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INTEGRATION BETWEEN TECHNICIANS AND REENGINEERING DECONSTRUCTED ANALYSIS TO RATIONALIZE COSTS AND SUPPORT COMPETITIVE ADVANTAGE

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A B S T R A C T

The intense competition witnessed by the contemporary industrial environment and the rapid developments have made economic entities practice their work in a competitive environment directed by the customer, and thus it is better for them to achieve added value on their part if they want to continue and maintain their competitive position. The research aimed to Explaining the integration between the techniques of re-engineering and deconstructed analysis to rationalize costs and support competitive advantage, as the use of deconstructed analysis and re-engineering techniques is directly linked to the desires and preferences of the customer and providing the product or service that suits his needs, and this would lead to improving the value of the product or service, As a result, rationalizing its costs, as well as using re-engineering technology before economic entities, leads to increasing the quality of the product, reducing its costs by making a radical change, and eliminating manufacturing process activities that do not increase the value of the product in relation to the customer's requirements. Therefore, it is necessary to work on changing the reality of the cost system applied in the economic entity by modernizing it by applying modern technologies concerned with cost rationalization, represented by the deconstructed analysis technique for its prominent role in the process of calculating the cost of a solid scientific product, which was adopted in this research due to its focus on methods of manufacturing the cement product in light of the requirements. The customer has an employment relationship with the reengineering technology.

K E Y W O R D S

process re-engineering, deconstructed analysis, cost rationalization, competitive advantage.
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Introduction

Re-engineering technology represents all practices, procedures and activities that contribute to increasing or maintaining the adequacy and effectiveness of the production equipment of the economic entities, which contributes to achieving the purposes of the economic entity, which are linked to lower cost and high quality. Therefore, it is important in all production stages that start from the design stage. All the way to the final products. As the term process re-engineering means starting over with the modern administrative method, which relates to the operations and work performed by economic entities, there are those who call it (administrative process engineering, engineering, redesign), but no matter how different these names are, they are identical to the point of matching (Harush ,2015:318). The deconstructed analysis is not to evaluate the process of manufacturing the product after its design, and to make appropriate changes to its design, but rather because it aims to reach the integrated design of the product, and the processes related to its production and assembly As for Hilton, it is one of the manifestations of the development of value engineering to cover customer requirements at an early stage and to create new functions (characteristics) in the product through methods of analyzing competing products in terms of the materials they contain, the number of parts used, functional performance, methods Manufacturing it to provide the best (Hilton, 2008:652). The acceptable and sufficient time period can be determined to cover the investment costs of the project through refund period and the investment project preferred that themoney recovered in the shorter period. (Hamdan, et al,.2018) . To improve production methods, reduce environmental impacts, and use the economic unit's resources economically (Khalil, & Barzan,2022)

The first topic: process re-engineering

First: The concept and importance of process reengineering.

The concept of process engineering is one of the technologies concerned with improving and developing planning performance by radically redesigning the operations of the economic entity, or inventing new and necessary processes that are compatible with developments and changes in the external environment (Al-Khafaji, 2019: 55). It is a set of steps aimed at achieving a distinguished competitive position, in light of the pressures generated by the customer. Recently, there has been increased interest in process re-engineering from decision makers from senior management in economic entities. In the same direction, one of the researchers indicates that it is the process of creating a new model of economic entities that responds to competitive conditions and the new environment because it is. sharp and cautious attention to the organizational gap between existing organizations with regard to levels of performance and production, by working to develop and modernize Work methods, in a way that helps create a breakthrough in performance over a period of time. (Al-Lawzi, 1999: 266) A systematic administrative method that relies on rebuilding the organization from its roots, restructuring the building, and designing the main and basic processes to achieve fundamental development in the performance of economic entities in a way that ensures speed of performance, reduction of cost, and improvement of product quality. It is an effective program for implementing a strategic turning point through process re-engineering with the goal of achieving significant gains in service, cost, and time A logical, sequential, similar group of activities that takes inputs from resources, adds value to them, and produces outputs for customers. (Damij, 2014: 19) It is a group of techniques that aim to re-engineer processes for all processes in economic entities by redesigning them in a way that achieves effectiveness in performance and relying on different techniques that seek to achieve goals . knowledge and more

detailed information about the company (Yaqoob& Hassan, 2020). The idea of process re-engineering is based on Commitment to the following principles (John, 2010:219):

