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# Application of Throughput Accounting Technique for the purpose of improving the strategic performance of industrial companies
## (An applied study in Diwaniyah dairy plant)

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**Abstract:**

**The research seeks to study and evaluate the possibility of applying accounting standards on achievement and finding appropriate solutions to the problems that the management of industrial units suffers from high production costs and weak interest in market study and lack of government support for its products and sinking the market with imported products with specifications and competitive price, as well as adopting the traditional cost system in Calculating costs that does not provide appropriate information to rationalize administrative decisions, which called for a study and analysis to study and analyze problems and determine the necessary ways to address them by relying on the accounting technology on achievement through the application of financial and non -financial measures to the actual data of one of the General Company for Food Products, and from the most important The results reached by the research are that the accounting technology for achievement focuses on managing restrictions and bottlenecks to maximize the achievement by increasing the volume of sales and reducing both stocks and operating costs. From the information provided by the accounting technology on the achievement of what it has R in providing information that helps improve the strategic performance of the economic unit.**

**key words: Throughput Accounting , improve the performance**

### Introduction

The industrial environment in the recent period has witnessed radical developments in the methods of production and technology, changing the shape and pattern of competition, and that the measures of traditional cost and administrative accounting systems for the purposes of measuring and evaluating performance and the information it provides about the costs of products are not commensurate with the requirements of the modern manufacturing environment, which led To the need to develop and update some administrative or operational technologies such as accounting technology on the achievement that provides a set of financial and non -financial operating performance measures that are consistent with the technology of continuous improvement through studying and analyzing areas with restrictions or bottlenecks and finding appropriate solutions to address them to maximize the completion rate and then Try to reduce the amount of frozen funds (stock), in addition to reducing the amount of money spent to convert raw materials into complete production (operating costs) .

## Research Methodology

### 1. Search problem

Most of the factories, including the Diwaniyah dairy factory, suffer from the inadequacy of their current vortal information for the needs of the administration, due to a set of productive, administrative and marketing changes in addition to the intense competition that the factory faces .

## 2. Search objectives

The research aims to:

2.1. Statement of the cognitive pillars of Throughput Accounting.

2.2 . Statement of the role of Throughput Accounting in assessing and improving strategic performance and helping economic unity in achieving its goals.

## 3. Research hypothesis

The research is based on the hypothesis that it is as follows:-

(Can be applied Throughput Accounting in the Diwaniyah dairy factory and that this application will provide measures or indicators that help improve the strategic performance of the factory and provide useful information for the factory management).

## Throughput Accounting: Theory background:

With the beginning of the nineties, Throughput Accounting appeared within the writings of (Goldrtt) as a result of the recent developments of the theory of restrictions that help to face the management needs of the information necessary to support and apply the concepts of continuous improvement adopted by the theory of restrictions by focusing on the points of suffocation and reducing the Throughput Time with the attempt to link Between the achievement and resources that have been exhausted (Sani & Allahverdizadeh, 2012:47-53), It also helps to rearrange management priorities by turning towards focusing on maximizing the achievement in the first place by increasing the volume of sales, and then focusing on controlling stock and reducing it in the second degree, and reducing operating expenses in the third degree (KIRLI, 2016: 82).

Several definitions of accounting technology have been formulated on the achievement by writers and researchers from different corners and dimensions, which are as follows:-

(Horngren) introduced a new cost accounting approach called Super Variable Costing, which considers that the cost of direct materials only is the cost of inventory and all other costs are period costs, particularly variable direct work costs and variable indirect industrial costs (Horngren, et.al,2012:312), Al-Khafaji defined it as an integrated approach consisting of a range of interconnected and coordinated processes, from obtaining materials and using them to achieve sales to the return generated from those materials (Khafaji, 2013: 18) , Mashkoor is an extension of the theory of restrictions as it is based on the management of restrictions or bottlenecks and seeks to improve achievement, reduce inventory and operating costs (Mashkoor & Habeeb, 2021: 3) .

