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Using Modern Cost Techniques in Achieving Competitive Advantage: An Empirical Study in Iraqi Industrial Companies

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In light of the rapid changes and successive developments that have accompanied the modern era, the business environment has faced many challenges, including growing intensity of competition. Iraqi industrial economic units suffer from numerous problems, the most important of which are high costs and low quality of products as well as increase in the duration of design, manufacturing, assembly and marketing in addition to lack of adequate flexibility in response to the needs and desires of customers. Despite these problems, there are several administrative and cost techniques that will help solve these challenges. The most important of these techniques is value analysis and concurrent engineering. Value analysis focuses on improving project or product performance and analysing the start of its components down to its functions in order to exclude jobs that do not add value from the customer's perspective. Competitive advantage either refers to characterising the economic unit to any item unique to competitors in the market, and it can be achieved if you follow this unit to any strategy aimed at achieving a competitive advantage. Concurrent engineering technique focuses on conducting simultaneous product design in addition to synchronisation in the manufacturing and assembly operations in order to achieve savings in design, manufacturing and associated costs. Competitive advantage refers to characterising the company to any item unique to competitors.

Key words: Modern Cost Techniques, Achieving Competitive Advantage, Iraqi Industrial Companies

Introduction and Research Methodology

Facing the business and manufacturing environment, numerous changes have created challenges in economic units operating in this environment. The most prominent scientific and technological developments consist of the information and communication revolution, globalisation and changing political, economic and social systems as well as increasing competition between these units as well as changing tastes and needs and customer behaviour. Adaptation is required to be able to meet these challenges and pressures and focusing on strategic entrance to cost management through technology costs and contemporary administrative techniques such as value analysis to improve product value from the customer's perspective. There are emerging new challenges for business organisations in today's world, as a result of the information technology and communication revolution and global free trade. The importance of this study is based on provide an information base for the possibility of researching the organisation, or Iraqi industrial organisations applying concurrent engineering techniques in the development of their products as concurrent engineering technology has become an important tool for its important role in stimulating the development process, leading companies to improve in the field of product development and achieving competitive advantage.

Research Methodology

First: The Research Problem

In light of rapid changes and successive developments that have accompanied the modern business environment, economic units face many challenges including growing intensity of competition, and although Iraqi industrial economic units suffer from numerous problems the most important consist of high costs and low quality of its products as well as an increase in the duration of design operations, manufacturing, assembly and marketing in addition to lack of adequate flexibility in providing a response to customer needs and desires. Despite these problems, there are several administrative cost technologies that will help solve these them. The most important of these techniques is concurrent engineering, and you can formulate the research problem by asking the following questions:

1. What is the interest of managers in Iraqi industrial economic units and contemporary cost and administrative techniques which include techniques of value analysis and concurrent engineering?
2. Does it help with optional techniques of value analysis and concurrent engineering to achieve competitive advantage regarding the four dimensions of cost, quality, time, and flexibility?

Second: Research Objective

The research aims to examine the techniques of value analysis and concurrent engineering, with an indication of the importance in changes and recent developments associated with the modern business environment by demonstrating the role of this technique in achieving competitive advantage in order to improve cost indicators, quality, time and flexibility.

Third: The Importance of Research

The research is important as it focuses on variables addressed, techniques of value analysis and concurrent engineering focused on conducting simultaneous product design in addition to synchronisation in manufacturing and assembly operations in order to achieve savings in design, manufacturing and assembly time and associated costs. Competitive advantage refers to characterizing the economic unit and any element unique to competitors, and can be achieved by following this unit to any strategy aimed at achieving a competitive advantage in a particular area.

Fourth: Research Hypothesis

The research is based on the following premise: (The application of techniques of value analysis and concurrent engineering can help economic units in achieving competitive advantage).