- It redesigns the process from beginning to end, in a way that enables the economic entity to perform more than one job at the same time.
- Using information systems technology and using the correct methods and techniques in applying centralization and decentralization.
- Obtaining information, and then determining its source to link similar or similar activities instead of unifying their results.
- Abandoning old traditional systems, adapting to changes in the surrounding environment and achieving survival and continuity.
- .Avoid jobs and jobs that are not of excessive value
- Increasing knowledge, learning through rationalization of decisions, and control with the help of technology.
- Quality is now a key factor in the evaluation of economic units , their level and the maintenance of their performance ,(Thijeel, & Bachay, 2019).
- The logical element for assigning cost informed the big different in result afer and before using the Resource Consumption Accounting The reason for this as the recognition of causal relationship between support department based on consuming objects (Yaqoub, & Fadhil, 2020).

Second: The importance of process re-engineering:

Re-engineering helps economic entities use their skills and resources to create new technologies as an alternative to old technologies, which makes those entities fall behind in the competitive race. Most researchers and specialists agree on the importance of process re-engineering as it is one of the approaches aimed at improving performance. Economic entities and their development, and to achieve the importance of re-engineering, we find it lies within the following points, which are (Rayhan, 2014: 27):

- Integrating specialized activities into one activity, as activities with one purpose are collected, eliminating overlap and duplication.
- Implementing work steps according to their nature, which leads to completing a group of steps at the same time, and reducing the time between work steps.
- Process re-engineering programs are adopted and are as follows (changing dynamic customer desires, increasing competition, continuing change).
- According the high levels of expectations or desires of customers, and the increasing intensity of competition between companies to meet those expectations and desires, companies have to pay increased attention to re-engineering operations and responding to change in the surrounding environment. (Thong et al, 2000: 246).
- It helps to eliminate all operational activities that cause high costs, loss and waste and implement them with better efficiency, use appropriate information technology, and quickly adapt to the environment.
- Process re-engineering allows the economic entity to deal with the market and environmental forces better than its competitors to achieve flexibility to meet changing market requirements and to face low competitor prices, and to have the technical ability to improve the plan and the ability to provide the best service to customers.

The second section: Deconstructed analysis to rationalize costs and support competitive advantage

First: The concept and importance of deconstructed analysis: Deconstructed analysis is an approach to understanding the structure and sequential operations that were implemented to deliver the product, and to provide a detailed report containing all procedures, specifications, and manufacturing methods, as it is useful in designing the sequence of operations and implementation steps to design or develop new products (Wong , 1999:10), as it begins with the process of disassembling a finished product to identify its components and specifications, which is the opposite of the usual natural design process. The deconstructed analysis gives a planning dimension when it prepares a competitive plan for manufacturing that seeks to achieve its dimensions, which are integration, standardization, and optimization, in order to make the best use of resources in the design and manufacturing processes, as necessary to improve the performance of these processes and maximize the excess value for the customer. (Kahveci; Okutwus, 2015:344) The process of collecting information that helps the economic entity focus on competitors' products in order to promote better interaction between engineering, design and manufacturing by studying the differences in design between its products and those of its competitors. Companies seek to improve the quality of their products by relying on this information (Barfield et.al, 2001: 309). A process that involves examining a competing product in order to identify opportunities to improve the product and/or reduce costs. The competing product is taken apart to determine its functionality, design, and provide information about the processes used and the cost of making the product. The aim of this process is to conduct a benchmark comparison between the temporary designs of the product with the designs of competitors in order to incorporate any advantages observed in the approach followed by competitors. (Drury, 2018: 545) The importance of applying deconstructed analysis as an input to change comes from the role played by the stages of its application on In a way that is in harmony with the conditions in which the product operates. (Stevenson, 2005: 155), awareness of the upcoming changes in the market has made the manufacturing economic entities able to benefit from deconstructed analysis techniques as a proactive plan to manage the cost, and the product to maintain market share and become a market leader. Hence, it is an important tool to maintain the efforts of comprehensive manufacturing economic entities to remain competitive in terms of providing products at the lowest cost while meeting the standards and specifications required by customers (Drury, 2000: 892).