## Concepts and standards associated with Throughput Accounting

Divides basic concepts For Throughput Accounting technology Launched by (Goldratt) is as follows:-

### 1 : Throughput

The Throughput is intended as the rate at which the economic unit obtains funds generated from the normal activity sales or services provided by the project and not production, and is measured by subtracting the cost of direct materials from sales revenue and represents as follows: (Kirli, 2016:81)

**Throughput= Sales Revenue - Cost of Direct Materials**

To calculate the output, all the funds paid by the economic unit should be subtracted to obtain the materials required for the manufacturing process, in addition to other amounts deducted from the sales revenue when calculating the completion such as (contract costs, sales representatives' commissions, customs duties, transportation wages if the unit does not have its own transportation), so the accounting for the completion: (ALagla:2011:26-25)

### 1.1 . Throughput Margin

This measure refers to the rate of conversion of inventory into sales, i.e. the manufacture and storage of large quantities of products in stores is not considered an throughput, so stocks of products and services are considered an throughput only when sold to customers (Sproull&Nelson,2015:276), Therefore, accounting for throughput focuses on the fact that maximizing sales is the only way in which the margin of completion is maximized and then maximizing the overall profits of the economic unit, so accounting for throughput is based not on the volume of production but on shifting attention to sales as a basis for measuring and evaluating the efficiency and effectiveness of managing the economic unit on the exploitation of resources ( Sror :2017,394). The completion accounting technology focuses on trying to link the achievement achieved by each product with the exhausted cost of the restricted supplier and arranging products according to their relative profitability, in order to rationalize administrative decisions regarding the selection of the optimal product selection, and to identify the efficiency of the operational processes in the economic unit according to the two equations below (Abdeen:2015,20) .

**Public margin ratio= margin of total achievement/ Total manufacturing costs**

**ratio of margin of the product= margin of achievement per hour is restricted/ Cost per hour restricted**

### 1.2 .Throughput Rate

The Throughput rate is one of the most important measures of non-financial performance that continues the process of continuous performance improvement and rationalization of operational decisions, and fits the performance evaluation of many economic units, which is based on the causes of financial performance and does not focus on financial results only as in financial performance measures, and its application tends to increase the effectiveness of the role of accounting (Alagla:2011,27), The completion rate can be calculated as follows: (Bakri, 2020: 19)

**Throughput Rate = Producing Energy X Efficient manufacturing cycle X Quality return**

**Throughput Rate = Good units sold/ Manufacturing Time total available**

### 1.3 .Throughput Time

The time element is one of the measures developed within the concept of accounting for achievement, and is considered the main element in the loading and distribution of additional costs to units produced according to this portal, which is the time spent in converting raw materials into a complete product, which is an important indicator in determining the overall achievement of the economic unit and the cost of units sold through: (Cox & James, 2012:84)(Abdeen:2015,24-2)

### 3.1 . Operating Time:

This is the amount of actual time spent operating this product at all stages of production from the time it is used as a raw material to a converted product into a fully manufactured product**.**

### 3.2 . Inspection Time:

Which is the amount of time used to check the product to make sure that the product conforms to the specifications by moving it between the production sections, and even reaching the customer .

### 3.3 . Moving Time:

This is the amount of time required for the movement of products from one production department to another, as well as the movement of products to or from stores.

### 3.4 . Waiting Time:

Which is the amount of time that the units in the production department remain waiting to start work on them, because the production department is busy performing some other operations.

### 3.5 . Storage Time:

Is the amount of time that materials or units remain operational within stores before production processes begin, and finished products before shipping them to customers **.**

### 2: Inventory

The stock includes all fixed assets held by the economic unit such as buildings, machinery and any other equipment used to manufacture products that the economic unit intends to sell, as well as inventory of all three types (raw material stock, production under operation, full production) (Sproull&Nelson, 2015: 276-277) , The entrance throughput accounting is assumed that the stock does not express the value of the achievement, but rather a disruption for the flow of funds within the economic unit because the accumulation of inventory leads to an increase in the time required for manufacturing, and this results With the stock level, that is**,: the time of completion = the value of revenues * the time needed to manufacture (Abdin, 2015: 21)**

### 3: Operating Expense

Throughput Accounting focuses on the tab of cost elements into two types, the first: the element of the raw materials and the second: the operating costs, which are all the money that is spent on the system to convert raw materials into an throughput to generate money, as these costs are necessary from others that the economic unit cannot carry out its tasks , And these costs include from the point of view (Goldrtt) on direct and indirect work, and indirect industrial costs, and are fixed costs in the short term and are borne over the period(Alrshah & Gawila:2021:177).

