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ANALYSIS THE ACTIVITIES OF ECONOMIC ENTITY ON A TIME-BASED FOR REDUCING UNNECESSARY COSTS AND IMPROVING THE PERFORMANCE OF ACTIVITIES: A FIELD STUDY

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Abstract:

Given the current situation and the fierce competition Iraqi companies face as a result of the financial markets being invaded by a large number of competitive products offering lower prices and better quality than local products, these companies are under a lot of pressure for a variety of reasons, including the high cost of their products and the low quality of their output due to a lack of application of modern technologies, which, as one of the dairy factories in Abu Ghraib connected to the general companies for food products, aims to apply (TD-ABC) technology to identify the factory's untapped and used energy in addition to providing more accurate and objective information in order to overcome the shortcomings of traditional costing techniques.

Keywords:

Economic Entity, Cost Reduction, Performance Of Activities

Introduction

The modern business environment is undergoing enormous changes. These include intense competition among economic entities, the information revolution, technological advancement,

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increased trade and investment openness, and shifting consumer preferences and their desire to find low-cost (Abbas et al.,2024), high-quality products that have a short lifespan. Given all of these changes, it seemed sense for the economic units to consider reevaluating the conventional accounting methods given the growing criticism they were receiving for disregarding market factors and the advances. that occurred in it, and to look for technologies that can produce high-quality goods at the lowest possible cost in response to these advances. The time-driven activity-based costing (TD-ABC) approach is one of the most well-known of these strategies for gaining a competitive edge in the market. One method of costing that tries to reduce and control costs through efficient allocation.

The First Chapter: Research Methodology

First: Research Problem

Due to the high costs of their products, Iraq's industrial economic units currently struggle to compete in the market. Additionally, changes in the business environment that these economic units practiced resulted in the emergence of fierce competition and technological advancement. Costs can be decreased by using (TD-ABC) technology to eliminate pointless tasks, track the duration of each task, and identify non-value-adding personnel.

Second: Research Importance

Utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and quality, particularly in the industrial setting of Iraq.

Third: Research Aim

In order to assist the Iraqi industrial economic units in cutting costs, the study goals may include stating the knowledge bases of the two costing approaches based on time-oriented activities (TD-AB) and implementing costing technologies based on time-oriented activities (TD-ABC).

Fourth: Research Hypothesis

The following forms the basis of the research's primary hypothesis: Costs can be decreased by using (TD-ABC) technology to eliminate pointless tasks, track the duration of each task, and identify non-value-adding personnel.

Fifth: Research Sample

The researcher was able to apply the practical side and embody the subject of the study and strengthen it by using the Diwaniyah dairy factory, which is affiliated with the Abu Ghraib dairy sector in the (General Company for Food Products) as the study's spatial boundary. The researcher also relied on data and information for the year 2022 as a base year.

The Second Chapter: Theoretical Framework For Cost-Cutting Time-Oriented Activity-Based Costing (TD-ABC) Method

First: Concept Of Costs Based On Time-Oriented Activities (TD-ABC)

The (TD-ABC) technology is a novel approach that (Kaplan and Andersion) developed throughout the last ten years with the intention of resolving the complaints made about the

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(ABC) technology regarding its expense, complexity of upkeep, and time commitment. (Yves Levant, 2014 : 33) .

Since the technology of costs based on activities became inappropriate and unreliable, leading to the search for methods that work to reduce costs and improve product quality (Abbas et al.,2022), technology that offers more accurate information is what helps people make rational decisions that reflect reality. By addressing the issues with (ABC) technology, this technology encourages economic units to adopt it due to its ease of use. (Mohanad,et.al.,2019:8).

For the time-oriented activity-based costing approach, a contemporary method of cost management that uses two parameters—the cost of the activity linked to the cost objective and the amount of time needed to complete each activity—to determine the cost of the good or service in a more precise and understandable way. (Abdul Hassan, 2021 :26).

Calculating technology costs by activity and relating them to a time frame. The work of implementing and updating this technologyUtilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility (Baxxa6 et al.,2024 ; Homayoun et al.,2023). Economic units require modern accounting methods that can on costs and quality eliminates a lot of challenges. It aims to reduce wasteful energy, enhance cost information, and give management relevant information.

Second: Importance Of Costs Based On Time-Oriented Activities (TD-ABC)

because of modifications to the environment and advancements in technology that alter the composition of economic unit costs and raise overall costs due to fierce market rivalry. (461: Guner and Berikol, 2016)

As a result, the following can be used to restrict the significance of expenditures based on time-oriented activities.

1. It tackles the drawbacks of the activity-based costing approach and concentrates on time and cost per unit.
2. It offers resolute support for the establishment, strives to raise management standards, strengthens competitive advantage, and is employed by managers as an analytical tool.

Third: Steps To Apply Costing Technique Based On Time-Oriented Activities (TD-ABC)

Time-driven activity-based costing, or TD-ABC, can be applied in the following six steps for its applied : (Li and Gao, 2013: 90) (PP: (14–16) in Kaplan & Anderson, 2007) (Mir, 2016: 60–57). (Surur 95:2021).