Theoretical aspect of Research

Value Analysis

The origin of value analysis dates back to World War II when there was a shortage of materials used in the production of products due to increased consumption of these materials for the purposes of the war. Lawrence D. Miles was an electrical engineer who worked in the company (General Electric). He searched all methods to alleviate the shortfall in material through its focus on functions performed by the product, which worked to improve value and reduce cost and has been dubbed as analysis technique (Mostafaeipour,et. al, 2011:205). In 1954 the Pentagon embraced the concept of reducing cost during the design phase Tazegu & Kaygin, (2014: 89) define value analysis as a product design activity that involves the production of products, and the functional performance matches customer expectations at the lowest cost. The Society of American Value Engineering (SAVE) has a systematic application of recognised techniques that determine the functions of a product or service and evaluate it in order to provide a job with a level of quality and reliability at the lowest possible cost (Jariri & Zegordi, 2008: 406). Wang & Li, 2013: 714 as a tool for analysing the product function as a fundamental objective that seeks to improve its value while reducing

the cost of the product life cycle required to perform necessary functions. Therefore, based on the above points, the value analysis of objectives are consistent with the requirements of the modern competitive business environment. The application of value analysis passes through several stages as follows: (Karimi & Jafari, 2014: 234)

1) Information Stage: involved in gathering information about the product cost, its components, specifications, and functions, and other relevant information (SAVE, 2007: 12).
2) Functional Analysis Stage: this phase is focused on jobs and analysis in order to exclude tasks that do not add value to the customer with the cost without affecting product quality and performance, and points (Rains, 2015: 6).
3) Creativity Stage: value analysis team using a methodology to identify alternative ways to complete a job that meets customer requirements as well as searching for areas that achieve economic unity reduction in the cost of the job (Drury, 2008: 892).
4) Evaluation Stage: this stage presents the results from the application of the creativity phase and re-considering proposed alternatives, with an emphasis on an alternative choice that is less expensive compared to the current design (Value Engineering Manual, 2014: 17). This model helps in the evaluation of ideas or proposed alternatives in light of the relevant functions of a particular product in the applicable economic union of technology and value analysis procedures.
5) Development and implementation stage: ensure the reasonableness of ideas or alternatives which have been launched under the previous phase. Working on making any cost savings, and can be used for model development.
6) The feedback Stage: reviewing all stages of the value analysis from the presence of team value analysis in order to ensure the safety of implementation and avoiding making any mistakes with developing solutions through expected error handling (Value Engineering Manual, 2014: 19).

Concurrent Engineering

Orderly entrance to the integration of product design and operations-related, including manufacturing and support (Gillen & Fitz, 1991: 20), replaces the process of traditional product development by one of the tasks running in parallel, taking an early feature (speeding up) to the process of product development, so the concurrent engineering is a method of integration organization between synchronous product design and processes involving manufacturing and support. This method is intended for reasons of development and is aware of the product life cycle through regulations and taking quality, cost and scheduling into account as well as user requirements. Natale also known as a disciplined multifunctional activity, and starts from pre-birth to design, production and lasts until the end of the product's life (Natale, 2000: 124). It thus includes a number of parallel activities undertaken by contractors and centers, without specifying real-time interaction, requiring concurrent

engineering and simultaneously thinking of the product requirements and process mediated by a disciplined team and called it concurrent multi-functional engineering work , which means that it is working on the use of individuals to search R & D and design engineers and architects of the manufacturing work together and in parallel (Waller, 2004: 159), and is seen both (Merdith & Mantel) as a technique used development team, which includes design and manufacturing department with regulatory steps to create sub-organisation (Merdith & Mantel, 2000: 170).

Concurrent engineering is shown by replacing the traditional-based sequence in completing tasks to a work environment that functions in parallel in simultaneous and harmonious tasks and can explain the importance of concurrent engineering techniques through the following: (Kristen, 1995: 46)

1. Economic unit commitment to amend products and process development and completion of tasks simultaneously cycle.
2. To investigate market needs and work on the coverage of the order to produce the products can meet customer needs.
3. To achieve the necessary quality so that products match customer expectations.
4. Simplicity of resources and manufacturing methods required by the simplification and standardisation of procedures.
5. To achieve the required service to ensure customer satisfaction along the product life cycle.