### Requirements for implementing Throughput Accounting:

For cost measurement and performance evaluation purposes, it requires amending some concepts and adding some new concepts as basic requirements to implement the entrance Throughput Accounting as follows:

**1 .Review the Cost Structure Tab**

In light of the latest developments in the modern business environment and then tabulation into two groups comprising the first: (cost of direct materials), and the second: the rest of the other cost elements except (direct materials) is called the Total Factory Cost or Operation Expenses or the cost of conversion, so that this set of elements is considered as fixed costs in the short term, so it may be similar Between Throughput & Contribution Margie, although their respective philosophies vary as a result of the different industrial environment in which they work (Al -Ashmawi, 2011: 370)

**2 .Study and Identify the Constraints of Productive Process:**

The restrictions of the productive process can be divided into two types: (Vargas & Others, 2017: 3):

**2.1. Constraints** and divided into:

- **In terms of the site**: Internal restrictions such as decrease in the number of employees, lack of experience, external restrictions such as low demand, lack of suppliers to deliver the required materials on time.

- **In terms of material reality:** Tangible restrictions such as raw materials, machines, equipment, and inappropriate restrictions such as inappropriate administrative decisions.

**2.2 . Bottlenecks**:

They are the points that impede the flow of the product within the production processes between the departments and the stages, due to the different production equipment energy (Linhart & Skorkovsk, 2014: 1346).

**3 . Attention to the Element of Time:**

Time is considered one of the ruling elements in all sectors, where time has become an essential element in the process of determining the costs of the product, as well as its control in the ability to achieve the active and rapid answer to the customer's requests and desires, which achieves a competitive advantage without the competitors when this is achieved by the optimal exploitation of time, as well as the time of manufacturing. To two basic time: (Tolling & Wachter, 2001: 153) (Fadel ,2020:57)

**- Value Added Time**

It is the time of operation (the time of actual operational operations aimed at converting raw materials into complete products).

**- Non Value Added Time**

It is a time (examination, handling, preparation, waiting, storage) as it does not add value to the product through these operations

**Performance: Theory background:**

Improving performance is a common concept at the level of all organizations of all activities, and improving performance is intended to use all available resources to improve output and process productivity, integrate the right technology that employs capital in the best way, and improved performance requires the balance of a range of elements of quality ,productivity, cost and balance of these elements confirm that the expectations and needs of the owners of the enterprise have been taken into account, and this integrated approach is called (comprehensive improvement management) (Muhammadi, 2019: 54).

There are many definitions of the concept of improving performance by writers and researchers that differ from one researcher to another, but all of them are in one meaning and are as follows:

(Shawamreh) is a type of human activity engineering in business organizations and is a comprehensive and organized method for treating problems that economic units suffer from and begins to compare the current situation with the planned situation of the unit with its entire sections and lines of its products and working individuals and

try to determine the performance gap, and analyze its causes to know the impact of the work environment on (SHAWAREH, 2010: 1) , And (Noman) knew it is access to the best way to produce at a low cost and high quality using the best production methods, so that the product matches the specifications that were identified in advance (Noman, 2017: 121), as (Ali) knew it is a comprehensive preparation process for economic unit aimed at reconsidering In its performance and determining the reasons for low performance efficiency and reaching economic unit to the planned or targeted level (Ali Al -Anbari, 2018 :52).

The importance of improving performance in economic unity comes through its role in the following: (Noman, 2017: 123-124)

-Achieve the best return through the optimal use of economic unit resources (human, material) and reducing the size of the loss in the available resources.

-Achieving the goals that economic unity aspires to the highest quality, less cost and short time.

-The survival and continuity of economic unity in light of all environmental circumstances and changes and under the impact of intense competition.

-Improving sales, raising the market share, and satisfying customers.

-Establishing an effective financial structure that enables the economic unit to reach the maximum possible cost - effectiveness levels.

-Enabling the economic unit to control the required quality standards in the products.

