



EVALUATION OF THE REALITY OF THE PERFORMANCE OF THE SUPPLY CHAIN IN UR GENERAL COMPANY A CASE STUDY IN THE MIDWIFE'S FACTORY

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Article history:	Abstract:
<p>Received: April 26th 2022 Accepted: May 26th 2022 Published: June 14th 2022</p>	<p>The supply chain is one of the most important entrances to measuring the performance of organizations, as it includes all operational activities starting from the supply process through production operations to quick supplement and delivery to the customer. Performance measurement is the cornerstone for measuring the organization's success in achieving its goals, as the effective supply chain contributes to enhancing the dimensions of organizations' competition.</p> <p>The research aims to identify the reality of the performance level of the supply chain for the Ur General Company / Dhi Qar, and then to identify the weaknesses in the performance of that chain, using a set of measurements for evaluating the performance of the supply chain presented in the literature of production and operations management, namely (inventory turnover, number processing weeks, and rate of return on assets). The time period that was subject to measurement, evaluation and analysis was the years from 2019 - 2020</p> <p>The research reached several conclusions, the most important of which is that the company's management pay sufficient attention to managing the supply chain, as the company does not have an evaluation of the performance of its supply chain. The results of the evaluation of the company's supply chain using the mentioned financial indicators showed the efficiency and effectiveness of the plant's management in managing its supply chain to achieve its objectives. The research concluded with a set of recommendations, the most important of which is the need for those in charge of the company's management to pay attention to the process of evaluating the performance of the supply chain, and its usefulness in achieving the financial and nonfinancial goals, to continuously determine the reality of the performance of that chain, and to diagnose the strengths in a way that enhances the dimensions of its performance. competitive.</p>

Keywords: supply chain management, performance evaluation, inventory turnover, supply period, rate of return on investment.

INTRODUCTION

The business environment is characterized as a rapidly changing environment, so companies operating within this environment need to be able to adapt to such changes and take appropriate and necessary measures to develop their operations and activities, especially activities related to supplying operations. For this, the organization needs to use many tools, means and accurate scientific methods in making some of the multiple decisions, including the

process of measuring the performance of the supply chain to identify the strengths and weaknesses in its chain in order to strengthen the first and get rid of the second, which contributes to improving the performance of the supply chain. Also, many important and recent issues that have emerged in the supply chain, the most important of which are strategic partnerships, achieving customer satisfaction and happiness, and competitive dimensions, which make it imperative for companies to give more attention to



their supply chains.

The research was organized into four sections, the first section dealt with the scientific methodology of research, the second topic dealt with the theoretical side of the research and the third topic was the practical side, while the fourth topic came with the most important conclusions reached by the research and put forward the most important recommendations.

THE FIRST TOPIC

Scientific Methodology of Research

First: research problem

In general, Iraqi industrial companies suffer from a lack of interest in measuring the performance of their supply chains, and not paying attention to their critical importance in the continuity and success of the organization in the field of business in which it is located. The research problem stems from the need of Iraqi organizations, especially industrial organizations, including the company in question (Ur General Company for Midwives Industry) to develop tools to measure the performance of its own supply chains, to determine the reality of the performance of the supply chain for the mentioned company as it has become one of the important indicators to measure the company's success in achieving its goals.

Therefore, the research problem is embodied by answering the following questions:

1. What is the performance level of the supply chain of Ur General Company?
2. What are the strengths and weaknesses in the performance of the company's supply chain?
3. How can the company's supply chain performance be improved?

Second, importance of research

The importance of the research is reflected in its attempt to shed light on one of the most important topics in the field of production and operations management, which is (measuring the performance of supply chains), being an important and reliable topic in measuring the success of organizations in achieving their goals, which helps the researched company to rely on actual indicators to measure its performance and the extent achieve its goals. The research is based on extrapolating and diagnosing the current reality of the performance of the supply chain for the Ur Midwives Manufacturing Company / Dhi Qar to find out the current status of the performance of the chain of the company and evaluate its performance in order to identify its strengths and weaknesses, and the opportunities and external threats and risks it is exposed to, through the use of a set of financial

indicators In evaluating the performance of the chain, and thus being able to determine the efficiency and effectiveness of management in achieving the planned goals, whether in the past or present, or predicting what will

Third: Research objectives

- 1- Identifying the performance level of the supply chain of the company under study.
- 2- Identifying the strengths and weaknesses in the performance of the company's supply chain.
- 3- A statement of the Procedures that can improve the performance of the supply chain.

