduce costs. This principle is consistent with the hypothesis. The hypothesis can be accepted as the mean of the whole axis (3.8). This is according to the five-dimensional Likert scale. Second, the company studies the prices of the raw materials involved in the production process, which are necessary to reduce the cost, on the average of (4.80), the standard deviation (0.42) and the relative weight (80%). The fourth question (the company coordinates between the management of design and marketing management in order to reduce costs) also on the average (3.80) and the standard deviation (0.42) and the relative weight (80%) and the choice (I agree). While the fifth question (the company is studying the competitive prices in the market for cost reduction) on the average (3.90) and the standard deviation (0.99) and the relative weight (50%) and the choice is neutral.

Table 5: Axis Three

No	Paragraphs	Arithmetic Mean	Standard Deviation	Percentages	Chose	Level of significance
1	The cost target principle leads to improved product quality.	3.80	1.13	60%	Agree	000
2	The target cost principle eliminates unnecessary activities that do not improve the product and increase costs.	4.00	0.66	60%	Agree	000
3	The application of cost target principle leads to the best fit between quality and price.	3.90	0.87	40%	Neutral	000
4	The company uses the Value Engineering System (VE) and the Continuous Development System (CI) for the products.	3.30	0.48	70%	Neutral	000
5	The principle of cost target makes the product qualitative characteristics that meet the needs of customers	4.30	0.67	50%	Agree	000
6	The quality of the products makes the customer able to pay the highest amounts in order to obtain high quality products.	3.80	0.63	60%	Agree	000
7	The target cost principle gives competitive advantage to the company's products with the products of the competing companies.	4.30	0.48	70%	Agree	000
8	The target cost principle achieves loyalty to the company's products because of its quality.	4.10	0.87	60%	Agree	000
9	The objective cost principle contributes to the achievement of competitive advantages in the market by dividing the market into different sectors.	4.20	0.92	50%	Strongly agree	000
10	The target cost principle provides the company with information that helps it reduce costs, improve competitive advantages and develop its products.	4.30	0.48	70%	Agree	000
11	Axis as a whole	4.00	0.32	50%	Agree	000

In the questionnaire, we note that the mean of the axon as a whole is (4). This is good for accepting the hypothesis that the target cost principle leads to the development of the products according to the five-point Likert scale. The standard deviation is 0.32 and the relative weight is 59% I agree). It was found that the seventh question (the target cost principle gives a competitive advantage to the company's products with the products of the competitors) obtained an average of 4.30 and a standard deviation of 0.48 and a relative weight of 70%. The

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lowest average was for the fourth question (the company uses the value engineering system (VE) and the system of continuous development (CI) of the products) where he obtained an average of 3.30 and a standard deviation of 0.48 and a relative weight of 70%).

7. Conclusion

The target cost principle aims to achieve the largest reduction of costs and development of products through its application in industrial companies and through the study shows that it can be applied in the industrial companies' subject to the search for the purpose of satisfying the needs of the consumer and thus achieve sufficient profits.There are cost-effective assistance systems such as QFD, VE and CI which have been applied in many industrial companies and have yielded positive results in reducing costs and improving and developing products.The principle of cost target depends mainly on the principle of joint cooperation between all employees and employees in the development of plans and decision making and manufacturing tasks.The principle of target cost is to budget the house of cost, price and quality of the products to which it achieves competition and sufficient profits.The target cost principle begins with cost reduction and product development from the planning stage of the production process and the project as a whole.The process of cost reduction and product development goes hand in hand using the principle of cost target and does not require additional efforts.What distinguishes the target cost system is its interaction with the external environment to identify customer desires and achieve them through advanced and low-cost products.

Through the results obtained during the research, the researcher created the following recommendations:Target cost system is one of the most advanced systems to reduce costs and improve the engineering products. It has been shown through the sample the subject of the research that it can be applied in industrial companies, so more research and studies should be done on the subject of target cost.The systems of the target cost system should be studied:Quality Test Design System: which provides the most important specifications and parts to be achieved in the product.Value Engineering System: which checks the parts and stages of the product to ensure that they are effective in getting the product out of the required image, or looking for the best alternative that achieves the target cost.The system of continuous development: which reduces the costs through the control of the production process to look for manifestations of extravagance and activities that do not add value.It is necessary to apply the target cost system in the industrial sector in order to reduce costs and improve products, as well as deepen the study of the systems of the system of cost target through research and know which of these systems benefit the target cost.Develop a curriculum for students studying within the cost and cost items advanced in universities, colleges and institutes for the purpose of teaching in the curriculum.Industrial companies should use research and studies conducted by researchers and academics to reduce the cost of their products and improve them to create a competitive market between companies and their products.