**To Improve Performance**

We must analysis process is linked to two concepts, the planned performance and expresses the capabilities available in the work environment necessary to achieve the strategy and goals of economic unity, and the actual performance expresses the level of work performance and the available capabilities as they actually exist, and these two concepts result in determining the performance gap, that is, the deviation between the actual performance The scheme (Shawamren, 2010: 2).

In this step, the causes behind this deviation are determined, and then continuing to study these causes to reach their roots, as this step begins to collect information to determine the reasons for the poor performance that led to these deviations, and it may be a weakness in training programs that led to a weakness in employee efficiency The lack of skills and experiences, a weakness in the system of rewards and incentives, or the lack of employees, or a decrease in the efficiency of machinery and equipment and other factors that affect the improvement of performance (Ali Al-Anbari, 2018: 53-52)**.**

Intervention is an organized and comprehensive method in responding to performance problems and its causes, and the response is usually a set of procedures and methods that represent more than one way to improve performance, and the appropriate procedures for the economic unit and their financial status and the expected cost depending on the required interest and usually the comprehensive intervention leads to a change in the results of the unit Economic, therefore, the strategy of improving performance must take into account the goals of economic unity in mind before applying the strategy to ensure its acceptance and application at all levels (Muhammadi, 56: 2019)

Fourth: Application

At this stage, the means or method that was chosen directly and both separately, or collecting and coordinating all the means and methods chosen in an integrated work plan that covers a sufficient period of time to transfer the comprehensive to the new situation (Ali Al -Anbari, 2018: 53) .

This process should be continuing because some methods and solutions are directly on improving and developing performance, and there should be monitoring and follow -up means focusing on measuring the change and providing inverse nutrition to take into account observations and failures in the upcoming planning and implementation process (Muhammadi, 2019: 56).

**Practical part**

The search sample is the diwaniya dairy factory, which produces many dairy products, and the cheese and cream products were chosen due to the increased demand for these two products and the high production costs compared to other products

**- Requirements for implementing Throughput Accounting**

**1. Reconsidering the cost of the cost structure**

Throughput Accounting requires a cost tab to two groups, the first: (the cost of direct materials) is the only variable cost element, and the second: it includes other cost elements except (direct material The short includes (indirect materials, indirect wages and indirect industrial costs), and the following table shows the costs of the factory for cheese and cream producers:−

**Table "1" operational expenses for cheese and cream products**

| the details | Cheese product | Cream product |
|---|---|---|
| Total expenses | *339076456 | *421748879 |
| The cost of direct materials is offered | **(135020699) | **(159174183) |
| Operating expenses | 204055757 | 262574696 |

**The schedule prepared by the researchers based on factory data**

*Total expenses for the year 2021= The amount of production (kg) X is the cost of manufacture for one (kg)
Cheese product=60406 X 5613.291= 339076456 Dinar
Cream product = 116705 X 3613.803= 421748879 Dinar
**The cost of direct materials for the year 2021 = the amount of production (kg) x cost of direct materials per (kg)
Cheese product = 60406 x 2235.22 = 135020699 D
Cream product = 116705 x 1363.902 = 159174183 D

**2: Determine the restrictions and bottlenecks in the factory and how to address them**

The restrictions and bottlenecks in the factory (research sample) and the appropriate way to treat restrictions and bottlenecks will be determined as follows:-

**2.1. Restrictions**

Through observation, scrutiny and consultation with technicians and administrators in the factory, the restrictions and bottlenecks that the factory suffered as the factory suffers from many restrictions and divides as follows

**- Restrictions of raw materials**

It is one of the external restrictions, which is outside the factory control regarding the high prices of these materials or by not being available in the required amount and in a way that provides these materials as milk is obtained through a group of centers that are outside and inside the province, as these centers work to collect and cool the milk then It is sent to the areas near the centers and then it is sent to the factory and that most milk is obtained from outside the governorate, especially the Babylon Governorate, which prepares the factory by 80% of the total amount of the received milk, knowing that the milk is transported in an unprofessional pelvic cars.

And the appropriate methods for treating the registration are to allocate an area of agricultural lands for animal breeding such as cows and buffalo because the source of milk is from those animals, as well as to grow crops that are used as feed for those animals such as barley and white corn and these lands must be close to the factory for the ease of obtaining the raw material represented by With milk.