Fourth: Research Methodology

In order to achieve the objectives of the research, the descriptive approach is used, which is based on a survey and review of the literature of production and operations management to frame and present the theoretical aspect of the research, and then use the analytical approach in practical application by studying and evaluating the performance of the chain of the company using the financial indicators for the period under study.

Fifth: The spatio-temporal limits of the research

The spatial boundaries of the research were represented by Ur General Company in Dhi Qar Governorate, and the time period that was subjected to measurement, evaluation and analysis was represented in years from (2019-2020).

Sixth: Standards and indicators used in the research

For the purpose of evaluating the performance of the company's supply chain, the research used the following metrics:

- 1- Inventory metrics (inventory turnover, number of supplying weeks)
- 2- Financial measures (rate of return on assets)

The Second Topic

Theoretical Framework for Research

First: The concept and importance of supply chain management

An organization's operations play an important role in its overall competitiveness and long-term success. Given the critical role that operations play, it is important to keep abreast of significant developments in operations and general business trends that may affect the function of operations. With the intensification of competition and globalization over the past decade, supply chain management has received more attention from manufacturing



companies. Firms are increasingly relying on their supply network to handle more complex technologies and higher customer expectations. Among these expectations is the increased attention being devoted to the social responsibility of suppliers with a particular focus on the fair and legal use of natural resources (Buyukozkan & Cifc, 2012: 3004). Interest in the concept of supply chain management has increased steadily since the 1980s when companies saw the benefits of collaborative relationships within and outside their organization. This term does not replace Supplier Partnerships, nor is it a description of the supply function. Industry teams are now working together to improve the integrative processes of supply chain management and expedite the benefits available through successful implementation. The competitive importance of linking a company's supply chain strategy to its overall business strategy and some practical guidelines for successfully managing the supply chain are presented. (Lummus & Vokurka, 1999: 11). The first to discuss the concept of "the supply chain" was the management consultant (Keith Oliver) in the early eighties of the last century, specifically in 1982, in an interview with the (Financial Times) on June 4, 1982 (Stock, 2009: 147). Subsequently, several concepts and different perspectives emerged from many writers and researchers in the field of "Logistics Management". It is worth mentioning that supplies are part of the supply chain involved with the forward and reverse flow of goods, services, cash and information (Stevenson, 2015: 650).

Supply chain management can be defined as a set of methodologies used to effectively integrate suppliers, manufacturers, shops, and stores, so that goods are produced and distributed in the right quantities, to the right locations, and at the right time, so that the total system cost is as low as possible while maintaining the achievement of service level requirements.

(Jacobs and his colleagues) see that the importance of supply chain management is manifested through its relationship to operations management as follows (Jacobs, et al. 2009:6-7):

1- The study of business administration is not complete without understanding the modern approaches to operations management and the increasing interest in its interrelated fields of supply chain management and total quality management (TQM), as well as process re-engineering and timely delivery of products.

2- Operations and Equipment Management provides a systematic way of looking at the operations of the organization, especially as it adopts a thinking approach based on the analytical approach to the problems facing companies from the reality of daily life.

3- Operations and Equipment Department provides important opportunities for career development for workers in this field. They occupy important positions in the field of supply chain management, procurement and quality, in addition to the fact that some companies attract individuals with high capabilities in the field of operations and processing to work in some areas such as process re-engineering and resource planning for the organization.

4- Using the concepts and tools of operations management and equipment extensively in the management of other functions of the business. It should bring together managers for business planning and quality control, in addition to ensuring high productivity for individuals who work within their supervision, and workers in general have to know how the operations are going in order to perform their work more effectively.