Concurrent engineering relies on many of the basic principles to be applied as follows: (http://www.Johnstark.com), (Graham, 1996: 8)

1) Strong commitment by senior management, and the establishment towards economic objectives of the unit and declaration of prompt mission.
2) Establish and develop a detailed plan for an early process, with the development of programs for implementation and plan review on an ongoing basis.
3) Develop leaders to have a general vision of project objectives.
4) Market analysis and knowledge of existing and prospective customers with identifying needs and requirements.
5) Individual work and the suppression of stating the importance of the concept of (the team) and the laying of integration and the spirit of co-operation amongst workers.
6) The transfer of technological techniques between individuals and departments, and the fragmentation of the project (the process) to natural stages.
7) Complete all tasks in parallel and develop a clear vision of the future environment.
8) Compared to the same unit with economic bases of competitors in the market.

According to researchers, these concepts and techniques combine with concurrent engineering according to two major trends. The first consists of direction relevant to concurrent productivity engineering (manufacturing, costs, quality, and investment), while the second concerns the relevance of concurrent environmental engineering (human engineering, safety, redundancy, and the environment), and thus are subject to concurrent terms linked to productivity and the rate of production of two principles of engineering as follows:

A) In case product design is taken into consideration to meet market and customer demands.

B) Product design taking into account manufacturing processes and requirements, and the simultaneous implementation of these processes to obtain time savings and thus shorten the product life cycle.

Competitive Advantage

There are numerous definitions of competitive advantage, all of which emphasise the importance of excellence in Economic Unity and any element unique to competitors. It can be achieved by following this unit to any strategy of general competitive strategies (cost leadership, differentiation, focus) aimed at achieving a competitive advantage in a particular area. Competitive advantage is defined as a source of promoting the development of economic unity in the market and checking profits through excellence in the areas of product, price, cost and focus on quality of production (Harry, 1986: 59), while according to (Porter), competitive advantages arises once you reach economic union to discover more effective ways than the methods used by competitors, which will allow it to embody this discovery in the market. Therefore, once the innovation process events take place in its broadest sense (Porter, 1998 8), it results in either uniqueness of the economic unit from its competitors concerning one or more of the competitive critical success factors (least cost, quality, time, flexibility innovation) (Mustafa 2001: 28-29), while providing a lifeline for the survival of the unit's economic growth and competition in the market, and function (indicator) concerning their ability to achieve differentiation over competitors (Flomholts, 2003: 223).

There are four dimensions of competitive advantage including cost, quality, time and flexibility:

1. Least Cost: the least cost advantage can be realised with a strict system that works to minimise or reduce all types of loss or and wastage of resources and time by direct materials, indirect wages and costs for a noticeable reduction in the cost per unit of product or service as well as reducing the costs of additional investment in technology (Krajewski & Ritzman, 1999: 33). Accordingly, the economic units seek to control their costs and make them less than the industry average to achieve competitive advantage (Bakri and Solomon, 2006: 41).
2. High Quality: The availability of advanced technology has allowed for most industrial economic units to improve the quality of its products during their short life cycle and mean quality score matching design and characteristics of the product to the expectations and

desires of customer specifications. According to Morse (2003: 380), the quality factor represents a competitive advantage that can be achieved by fulfilling the wishes and expectations of customers if the properties and functions of the product meet this fulfilment, achieving economic unity in the least cost advantage but may be that the level of quality of its products do not meet customer needs, and there are conditions which require substantiation by economic units that use quality as a competitive advantage which determine the quality of the customer's perspective and the embodiment of the fundamental characteristics desired in the product (Evans & Dean, 2003: 324).

3. Response to Customer Time: Time represents a competitive advantage to obtain the biggest investment opportunity and speed in the development and delivery of products to market before other competitors, according to which time is an important element to increase economic unit revenues in terms of exploiting opportunities available in the market (Garrison, & Noreen, 2008: 447).