**- Inventory**

It is one of the internal restrictions where the inventory is the money that the unit invests in the things you want to sell and includes physical stocks such as raw materials, fully -made stocks and stocks under operation, and since

accounting for achievement focuses on sales, there is an inverse relationship between the level of stock and profits, that is, the higher the stock, the lower Profit and vice versa is true, because the stock requires additional expenses that the economic unit bears to retain inventory or the stock may be damage .

### - Market restrictions:

It is one of the external restrictions facing the factory, as the market controls the product, pricing, the required quantity, and the quality of goods and services, as external competition is one of the most important restrictions facing the factory because the foreign product is less than the local product due to the absence of government support for the local product and the failure to activate the laws of customs tariffs on Imported products similar to the factory products, and thus traders are importing and marketing them in the local market at competitive prices, resulting in the consumer's tendency to these products and reluctant to buy the local product, as well as the presence of internal restrictions and these restrictions arise as a result of the lack of experience of cadres working in the marketing department, as well The lack of a predetermined marketing plan that depends as a work curriculum, as this restriction directly affects the amount of sales, which leads to a decrease in the rate of completion in the factory.

The appropriate ways to address this registration are the opening of more marketing centers in the regions and governorates as well as advertising and advertising campaigns and the promotion of products, which allows the consumer to identify all factory products, and the need to prepare a documented marketing plan that is adopted as a work curriculum through which to guess revenues and prepare to provide predecessors in advance, as A law must be issued that protects the product after the Iraqi market has been flooded with imported products.

### - Manpower restrictions:

The factory faces the problem of lack of workforce with experience as a result of the political and economic conditions that the country is going through, as the existing cadres cannot work on the devices with modern technologies due to the lack of qualifying courses for these cadres and for the age of age for the cadres available in the factory as well as the lack of financial, supervisory and administrative staff to the competencies The scientific required to practice work is both according to jurisdiction, and this restriction is one of the internal restrictions.

As for the method of dealing with this restriction, it is the rehabilitation of workers through rehabilitation courses that enable them to work each according to the jurisdiction in a manner consistent with the nature of the work.

### - Other restrictions:

The factory faces some restrictions that hinder the completion of the production process according to what has been planned, such as the laws imposed by the state and which are not in the interest of the factory, and this prevents it from following up the technological development witnessed by the developed countries, as well as the poor service reality in the country, which is the continuous interruption in The electrical current, which is the main backbone of life where all the joints of life and productive life depend on it, which may cause continuous stops in the productive process, and this affects the factory's ability to fulfill its obligations in the specified time and its dependence on alternatives represented by electric generators and for long periods even after the official working hours as it is fast -damaged products It increases production costs and thus reflects on achievement and achieving the necessary goals.

## 2. Determining the bottlenecks facing and addressing the productive process:

After the necessary restrictions and ways to address them here have been identified, the bottlenecks facing the production process in the factory and how to treat these bottlenecks will be identified, through the field researcher's field experience, it was noticed that there is a delay in the pasteurization, naturalization and cooking process, due to the statute of limitations of the Piller that contains steam leakage pipes And, which may take longer to complete the work in the pasteurization, naturalization and cooking stage, because the devices of these stages depend on the steam emanating from the Poller and this is due to the lack of a modern Poiller device.

There is also suffocation in the packaging phase due to the statute of limitations of machines, and although the local product is identical to the required specifications, packaging boxes used in old shapes and colors, compared to imported products with shapes and colors that attract the consumer.

There is also suffocation in the cooking stage due to the small size of the cooking device, which contains 70 kg capacity, although there are 250 kg capacity devices in the market.

To address these bottlenecks, the factory must keep pace with modern developments by investing in buying modern high -quality machines that help reduce the time of completion so that the factory products are always of high quality and speed and achieve consumer satisfaction and compete with imported products.