5- The strategic importance of the supply chain emerges as a result of the intensification of competition between companies due to its recommendation, high quality, low cost, speed of entry into markets, in addition to reliance on the supply chain, which has become of great importance, as it is one of the sources of competitive advantage for international companies (Heizer, et.al., 2017: 445), and the best proof of this is the impressive successes that Dell has achieved over its competitors by adopting an advanced supply chain, which enabled it to achieve superior profits and revenues (Chase, 2009: 359).

Second: Objectives of Supply Chain Management

The main objective of supply chain management is to structure the supply chain to achieve maximum competitive advantage and consumer benefits (Heizer, 2017:444). The main objectives of the supply chain can be stated as follows:

- * Obtaining a good product in the right place at the right time and at the lowest cost.
- * Keeping stock as low as possible and providing the best customer service.
- * Reducing production cycle time.
- * Reducing uncertainty and risks in the supply chain.
- * Focus on optimizing the system.



Third: Components of Supply Chain Management:

Supply chains are the lifeblood of any business organization. They connect suppliers, producers, and end customers in a network necessary to create and deliver goods and services. Supply chain management is the process of planning, implementing and controlling supply chain operations. The core components are strategy, procurement, supply management, demand management, and logistics. The objective of supply chain management is to match supply and demand as effectively and efficiently as possible. The main aspects relate to: (Stevenson, 2018:654)

- 1- Determine the appropriate level of outsourcing
- 2- Purchasing Department
- 3- Supplier Management
- 4- Customer relationship management
- 5- The ability to quickly identify problems and respond to them.

Service supply chains are designed out of the need to provide support to the essential components of the various services provided. The primary purpose of designing the supply chain for manufacturers is to control inventory by managing the flow of materials. The reason is that industrial companies spend more than 60% of total sales revenue on purchased materials and services, while typical processing services spend only 30-40%. And because such materials comprise a large part of the company's sales, large profits can be achieved from a simple reduction in the cost of these materials. This makes the supply chain the basis of a competitive weapon. (Krajewski et.al., 2016:506-507). The role of the customer and the orientation towards delivery operations constitute the main feature of the difference between service supply chains and commodity supply chains. Thus, service supply chains focus on the interaction between

the customer and the supplier, while manufacturing supply chains focus on creating and delivering physical goods. Sampson & Froehle also indicated that the traditional supply chains for manufactured goods are relatively linear, as shown in Figure 1, the flow of production indirectly from the producer to the consumer through a group of channels that represent the suppliers. The first category represents a flow of information related to orders, feedback and payment information. As for the supply chain for services, the role of the customer is expanded and reaches the supplier himself, as in some of the inputs related to legal cases that the customer presents to the lawyer, and this is what generates a bi-directional chain, not unilateral as in manufacturing. Therefore, there are many differences between the two types that lie in three points. The first, in the case of services, is a chain that is in the form of a hub and not a chain, and managers are accused of the flow of products in both directions, and for the two levels in the service supply chain, the supplier is the customer of the customer when he deals with an external supplier. The second is that the two-way supply chain is short, since the service provider tends to deal directly with the customer without the mediation of the distributor or the retailer. This feature may reduce complexity in the chain and facilitate the delivery and subscription of information. The third consideration is that the service provider cannot deal with suppliers who are customers in the same direction without dealing with suppliers who are not considered customers (Chase, 2009: 365-366).