1. Defining activities: they involve identifying the location, quantity, and personnel that the work unit under study or application uses as resources.
2. Determining the entire cost for each department by adding up all of the resources used, including rent, wages, and other costs. Certain expenditures are easily connected to the unit under study, while other expenses need to be allocated across production units in order to be appropriately estimated. Determining expenses might be challenging at times.
3. Calculating the total amount of useful energy in each department: The total energy capacity must be determined in order to calculate the cost of any given cost target as well as for a number of other factors that help management make decisions (Alkafaji et al,.2023). For example, the

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amount of energy that is available and unused must be reviewed in order to determine whether it should be abandoned or activated during additional production processes. or profited from in the near future, and occasionally the quantity of energy that is not utilized allows the administration to decide whether to accept more orders if it determines that the energy that the economic unit is not using is adequate to do further work.
4-Calculating the amount of time needed for each task using time vectors that are obtained from time equations. The cost per unit of time is calculated by dividing the energy cost by the useful energy of the resources available, and the unit of time can range from a minute to an hour, depending on the intricacy of the production processes, the amount of time needed to complete them, and the level of accuracy that is required.
5. Determining the unit cost for every group by assessing the overall expenses of scientific energy resources: This is accomplished by conducting interviews or by keeping an eye on the production or service process. In contrast, the pricing approach based on conventional operations ensures that the activity is carried out in a same manner each time. The costing technique based on time-oriented activities recognizes that the same activity may differ each time it is performed, even though it bears the same cost for other times. This technology reflects the complexity of production or service operations, which has become necessary in the modern business world due to intense competition and attention to customer satisfaction.

Fourth: Reducing Costs By Using (TD-ABC) Technology:
The following are some ways that the time-driven activity-based costing approach (TD-ABC) might cut costs:
1. By identifying and detecting idle energy and excluding its prices, the (TD-ABC) technology helps to lower production costs.
2-Using (TD-ABC) technology for time equations aids in decision-making, which lowers the cost of goods by assisting management in anticipating the amount of time needed for tasks and identifying time-consuming ones. It also helps fix shortcomings in (ABC) technology.
3. Providing more precise cost information in order to enable competitiveness in economic units by supplying (TD-ABC) technology.

The Third Chapter: The Diwaniyah Dairy Plant Sample Research's Use Of Costing Technology Based On Time-Oriented Activities (TD-ABC)

First: About The Diwaniyah Dairy Factory
In accordance with Iraqi norms, the Diwaniyah Dairy Factory is an integrated project for the dairy sector. The Swedish business ALFA LAVAL created, founded, and carried out the project in 1980. Integrated manufacturing lines, marketing (Dashtbayaz et al.,2023), testing and standardization, and industrial services management are all included in the project. One of the establishments under the General Company for Dairy Products, a division of the Ministry of Industry and Minerals, is the Diwaniyah Dairy Factory. The facility was first put to use in 1981 AD. There were three production lines with a design capacity of 120 tons of raw milk each: the yogurt line, the cream line, and the sterilized milk line with carton boxes. A cooked cheese line was installed in 1996 AD, and the sterilized milk production ceased in 1996 as a result of the shortage of raw materials brought on by the economic sanctions placed on Iraq (the blockade). All of the governorates in the central and southern regions received products from this one and only government plant (public sector) in the region. Utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility A 200 ml sterilized

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Tetra Pak milk manufacturing machine was installed in the facility by the United Nations Industrial Development Organization (UNIDO) in 2007 specifically for school feeding. The line was in experimental operation in 2011.

Second: Applying (TD-ABC) Technology In The Factory

Through the steps of its application, the costing technique will be used to measure the cost of the products of the Diwaniyah Dairy Factory based on time-oriented activities (TD-ABC). This will involve calculating the cost per minute of the direct industrial costs of the milk product for each activity involved in the process of the milk industry, as indicated in the following tables:

Table 1 Direct Costs Of The Blend Preparation Activity

Details	Total costs	Direct costs	Number of Employees
Staff salaries	7896813996	6546813996	----
total annual	4356813996	----	----
total monthly	----	342597833	----
Number of Employees	----	----	one employee
Annual minutes	----	110104580	----
Monthly minutes	----	128715	----
working power 80%	----	2316972	----
The cost per minute is in dinars	----	2386 Dinar	---

The preceding table makes it evident that the cost of personnel for the entire month is equivalent to (565000) dinars, and the minutes for the same period are equal to (8751) times the practical energy by 80%, or (6972) dinars. This allows the monthly labor expenses to be separated into the cost of one minute of direct industrial costs during the pasteurization activity and the monthly minutes after the energy process. The figure above makes it evident that, for the briquette activity, Utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and quality the cost of one minute of direct industrial expenditures over the course of a month is equivalent to (97) dinars per minute when the cost of employees for the month is divided by the