**-Using measures Throughput Accounting**

**1. Calculate the Throughput time**

The Throughput time will be calculated for each type of product through the productive stages that the product passes through, given that the time represents a very important measure within the technology Throughput Accounting, which is included in determining the total Throughput rate of the factory in comparison with the number of units sold within the available` time, as it is possible to determine The cost of the product unit sold by downloading its share of operational expenses depending on the Throughput time, so the Throughput time for each product will be clarified according to the productive stages that the product passes through the following tables:-

**Table "2" Calculate the completion time for cheese and cream**

| product | Quantity | Activities | | | | | | Through time(Ho |
|---|---|---|---|---|---|---|---|---|
| | | Pasteurization | Gibs | Cooling | Cooking | Mobilization | Examination | |
| Cheese | 1 ton | 2.37 | 8.74 | 10.92 | 4.77 | 4 | 2.2 | 33 |
| cream | 1 ton | Prepare the mixture | Pasteurization | Naturalization | Cooling | Mobilization | Examination | |
| | | 2.26 | 3.33 | 3.33 | 3.39 | 4 | 1.13 | 17.44 |

**Source: Prepared by the researchers, relying on factory data**

As for the method of calculating the time of completion in the table above for the stages of cheese production, it -:is as follows
Pasteurization: 143 hours / 60.406 tons = 2.37 hours / tons
Fibers: 528 hours / 60.406 tons = 8.74 hours / tons
Cooling: 660 hours / 60.406 tons = 10.92 hours / tons
Cooking: 288 hours / 60.406 tons = 4.77 hours / tons
Packing: 242 hours / 60.406 tons = 4 hours / tons
Examination: 132 hours / 60.406 tons = 2.2 hours / tons
-:And the way to calculate the time of completion for the stages of the production of the cream, as follows
Mix preparation: 264 hours/116.705 tons = 2.26 hours/tons
Pasteurization: 389 hours/116.705 tons = 3.33 hours/tons
Young: 389 hours/116.705 tons = 3.33 hours/tons
Cooling: 396 hours/116.705 tons = 3.93 hours/tons
Packing: 466 hours/116.705 tons = 4 hours/tons
Examination: 132 hours/116.705 tons = 1.13 hours/tons

**2. Calculation Throughput Rate**

It represents the speed of money or the amount of sales in the element of time from the time extending from the beginning of the manufacturing process to the completion of the product, and thus the factory can make the maximum profit at the factory level by selling products at the lowest possible period of time, which leads to the generation of money as short as possible The higher the completion rate than the correct one, the better, and to

calculate the rate of completion of the producers of cheese and cream, the number of units sold during the year must be calculated, and the following table shows the quantities of sales for cheese and cream during the year 2021:-

**Table "3" quantities of sales for producers cheese and cream**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cheese | January | February | March | April | May | June | 53902.120 |
| | 7134 | 4791.600 | 4855.200 | 3670.800 | 2806.800 | 6338.400 | |
| | July | August | September | October | November | December | |
| | 3804 | 3124.320 | 1971 | 7205.280 | 4571.880 | 3449.160 | |
| Cream | January | February | March | April | May | June | 109994.550 |
| | 20672.950 | 19809.700 | 12562.600 | 7086 | 2217 | 2898 | |
| | July | August | September | October | November | December | |
| | 1738 | 3066.500 | 3591 | 10375.500 | 12892 | 13086 | |

**Source: Prepared by the researchers, relying on factory data**

After that, the time of the total industrialization available during the year 2021 is calculated as follows:-
The number of working days during the month = number of days of the month - Friday and Saturday days **30-8=22 days**

Number of actual working days during the year = number of working days during the month x number of months of the year22 x 12=264 days

The time of the total available manufacturing = the number of actual working days during the year x working hours during the day

264 days X 7 hours = 1848 hours during the year

The hours of working hours are 8 hours. Half an hour was excluded, and half an hour was excluded for food and rest, as the net time of work during the day was 7 hours.
After that, the achievement rate for producers is calculated by cheese and cream according to the following equation:-

Throughput Rate = the good quantity sold /the overall manufacturing time available
Cheese achievement rate = 53902.120 / 1848 = 29.16 km / hour
The completion rate of the cream = 109994.550 / 1848 = 59.52 km / hour

The rate of achievement for cheese and cream is greater than the correct one, and this indicates that the factory works well in exploiting time, which expresses the high rate of money or the amount of good units sold.