Second: Cost rationalization and competitive advantage:

Cost rationalization depends on the optimal use of the entity's control resources and good direction for the purpose of providing products and goods at the lowest costs. and by following administrative methods to obtain a competitive advantage and achieve a competitive position. Rationalization means economy in performance, which helps the planning process achieve rationalization by focusing on the efficiency of work and compatibility in effort. It replaces uncooperative planned joint efforts, an equal flow of work instead of an uneven one, and studied decisions instead of Wise decisions dictated by necessity. (Saad; Jawad, 2020: 177), Deconstructed analysis plays an important role in rationalizing costs at a very early stage, as the budgeting process is adopted in the design or development of the product on the basis of the availability of customer requirements that are not available in the current product, and looking at the customer is an essential and influential part in the stage. Development to determine the advantages of the product (cost, quality, function). (Ibrahim, 2012: 54) This requires

compatibility between parts and components, which can be changed easily thanks to this method. Therefore, the majority of the product costs will be determined in the design and development phase before manufacturing. This contributes to reducing the gap between costs. The actual and standard cost, i.e. the deconstructed analysis, is the method of managing costs to satisfy customers, from defining the product, determining the customer's requirements, the budget, and a detailed description of the components and processes in order to control or control, from developing alternative solutions, whether to cause a change in the components or the process, which makes it more sufficient than others in providing a superior product. than others, so the Deconstructed analysis is faster in reaching the market or penetrating the future and after choosing the product to be produced based on market studies, etc., the competitors' prices for that product are known, and then the profit margin determined by the product is subtracted. (Industrial) based on a specific plan, and the remaining amount is the targeted or permissible cost. (Buonamici, 2018:447), The problem lies when the production costs are more than the targeted cost. Here, value engineering technology is used to redesign the product based on its functions, that is, determining the required functions, and identifying the components that perform this function. And redesign according to the deconstructed analysis based on the dismantling of the best, similar product, and proposing design alternatives through components that are able to achieve the targeted cost and the qualities required of the targeted elite. Today's deconstructed analysis is more than just a plan to copy a competing product, but rather it is a technology that helps learning and increases people's intellectual capabilities, which helps motivate them to adopt new methods that increase the characteristics of the product, which leads to increased demand for commodity, and stimulating competition in the market. This means that creativity is what leads to achieving competitive advantage, and of course creativity is what all economic entities seek to win in the market, especially in markets with high competitiveness, as creativity here is a plan for differentiation and enhancing ability. Competitiveness of economic entities . Cost rationalization depends on the optimal use of the entity's resources through control and good guidance for the purpose of providing products and goods at the lowest costs. and by following administrative methods to obtain a competitive advantage in order to achieve a competitive position ,customers benefit from high-quality products at low prices. (Zengin; Ada, 2010:59). the increase in Growth rates in the various fields of production through which the individual income rate increases and the relationship and feedback between inputs and outputs are stimulated ,(Ali, Abd , & Kareem , 2022).

The third topic: Integration of re-engineering and deconstructed analysis techniques to rationalize costs and support competitive advantage .

Deconstructed analysis enables the economic entity to know quality problems and the possibility of eliminating them when applying re-engineering, which leads to reducing the cost of products, and thus pricing products at prices lower than the prices offered in the market, through which these entities obtain a competitive advantage, among the most important benefits mentioned by some researchers and specialists in applying deconstructed analysis in light of the decision to adopt the re-engineering approach are what we summarize as follows:

- Minimize the number of parts used in the product as much as possible. The fewer parts and the more options, the better the quality of the product.

- Optimal use of the material and human production processes and resources available to the economic entity.
- The analysis reveals the causes of failure and accurately estimates the value, and the possibility of continuous development of the product in order to meet current needs and needs that may appear in the future.
- It leads to reducing production costs to a minimum, especially for the last meals, as well as the costs of modifications to the quality of the product later, and the costs of services and maintenance in the first stages of product provision.
- Production capacity at its maximum capacity, taking into account future expansion and development.
- Reducing training time, as well as increasing employees' experience and skills.

Reducing costs as much as possible. -

Economy and safety in using the product. -

- Achieving quality standards, improving customer service, and improving the image of the economic entity before them.