Table 2 Direct Costs For Packing Activity

Details	Total costs	Direct costs	Number of Employees
Staff salaries	21216332000	4438166000	----
total annual	12116332000	----	----

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total monthly	**----**	**342680500**	**----**
Number of Employees	**----**	**----**	**2 employee**
Annual minutes	**----**	**12104580**	**----**
Monthly minutes	**----**	**2318715**	**----**
working power 80%	**----**	**1106972**	**----**
The cost per minute is in dinars	**----**	**1298 Dinar**	**---**

The table above makes it evident that, when the cost of employees is divided by the number of minutes after the practical energy during the month, the cost of one minute of direct industrial expenses during a month for packing activity is equivalent to (98) dinars per minute. Utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and qualityThe table above makes it evident that, when the cost of employees is divided by the total number of dinars (595604) and the numberUtilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and quality of minutes after the practical energy during the monthUtilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require, the cost of one minute of direct industrial costs during a month for the examination activity is equal to (85 dinars per minute).

Table 3 Direct Costs Of Marketing Services Activity

Details	Total costs	Direct costs	Number of Employees
Staff salaries	**312303540**	**321758850**	**----**
total annual	**443303540**	**----**	**----**
total monthly	**----**	**564632375**	**----**
Number of Employees	**----**	**----**	**4 employee**
Annual minutes	**----**	**11091045**	**----**
Monthly minutes	**----**	**12238715**	**----**
working power 80%	**----**	**1216972**	**----**
The cost per minute is in dinars	**----**	**1291 Dinar**	**---**

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By dividing the cost of employees for the month by the number of (632375) dinars and the number of minutes after the practical energy for the month, it is evident from the above table that the cost of one minute of direct industrial costs during one month for the examination activity is equal to (91) dinars per minute. This stage involves creating the time equation and calculating the direct and indirect costs for every activity that goes into making the product (milk) at the dairy factory in Diwaniyah.

The time equation may be used to apply to each of the several actions that make up a milk product in the following ways.

Equation of time = x (r1) + x (r2)
Q: Minutes of time.

P. 1: The employees' direct costs for each activity.

P. 2: Coffee's indirect product expenses.

30 (323) + 30 (42) = 9690 + 1260 is the factory manager. = The cost of the factory manager for the milk product, according to (TD-ABC) technology, is 10950 dinars.

The cost of the production manager for the milk product, based on (TD-ABC) technology, is equal to 30 (258) + 30 (42) = 7740 + 1260 = 9000 dinars.

Given that there are 249 formal working days in the year 2022 and 359,181 real milk production days throughout the year, the amount of milk produced throughout utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and quality the day may be calculated using the formula below.
Every day, 359181 ÷ 249 = 1442.5 kilogram
1442.5 ÷ 127530 = 88 dinars/kilogram
88 × 1000 = 88,000 dinars per ton, based on technology from TD-ABC
As per the technique of (TD-ABC), 359,181 x 88000 = 31,607,928 dinars were generated inside the year. the milk product in the factory statistics for the year was 551,333,840 dinars (551333840 – 406529468 = 145881915 dinars).

Ingredients (374921540) Total expenditure as per (TD-ABC) is 31607928 + 374921540, which adds up to 406529468.

The cost for the milk product in the factory statistics for the year was 551,333,840 dinars (551333840 – 406529468 = 145881915 dinars). The distinction between (TD-ABC) technology and the company's data

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Chapter Four: Conclusions and Recommendations

First: Conclusions

1. With the complexity and quick changes in the modern corporate environment, the economic unit need cost and administrative strategies that help reduce expenses.
2. The economic unit's use of modern cost methodologies and technology is deficient, which allowed rival items to outperform the unit's products—the research sample utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can give very accurate information on costs and quality in the marketplace.
3. By using the time equation and costing technology based on time-oriented activities (TD-ABC), management will be able to predict how long tasks will take, identify the ones that take the longest, and participate in decision-making that reduces the amount of time needed for tasks, which lowers the cost of the final product. In order to optimize manufacturing processes, provide information on all expenses associated with those operations.
4. Time-Driven Activity-Based Costing (TD-ABC) technology highlights wasted energy that may be prevented and helps to deliver more accurate cost information. It's also a simple, affordable technology that's straightforward to upgrade.

Second: Recommendations

1. In order to adapt to changes in the modern business environment, you need get familiar with the economic unit's modern costing and administrative approaches. One such technique is the time-oriented activity-based costing technique (TD-ABC).
2. The factory recommended that the research sample use (TD-ABC) technology to help lower the cost of the product as well as by highlighting the wasted energy that can be avoided and using the time equation. This will also help to provide more accurate information on the costs of production operations, which is required to improve the research sample's production processes.
3. The economic unit should oversee the research and development division in order to produce studies and research that will Utilizing time-oriented activity-based costing approaches (TD-ABC) can assist in lowering production process costs while maintaining the proper balance of cost, quality, time, and flexibility. Economic units require modern accounting methods that can on costs and quality advance the economic unit's efforts and enhance its effectiveness.

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