## 3. Calculating the cost of the sold goods

Since the factory follows the traditional method in calculating the cost of the goods prepared for sale by downloading them at all costs of materials, direct wages and indirect industrial costs, as well as both administrative and marketing costs for the purpose of reaching the total cost of the product, either according to accounting for completion, the cost of direct materials involved in The units sold only, not produced, to reach the changing costs of sales, and the cost of the direct materials entered in the units sold to producers cheese, cream, and as follows**:**

**The cost of the direct materials sold for cheese = the quantity sold (kg) X the cost of the materials per kilometer**
**53902.120x 2235.22 = 120483096 dinars**
**The cost of the direct materials sold for cream = the quantity sold (kg) X the cost of the materials per kilometer**
**109994.550x 1363.902 = 150021786 dinars**

After the cost of the direct materials included in the production of units sold from cheese and cream for the year 2021, then the cost of operational expenses of the quantity sold by determining the cost (kg) one of the operational expenses of total production will be calculated by dividing the operational expenses to the amount of production and this can be explained and as follows:-

**The cost (kg) one of the operational expenses = operational expenses / production amount**
**The cost (kg) of cheese = 204055757/60406 kg = 3378.07 dinars/ kg**
**The cost (kg) of the cream = 262574696 /116705 kg = 2249.9 dinars / kg**
**After the cost of one (kg) was calculated from the operational expenses, then the cost of the operational -:expenses of the quantity will be calculated and calculates as follows**
**Operating expenses of the quantity sold = the amount of sales x cost (kg) of operational expenses**
**Cheese operational expenses = 53902.120 kg x 3378.07 = 182085134 dinars**
**Operating expenses for cream = 109994.550 kg x 2249.9 = 247476738 dinars**

Because the cost of the sold ketchup of cheese and cream consists of direct materials entering the production, in addition to the share of the kg of operational expenses, so the cost of the kg sold for cheese and cream consists as follows**:-**

**2235.22dinars/kg + 3378.07 dinars/kg = 5613.29 dinars/kg the cost of cheese sold**
**1363.902dinars/kg+ 2249.9 dinars/kg = 3613.8 dinars/kg cost the cream sold**

It is clear from the above that the cost of the sold mg is higher than the selling price, as the price of the cheese is (3777.6) and the sale price for a cream is (2039) and thus the factory achieves a net loss, so the factory management must increase the amount of sales that contribute to increasing the volume of production as a result of an increase The demand for products, and thus fixed costs will be distributed over larger quantities and thus the one kg share for cheese and cream will decrease from operational costs.

## 4. Calculate inventory

Accounting for completion is assumed to convert stocks into sales, and that increasing production and keeping it in stores is not an achievement until after selling it to the consumer and receiving its price, either the inventory is not sold, whether complete or incomplete, remains in the stores and the factory bears additional costs to save the stock.

Through the field visits of the factory and the researcher informing the warehouse records in the account and stores section, I noticed the presence of a complete production stock of cheese and cream, and this leads to disrupting the flow of money inside the factory because the accumulation of inventory leads to an increase in costs and this results in a decrease in final profits, so accountability is about Achievement assumes the reduction of inventory because the production that has not been sold holds the factory, the costs of storage and the possibility of being damaged or low quality as a result of environmental conditions or poor storage, and the costs of complete production stocks can be clarified last period for cheese and cream products in 2021 and as follows:-

**Quantity stock Production The last time= Stocks of the first period+ Quantity of production during the year- Quantity of sales during the year, Note that the stock of the first period is zero**
**The amount of inventory is complete, the last period for cheese = 60406 - 53902.120 = 6503.88 kg**
**The amount of stock is complete production last period for cream = 116705-109994.550 = 6710.45 kg**

As for the cost of complete production stock, the last period for producers is calculated as follows:-

The cost of complete production stocks is the last period = the amount of complete production stock last period x cost one kg

**The cost of the last period for the gene for the gene = 6503.88 kg x 5613.29 dinars = 36508165 dinars**
**The cost of the last period for the cream = 6710.45 kg x 3613.8 dinars = 24250224 dinars**