4. Flexibility: competitive success of economic union factors, referring to the ability of this unit to adapt its productivity with changes in the competitive environment, processing the request according to the wishes and changing needs of customers in terms of diversity, size and speed of innovation in the production and delivery of new products (Krajewski,2005: 65), and selects three dimensions of flexibility, firstly attached to quickly respond to requests for specific customers, either suspending flexible diversification into the mix of products or services desired by customers (Davis, 2003: 35).

Practical Dimensions of Research

The research community consists of a group of workers in the Iraqi industrial companies of administrators, accountants, engineers and technicians, either as a sample of those workers that has been chosen as the distribution of 54 form questionnaires consisting of retrieving 50 forms which are valid for analysis, and the researchers adopted personal interviews with the research sample which has been designed in a questionnaire form in a way that is consistent with the research objectives and hypotheses, and included an Introductory questionnaire which highlights the nature of the research and general questions (demographic) specific to one search in addition to the test hypotheses questions, consistent with the formulation of the questions in questionnaire form so the response can be converted to the values of the amount of the Likert scale with five grades. The researchers use a variety of statistical methods such as arithmetic mean belonging to the value of the majority of the Likert scale with five degrees, if the arithmetic mean increases about three degrees of the scale space would be acceptable study, if received on top of the 60% ratio, as well as the use of percentages, standard deviation in addition to T test, which aims to explain that the relations

between research variables which consist of real relationships rather than chance, through inference about the arithmetic mean of the statistical community.

Table 3: Results of the distribution of questionnaires to the research sample

Details	The Number	Percentage
Questionnaires distributed	54	100%
Questionnaires recovered and recoverable for analysis	50	92.6%
Questionnaires non-refundable	4	7.4%

Table (3) shows the 54 questionnaires distributed which have been retrieved 50 forms subject to statistical analysis as the ratio of these forms amounted to 92.6%, while the forms recovered amounted to 4, any forms by 7.4%, as the demographic characteristics of sample individuals analysis shown in table (4).

Table 4: Demographic characteristics of the members of the study sample analysis

No.	Variables	Classification	The Number	Percentage
1	Age	Less than 30 years	6	% 12
		From 31-40 years	10	% 20
		From 41-50 years	23	% 46
		More than 50 years	11	% 22
2	Gender	Male	36	% 72
		Female	14	% 28
3	Qualification	Diploma	12	% 24
		B.A	35	% 70
		M.A.	3	% 6
4	Years of Experience	Less than 10 years	5	% 10
		From 11-20 years	15	% 30
		From 21-30 years	20	% 40
		More than 30 years	10	% 20

Table (4) shows that 12% of the research sample is aged less than 30 years, and 20% are between the ages of 31-40 years, 46% are between the ages of 41-50 years , either remaining more than 50 years old, as was the proportion of males in sample individuals consisting of72%, while the proportion of females stands at 28%. In addition, this ratio includes Diploma based qualifications consisting of 24%, Bachelor of Arts at 70% and Masters Degrees at 6%, as a result of which they are qualified to understand the subject. Finally, years of experience of sample individuals were the largest percentage by 40 % for a class of 21-30 years.

Table 5: Interpretation adopted variables in the statistical analysis

Types of variables	Interpretation of variables	Variable code
Independent variables (explanatory)	Strategic cost management techniques	X
	Value analysis	X1
	Concurrent engineering	X1
Dependent variables (reactive)	Dimensions of competitive advantage	Y
	Cost	Y1
	Quality	Y2
	Time	Y3
	Flexibility	Y4

The Impact Analysis (X1) In Each of the (Y1, Y2, Y3, Y4)

This paragraph aims to analyse and test the value analysis technique effect (X1) in the four dimensions of competitive advantage (Y4, Y3, Y2, Y1), and through quantitative reasoning can clarify the mean, percentage and standard deviation between these variables through the following table:

Table 6: Mean, percentage and standard deviation between (X1) and (Y1, Y2, Y3, Y4)