Reference

[1] Ahmed Hussein Ali (Advanced Management Accounting), Modern Book House, First Edition, 2016.
[2] Bassiouni. Salah BassiouniAbd, and Others, (Cost Accounting), Faculty of Commerce, Cairo University, First Edition. 2017
[3] Shakeel PM, Baskar S, Dhulipala VS, Mishra S, Jaber MM., "Maintaining security and privacy in health care system using learning based Deep-Q-Networks", Journal of medical systems, 2018 Oct 1;42(10):186.https://doi.org/10.1007/s10916-018-1045-z
[4] Beesley. Makram Abdel-Masih (Standard Cost Systems in the Modern Manufacturing Environment, Quantitative Entrance Strategy Vision) Cairo, The Modern Library. 2007.
[5] Shakeel PM, Baskar S, Dhulipala VS, Jaber MM., "Cloud based framework for diagnosis of diabetes mellitus using K-means clustering", Health information science and systems, 2018 Dec 1;6(1):16.https://doi.org/10.1007/s13755-018-0054-0
[6] Charles Horringen, and others . (Cost Accounting, Administrative Entrance) Part I, 2009.
[7] Charles Horringen, and others,. (Cost Accounting, Administrative Entrance) Part II, 2010 .
[8] Shakeel PM, Manogaran G., "Prostate cancer classification from prostate biomedical data using ant rough set algorithm with radial trained extreme learning neural network", Health and Technology, 2018:1-9.https://doi.org/10.1007/s12553-018-0279-6
[9] Dawoods Hassan Taher (Computer and Information Security), Institute of Public Administration, Riyadh, 2004.
[10] Essam El Din Mohamed Metwally, (Accounting Information Systems), University of Science and Technology, Sana'a, Second Edition. 2015.
[11] P. Mohamed Shakeel; Tarek E. El. Tobely; Haytham Al-Feel; Gunasekaran Manogaran; S. Baskar., "Neural Network Based Brain Tumor Detection Using Wireless Infrared Imaging Sensor", IEEE Access, 2019,vol 7,issue 1, Page(s): 1

[12] Shakeel, P.M., Tolba, A., Al-Makhadmeh, Zafer Al-Makhadmeh, Mustafa Musa Jaber, "Automatic detection of lung cancer from biomedical data set using discrete AdaBoost optimized ensemble learning generalized neural networks", Neural Computing and Applications,2019,pp1-14.https://doi.org/10.1007/s00521-018-03972-2
[13] Horngern , Dater and Foster, cost Accounting –A managerial Emphasis , prentice, Hall, 2003 .
[14] Ibid, (R. Burn, Quality Function Deployment in Barrie Dal`s Book, Managing Quality, Printig Hall, (1994) .
[15] Ibrahim Mahmoud Ahmed, d. RazakShatee, d. Dajim Abdul Aziz (Pre-defined Cost Accounting Systems) Costing System Standard Cost System "(Amman, Jordan, Al-Warraq for Printing and Publishing, First Edition, 2005).
[16] Ismail Ibrahim Juma, (Administrative Accounting and Operations Research Model in Decision Making), The Arab Publishing and Distribution House, First Edition, 2000.
[17] K.Bommaraju, A. Manikandan, S.Ramalingam, "Aided System for Visually Impaired People in Bus Transport using Intel Galileo Gen-2" International Journal of Vehicle Structures & Systems, Online ISSN: 0975-3540, Volume 9, Issue 2,pp 110-112,2017
[18] M. Fellman , selling IT goods to disable end-user , marketing news , Chicago , vol.33,no.6, (1999) .
[19] M. Morgan, and P. Weerakoon , Japanese management accounting : its contribution to the Japanese economic miracle , management accounting , (1989) .
[20] Mohammed AbdoNoman Ali, Cost Accounting Systems, University of Science and Technology, First Edition, Sana'a. 2012.
[21] A.Manikandan, V.Nirmala, "A Low Cost Thermoelectric Refrigerator" in International Journal of Applied Engineering Research, ISSN:0973-4562, pp 3097-3100, 2015.
[22] Quantum. Gabriel Joseph, Dr. Tenderness .Radwan, (Standard Cost Accounting Supervision and Evidence), Amman, Jordan, Dar Al Thaqafa for Publishing and Distribution, First Edition. 2006.
[23] R. Cooper, and R. Slagmuder , target costing and value engineering , Portland/or: productivity press and Montvale , NJ: institute of management accountants , (1997) .
[24] S. Ansari, J. Bell, and CAM-I : target cost cor group, op. cit., (1997) .
[25] Salah BassiouniAbd, and others, (Administrative Accounting), First Edition. 2016-2017.
[26] Ta'imah, Tanaa Mohamed Taima, Cost Management in Modern Technologies, Benha University, Faculty of Commerce, 2010.
[27] Y. Kato , target costing support system : lesson from leading Japanese companies , management accounting research , japan, vol.4,no.1,(1993) .
[28] Zinat Mohammed Muharram, The Use of the Cost Intended Approach to Raise the Efficiency of Pricing of New Products in the Environment of Contemporary Dynamic Environment, Faculty of Commerce, Ain Shams University, Egypt, p.1 (1995) .

*Corresponding Author: Khaleel Radhi Hasan Alzlzly,Email id : khlznb2016@gmail.com
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