Identify new opportunities and reduce missed opportunities . –

One of the most important benefits of applying deconstructed analysis in light of adopting re-engineering to rationalize costs is what we summarize as follows:

- Reducing the number of changes required in product design. Correct performance of processes leads to a reduction in rework and redesign operations, which leads to a reduction in development time, achieves production flow, reduces cost, improves quality, and reduces the time to reach the market center.
- Rapid response to changes in customer requests. The life cycle of products is currently short and customers are characterized by rapid change in their tastes and demands. Therefore, economic entities must be quick to respond to these changes and be the fastest in getting their product to the market in order to ensure that the customer gets the product, which leads to increased sales. The profits are that a delay in reaching the customer leads to a loss of sales, and the application of the methods of deconstructed analysis and re-engineering leads to a reduction in the overall design and production time, and thus the product reaches the customer in less time.
- Improving the competitive capabilities of economic entities: Applying deconstructed analysis in light of re-engineering helps economic entities improve their competitive position and contributes to reducing costs to the lowest possible extent, which leads to increased profitability. The great diversity in product assortment and the short life cycle of products make economic entities enjoy an advantage. Temporary competitiveness may disappear at any time if a better product appears from the customer's point of view or customers' taste changes. In order for the economic entity to enjoy a permanent competitive advantage, it must compete over time, that is, reducing the response time to customer requests and the arrival of the product to the market, which leads to increased sales and profitability and obtaining customers. Renew and achieve a competitive advantage, creating a new type of competition is time-based competition.

The fourth section: conclusions and recommendations

Conclusions

1-The technique of deconstructed analysis is one of the important re-engineering tools, as it is based on the proper identification of the activities of the economic entity, including identifying activities that increase value, deleting activities that do not increase value, or reducing their cost.

2- The use of deconstructed analysis and re-engineering techniques is directly linked to the desires and preferences of the customer and providing the product or service that suits his needs. This would lead to improving the value of the product or service and, as a result, rationalizing its costs.

3- The use of re-engineering technology before economic entities leads to increasing the quality of the product, reducing its costs by making a radical change, and eliminating manufacturing process activities that do not increase the value of the product in relation to the customer's requirements.

4- Deconstructed analysis (reverse engineering) is considered one of the most important tools used in achieving targeted cost rationalization, because it is based on the basis of evaluating the competing product in order to identify opportunities to develop the economic entity's product, and as a result, modifying the second according to the specifications of the first.

Recommendations

1- The need for the economic entities in the research sample to apply the deconstructed analysis method in light of adopting re-engineering in view of the development taking place in the industrial environment and manufacturing technologies, which requires those entities to develop their manufacturing and production methods in order to achieve their planning purposes.

2- The necessity of providing the necessary components and requirements for applying a re-engineering approach to ensure its success in rationalizing costs and enhancing competitive advantages for the economic entity. That entity must focus on rationalizing the cost, availability of products, and time to ensure competitive advantage in light of re-engineering by employing deconstructed analysis.

3- Working to make a change in the reality of the cost system applied in the economic entity by modernizing it by applying modern technologies concerned with cost rationalization, represented by the deconstructed analysis technique for its prominent role in the process of calculating the cost of a solid scientific product, which was adopted in this research due to its focus on methods of manufacturing the cement product in light of the customer's requirements. It is an employment relationship with re-engineering technology.

4- Creating a division specialized in deconstructed analysis in the laboratory. Its work will be within the Research and Development Department, and its main interest will be to study the market, learn about the advantages enjoyed by competing products and compare them with the laboratory's products, find out what suits the tastes of customers, and try to develop and modernize the products, especially the resistant cement product. According to the market study, and an attempt to benefit from re-engineering technology and its tools to improve and develop production processes, and raise the level of the product in a way that enhances the competitive advantage and makes it a strong competitor in the market.

5-The integration between management accounting technologies contributes and provides more benefits to the economic entity than applying a single technology, in order to benefit from the advantages, characteristics, or benefits of those two technologies (re-engineering, deconstructed

analysis) together, as well as to enhance their strengths and avoid points Weakness, this leads to better exploitation of resources, and entity ensures the reasons for the availability of competitive advantage, as well as continuity in light of a dynamic environment.

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