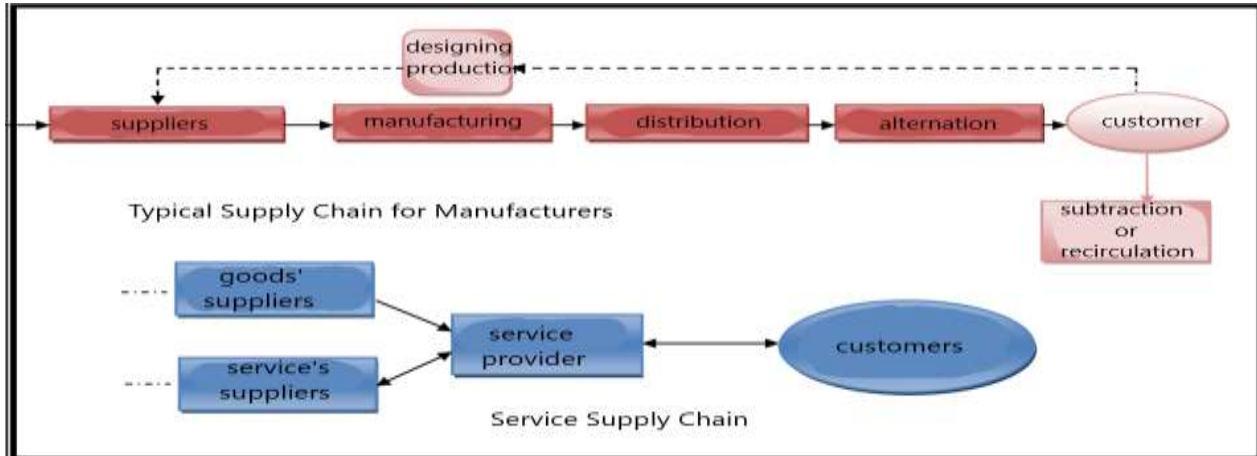


Figure (1) Supply Chain for Manufacturers and Service Providers

Source: Chase, Lee, (2009), "Operations management and supply chain", 4th.ed., England , Pearson Education, Inc,p.366.

Fourth: Measuring the performance of the supply chain

Regardless of whether the supply chain supports services or manufacturing, managers need performance measures to assess the effects of changes in the supply chains. This may be done through stock metrics or through financial metrics (Krajewski, et.al.2016:508). As shown below

First: Inventory metrics

All inventory measurement entries begin with a physical calculation of units, volume, or weight. In general, these measures are represented in three main ways:

1- The average total inventory value, which represents the total value of all materials kept in the company's warehouses. It is measured by cost so that this measure includes all types of inventory of raw materials, semi-manufactured and finished goods. It is concerned with the rate because this value represents the investment in the stock over certain periods of time. And if we assume that a merchant keeps two types of materials (A) and (B) (and that the value of one unit of the first type is low, while the value of the second is high, then: (Krajewski, et.al.2016:508)

Average total value of inventory = Number of units (A) x (Unit value) (A) + Number of units (B) x (Unit value) (B)

Where this value refers to the amounts of money frozen in stock, and the ratio of stock to total assets in industrial organizations reaches 25%, while this percentage rises with wholesalers and retailers to

reach 75%. Management can determine whether the total inventory value is too low or too high by historical or industry comparison or by managerial judgment.

2- The number of weeks of supply The measure of best performance takes into account the demand that time-related supply chain performance measures have important implications. Many manufacturers and service providers measure the percentage of on-time delivery of their products, and this measure is influenced by performance in both internal and external supply chains. It is calculated according to the following formula: (Krajewski et.al.2016:509)

Number of weeks of processing (time during which inventory covers demand) = average total inventory value / weekly sales (at cost)

Although the numerator includes the value of all materials (raw materials, in process, and finished goods), the denominator represents only the finished goods sold - at cost instead of the selling price after raising the price or discount. This cost is referred to as the cost of goods sold.

3- Inventory turnover Inventory turnover is one of the indicators that measure the efficiency of management in converting goods into cash by selling them and determining the degree of inventory liquidity and gives us an indication of the quality or efficiency of the inventory, so this indicator is a rate that shows the quality of the stored goods and this can be used Average to measure the efficiency of the sales, marketing and warehouse departments in the company. The high rate of inventory turnover means



that the company invests less money in the commodity inventory to achieve a certain sales volume. Therefore, the financial department works to motivate the concerned departments in the company to raise the rate of this percentage. (2018:6 Karimi and Barati,)

Inventory turnover is a measure of inventory obtained by dividing annual sales by the average value of total inventory maintained during the year, (Krajewski, et.al.2016:5)

Inventory turnover = annual sales / average total inventory value

It is also calculated based on the cost of goods sold as follows: (Karimi and Barati, 2018:6)(Chase,2009:359).