## 5. Calculate Throughput Margin

This scale represents the relationship between the Throughput Margin of total and the total costs of the factory if the rate of achievement margin is greater than one, this is an indication that the manufacturing process is profitable and feasible in covering the costs of operational operations, so the income detection will be prepared in light of the concepts of accounting for the completion and the arrangement will be different in Variable cost items

that include direct materials only and that the difference between sales revenue and variable costs is the Throughput Margin of factory, and this can be seen through the following table:-

**Table "4" income detection according to Throughput Accounting of cheese and cream**

| Details | Cheese product | Cream product |
|---|---|---|
| Refining sales | 203624273 | 224142393 |
| The cost of materials | (120483096) | (150021786) |
| Throughput Margin | 83141177 | 74120607 |
| Operating expenses | (182085134) | (247476738) |
| Administrative and marketing costs | (128437798) | (155277181) |
| Net profit or loss | (227381755) | (328633312) |

**Source: Prepared by the researchers, relying on factory data**

After that, the percentage of the margin of completion is calculated according to the following equation:-
**Throughput Margin Ratio = Throughput Margin / Total Costs**

Throughput Margin Ratio Choose=83141177/ 310522932+120483096= 0.192

Throughput Margin Ratio Cream=74120607/ 402753919 + 150021786 = 0.134

It is clear from the above proportions, which are less than the correct one indicates that the production process of the factory is unprecedented that the factory achieved a net loss, which shows from previous indicators that the situation of the economic unit is not good, which requires the management of the factory to improve its performance.

It is clear from the above that the application of Throughput Accounting in the Diwaniyah dairy factory will contribute to providing information for the administration to improve the performance of the factory by calculating the indicators Throughput Accounting that aims to maximize the Throughput by increasing the volume of sales, reducing the levels of inventory of all kinds and reducing the time required for manufacturing that works to reduce expenses Employment, in addition to the fact that Throughput Accounting provides information on the performance of the factory and explaining the most important points of restrictions and bottlenecks in the productive process and setting some appropriate solutions to improve the performance of the factory, and that the above results call on the researchers to accept the research hypothesis that states the following: (Throughput Accounting can be applied In the Diwaniyah dairy factory and that this application will provide measures or indicators that help improve the performance of the factory and provide useful information for the factory management).

## Conclusions and Recommendations

The research reached a set of conclusions, which is as follows**:-**

**1 .**Throughput Accounting is concerned with the cost of direct materials as a variable cost that carries production and the rest of the other costs as the costs of a stage spent by economic unit, whether it is produced or not produced and is constant costs.

**2 .** Throughput Accounting is its primary goal is to achieve the profits generated by the sale process and not just production, as it focuses on maximizing the achievement by increasing the volume of sales, reducing inventory and operating costs.

**3**. The factory faces many restrictions and bottlenecks, including high production costs, delay in the arrival of raw materials, limitations of machines and machines, the small number of professional workers, poor interest in marketing aspects, in addition to the laws and instructions imposed by the state, which led to the inability of the factory products to compete with imported products With a competitive sale price.

**4** . Throughput Accounting contributed to providing information to the administration through the standards of completion (Throughput time, Throughput rate, Throughput margin,) , From these measures it was found that the factory is good as a result of the loss of losses.

**5** .There is a delay in pasteurization, naturalization and cooking due to the statute of limitations of the Pileer, as this device contains steam leakage pipes, which may take longer to Throughput the work in those stages.

The Researchers submitted recommendations as follows:-

**1 .**The need for Iraqi industrial companies in general and the General Food Products Company in particular using modern cost systems for the purpose of measuring the cost of production, rationalizing administrative decisions and improving strategic performance such as technology Throughput Accounting.

**2 .**The fact that the factory management should keep pace with modern developments in investing in the purchase of modern machines of high quality and speed that help reduce the Throughput time.

**3 .**The need to work to increase the rate of Throughput margin by increasing the volume of sales and reducing both inventory and operating costs.

**4** . The factory administration analyzes the reasons for the high production costs and seeks to reduce them through the optimal use of resources and prevent waste in order to maximize Throughput .

**5 .** Restructuring of the factory workers through the exploitation of excess workers by reducing the number of workers in the administrative departments and increasing the number of workers in the productive departments, as well as developing workers in the factory by giving them in development courses for the purpose of increasing their efficiency and enabling them to work on the devices with modern accommodation

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