Value analysis (X1) / Competitive Advantage (Y)	Mean	Percentage	Standard Deviation
Y1	4.200	% 84.0	0.592
Y2	3.940	% 78.8	0.542
Y3	4.088	81.8%	0.569
Y4	3.816	% 76.3	0.522

The above table illustrates that there is a correlation between the value of the analysis technique and after the four dimensions of competitive advantage, it has reached the arithmetic mean of the cost of 4.200 standard deviation of 0.592, which refers to the value of the analysis of technology's ability to reduce costs, either after the quality has reached the centre arithmetic 3.940 standard deviation of 0.542, which means that the value analysis technique will help to improve the quality of both product and process, and the arithmetic mean of the market reached 4.088 standard deviation of 0.569, which confirms that the potential value analysis technique to reduce the time of the operations and marketing of products to customers finally reached the arithmetic mean of flexibility 3.816 standard deviation 0.522 which means that the value analysis technique can help provide sufficient flexibility to respond to changes in customer needs .

Inference statistical verification can be used regarding the accuracy of the above, using the

test (T-Test) in order to prove that the relationship between the value analysis technique and the four dimensions of competitive advantage is a real relationship and no longer dependent on chance. The value of T calculated for each dimension of competitive advantage is compared with the value of T spreadsheet, if the t calculated is larger than t tabular level of significance and the level of significance can be accepted , and we can say that the relationship between explanatory and responsiveness of the study variables consist of a real relationship which is not dependent on chance, which can be illustrated in T values calculated and driven between value analysis technique (X1) and the four dimensions of competitive advantage (Y1, Y2, Y3, Y4) shown through the following table:

Table 7: T calculated and T tabular between (X1) and (Y1, Y2, Y3, Y4)

Value analysis (X2) / Competitive Advantage (Y)	T calculated	T tabular	Level of significance
Y1	14.333	2.704	0.05
Y2	12.263	2.704	0.05
Y3	13.521	2.704	0.05
Y4	11.054	2.704	0.05

Based on the above table, a series of analysis of the relationship between the values of the analysis technique can be made after all four dimensions of competitive advantage as follows:

First: The impact of Value Analysis technique (X1) in cost (Y1):

Reaching the value of t calculated for Technology Value Analysis with the cost 14.333 which is more than the Tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to the basic truth: (The relationship between the value analysis technique and the cost is the fact that the relationship was not emerging coincidentally, as the value analysis of the application of technique can help the economic union to reduce costs), and the reason for this is a way to analyse the distinctive functions characterised by this technique by which they can reveal unjustified costs associated components and functions that do not add value from the point of reducing the company and customer perspective.

Second: The impact of Value Analysis technique (X1) in quality (Y2):
The value of t calculated for Technology Value Analysis with after the quality has reached 12.263, the largest of Tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to the fact that: (if there is a possibility to improve the quality of both product and process through analysis technique is applied value, the relationship between these two variables is real and not emerging coincidentally). This is due to the

establishment of this technology to address quality problems and seek to do one thing right from the very first time, in addition to reducing internal defective and exterior resulting in reduced scrap and re-work and re-examination and analysis of failure.

Third: The impact of Value Analysis technique (X1) in the time (Y3):
Since the value of t calculated for Value analysis technique with after the time of 13.521 is the largest of T tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to the fact that: (The relationship between the value of the analysis of technical and after the time is a real relationship refers to the possibility of achieving competitive advantage through savings at the time of the design, manufacture and assembly of the product as well as time to market). This is due to the fact that the information provided by the technique working group analysis of the value to the design team that is active information can help them in providing the best product and process design, and saving time.

Fourth: The impact of Value Analysis technique (X1) in after the flexibility (Y4): The value of t calculated for Value Analysis technique with after the flexibility 11.054 which is more than Tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to the following basic truth: (help value analysis technology to provide sufficient flexibility to respond to changes in customer needs, and the relationship between these two variables is based on a real relationship). This is due to the value analysis technique regarding customer focus, as well as the possibility of providing solutions suitable to the problems that could face economic unity, especially those related problems in rapid response to changes in customer needs.