Inventory Turnover = Cost of Goods Sold / Average Value of Inventory

Second, the financial metrics

How the supply chain is designed and managed has a significant financial impact on the company. Inventory is an investment because it is required for future use. However, inventory employs funds that can Table (1) The actual and planned monthly production of midwives in 2019

be used more profitably in other operations. (Krajewski, et.al.2016:510-511)

- * Total Returns
- * Cost of Goods Sold:
- * Operating Expenses:
- * Cash Flow:
- * Working Capital:
- * Return on Assets:

The higher this rate is, whether relative to the industry average or to previous years for the same company, the better the company's performance will be and it will achieve good profits, and it is calculated according to the following equation: (7: Karimi and Barati, 2018).

**The Third Topic
 Practical framework for research**

Production is carried out in the company on demand. The company contracts with various authorities in the governmental and private sectors to supply it with cable products of all kinds (electrical, twisted, insulated winding wires and household wires). The actual annual production of Qalu for the year 2019 was (4760) tons, while the planned production was (9976) tons, as shown in Table (1)

Months	Janua ry	Februa ry	Marc h	Apr il	Ma y	Jun e	Jul y	Augu st	Septem ber	Octob er	Novem ber	Decem ber
Actual Quantity	321	527	336	678	488	583	420	565	419	408	-	15
Planned Quantity	834	825	835	827	834	829	835	834	830	832	830	831
percenta ge	%38	%64	%40	82 %	59 %	70 %	50 %	68%	%50	%49	0	%2