Through previous analyses, the researcher can make the following observations:

1) There are significant differences between value analysis technique and the four dimensions of competitive advantage, since the relationship between these variables is a real relationship and not an emerging coincidence.
2) Value analysis technique has affected the four dimensions of competitive advantage in different proportions, it has had a greater impact on cost after demonstrating the effectiveness of this technology in reducing costs.
3) We can say with 95% confidence that value analysis technique helps reduce time and costs and improve quality and provide flexibility and thus achieve competitive advantage.
4) Generalised conclusions have been reached in in the Light Industries Company and other industrial companies operating in the modern business environment.

Impact Analysis (X2) In Each of the (Y1, Y2, Y3, Y4)

This paragraph aims to analyse and test the concurrent engineering technique effect (X2) in the four dimensions of competitive advantage (Y4, Y3, Y2, Y1), and through quantitative reasoning can clarify the mean, percentage and standard deviation between these variables through the following table:

Table 8: Mean, percentage and standard deviation between (X2) and (Y1, Y2, Y3, Y4)

Concurrent Engineering (X2) / Competitive Advantage (Y)	Mean	Percentage	Standard Deviation
Y1	4.072	% 81.4	0.567
Y2	4.068	% 81.3	0.566
Y3	4.060	81.2%	0.565
Y4	3.836	% 76.7	0.525

Based on above table, if there is a correlation between concurrent engineering technology and all four dimensions of competitive advantage, it has reached the arithmetic mean of the after-cost 4.072 standard deviation 0.567. This shows the importance of concurrent engineering technique in reducing costs, either for quality, bringing the arithmetic mean of 4.068 deviation standard 0.566 indicating the importance of concurrent engineering technology to improve both product and process quality. with respect to THE dimension of time, the arithmetic mean of 4.060 reached a standard deviation of 0.565, which underlines its potential role that it is possible that the role concurrent engineering technique plays in savings in design and manufacturing time and assembly, and flexibility, it has reached the arithmetic mean of 3.836 standard deviation of 0.525, which indicates the importance of this technology to provide sufficient flexibility to respond to changes to customer needs.

Inference statistical verification can be used by Altaia test (t-Test) in order to prove that the relationship between these variables is real and no longer up to chance, through the following table:

Table 9: The T calculated and T tabular between (X2) and (Y1, Y2, Y3, Y4)

Concurrent Engineering (X2) / Competitive Advantage (Y)	T calculated	T tabular	Level of significance
Y1	13.369	2.704	0.05
Y2	13.343	2.704	0.05
Y3	13.266	2.704	0.05
Y4	11.260	2.704	0.05

We can perform some of the analysis of relations between Technical Synchronised items after all four dimensions of competitive advantage as follows:

First: The impact of concurrent engineering technique (X2) in the cost (Y1):

The value of t calculated for Technical concurrent with after the cost has reached 13.369, the largest of tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to a basic truth: (if there is a real relationship between technology concurrent engineering and after cost, it does not emerge by chance, thus concurrent engineering application helps in reducing costs), synchronising design, manufacturing and assembly, can be achieved from cost savings as well as the deletion of activities, components and functions that do not add value during the stage operations of design.

Second: The impact of concurrent engineering technique (X2) in the quality (Y2):

The value of t calculated for technology concurrent engineering with after-quality 13.343, the largest of tabulated value of is 2,704 under the 0.05 level and the degree of significance of 49, which refers to the basic fact that: (improving product quality and process through concurrent engineering technique application, the relationship is and did not arise by chance), as the focus is on adding value, especially those related to prevention and promotion activities, along with the work to get rid of quality activities that do not add value, especially those related to assessment activities and failure during the early stages of product design .

Third, The impact of concurrent engineering technique (X2) in the time (Y3):

The value of t calculated for technology concurrent engineering with after time 13.266 is more than the Tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which indicates the following: (The truth of relationship did not emerge by accident between concurrent engineering technique and after the time and refers to the possibility of achieving competitive advantage through savings at the time of product design, manufacture and assembly), in order to synchronise product design, manufacture and assembly, which leads to achieving real savings in the total period of the product life cycle which corresponds with the facts indicated by the researcher in the theoretical part of this study.

Fourth: The impact of concurrent engineering technique (X2) in the flexibility (Y4):

This shows that the value of t calculated for technical concurrent with after the flexibility has reached 11.260 which is more than T tabulated value of 2,704 under the 0.05 level and the degree of significance of 49, which refers to the following: (Concurrent engineering technique helps to provide sufficient flexibility to respond to changes that may occur regarding the needs and desires of customers, since the relationship between these two variables is real and did not emerge coincidentally), due to the presence of many design alternatives which provide an opportunity for the design team to choose a design in which the elements of the flexibility are available in rapid response to customer needs. Through previous analyses, the researcher makes the following observations:

1) If there are statistically significant differences between concurrent engineering technique and the four dimensions of competitive advantage, the relationship between these variables is real and not arising by chance.

2) Concurrent engineering technique has affected the four dimensions of competitive advantage, including rates cost, quality and time due to the presence of the interrelationships between these dimensions.
3) We can say with 95% confidence that concurrent engineering technique can help economic units in reducing costs and improving the quality of its operations and products as well as reduction of design, manufacturing and assembly time and provide sufficient flexibility, thereby achieving competitive advantage.
4) The results can be generalised to other areas in the study sample in addition to other industrial companies operating in the modern business environment.

Conclusions

The research found a set of conclusions as follows:

1) The value analysis technique is the activity of product design including producing career performance complying with the expectations of customers at the lowest cost, therefore it is a tool that specialises in analyzing the product function that is fundamental to seeking improvement in value.
2) The concurrent engineering technique is structured to integrate with product design and operations, including manufacturing and support operations, thus it is strategically replaces the process of traditional product development by one of the tasks running in parallel to speed up the process of product development.
3) Competitive advantage refers to the economic unit to any item unique to the competitors, and can be achieved if you follow this unit to any strategy of general competitive strategies. There are four key dimensions of competitive advantage including cost, quality, time and flexibility.
4) The economic unit's success in the competitive market depends on continuous improvement achieved by the performance levels of the determinants of the critical success.
5) The field of study and the results of statistical analysis have been reached as techniques to transmit valuable help in reducing costs through cost analysis with the help of a value analysis technique which can help identify areas that can carry out operations in order to reduce costs and standardisation of procedures, which in turn will lead to lower costs.
6) Through the field study and the results of statistical analysis, the conclusion has been made that concurrent engineering technique helps in reducing costs through cost analysis and with the help of this technology can identify areas that can be carried out such as cost reduction and standardisation of processes and procedures, which in turn will lead to reducing overall product costs.

Recommendations

In light of the conclusions the following are recommended:

1) The need for attention on cost technologies and modern management as it is more appropriate to the requirements of modern business, which is characterised by intense competition and a focus on customers, and through these techniques reducing costs of products and the operations environment can be achieved.
2) The economic units provide qualified personnel for the application of these techniques and special technical value analysis with the formation of a multi-functional team and develop an appropriate action plan consistent with the circumstances with the need to establish a common database for the exchange of information amongst team members.
3) When performing value analysis technique, it must comply with basic stages and steps beginning from the previous and even subsequent study.
4) The need to analyse the internal and external environment for economic unity in order to identify the most important opportunities and to exploit, as well as identify the threats faced by these units and work to address them, as well as strive hard in order to gain competitive advantage and excellence .
5) For the purpose of achieving competitive advantage through value analysis technique, the following must be adhered to:
6) Commitment way analysis of good jobs for IT value analysis and to get rid of all components and functions that do not add value from the customer's perspective, as well as commitment to the principles of total quality management by getting things right the first time culling defective products.

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