Source: Prepared by the researcher

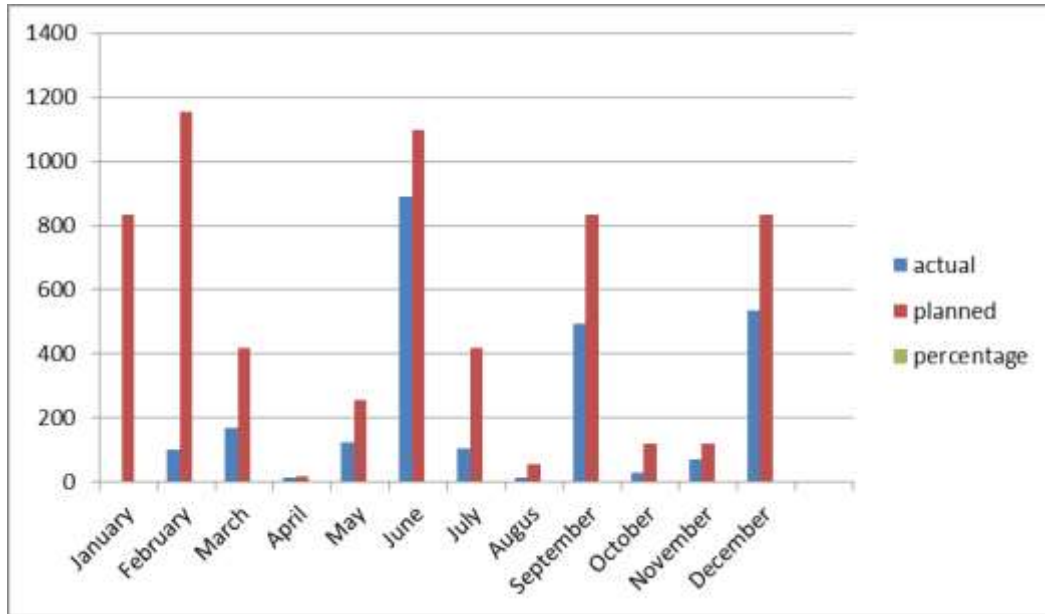


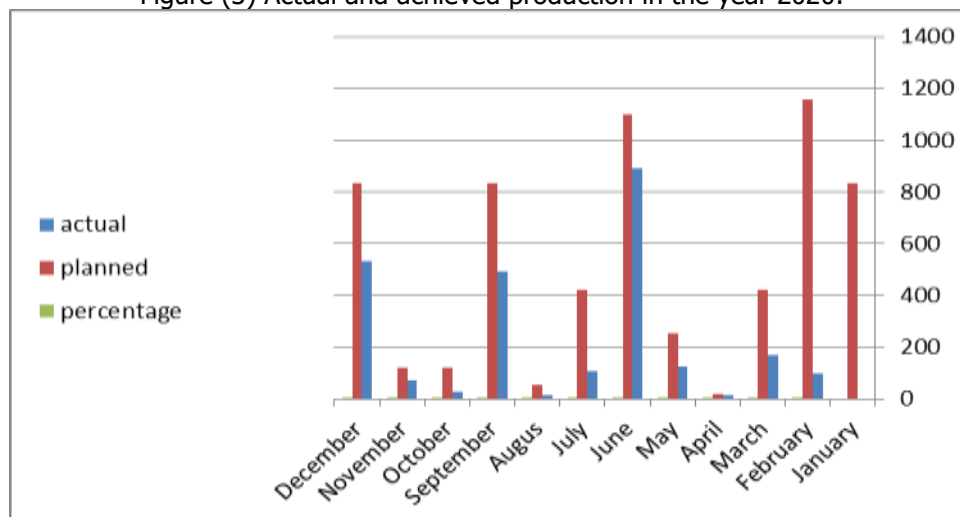
Figure (2) A chart of the actual and planned production for the year 2019 .

The actual annual production of midwives for the year 2020 was (2548) tons, while the planned production was (9976) tons, as shown in Table (2).

Table (2) The actual and planned monthly production of midwives in 2020

Months	Janua ry	Februa ry	Mar ch	Apr il	Ma y	Jun e	Jul y	Augu st	Septem ber	Octob er	Novem ber	Decem ber
Actual Quantity	-	100	168	15	125	892	105	15	494	28	72	534
Planned Quantity	834	156	420	20	255	1100	420	55	834	120	120	834
percent age	0	%64	40 %	75 %	49 %	81 %	25 %	27%	%59	%23	%60	%64

Figure (3) Actual and achieved production in the year 2020.





For the purpose of evaluating the performance of the supply chain of the laboratory under study, three financial measures were used (inventory turnover rate, number of weeks of supply, and rate of return on investment) and based on the laboratory's financial statements for the years (2019-2020), which are disclosed in the laboratory's financial statements,

balance sheet list And the income statement, and as shown in the table below, the historical criterion has been used for the purpose of determining the reality of the performance of the supply chain, that is, evaluating the performance of the chain by comparing the mentioned indicators for the year 2020 with the previous year 2019.

Statement	Average value of inventory (billion dinars)	goods cost sold out billion dinars	net income (billion dinars)	total assets (billion dinars)	modified rotation Inventory (Once)	Number processing weeks (week)	rate of return on assets %
Years							
2019	810	7594	13062	76690	9	16	16
2020	653	13216	27836	86680	20	3	32

First: Evaluate the performance of the supply chain using the inventory turnover index

The results of calculating the inventory turnover rate for the years studied clearly showed that this rate increased in general in both years, which indicates that the company's management seeks to achieve the best in the performance of the supply chain to achieve competitive advantage through efficient and effective management of the chain.

Second: Evaluate the performance of the supply chain using the indicator of the number of weeks of supply

The results of calculating the number of weeks of processing for the studied laboratory and for the years studied reveal that the time period for processing customer requests by the laboratory has decreased in a very large way, and this clearly indicates the interest of the company's management in responding to customer requests and delivering the product as quickly as possible and in the right time, which indicates the strength of the company's management of a chain processing them, thus increasing their ability to satisfy customers.

Third: Evaluate the performance of the supply chain using the rate of return on assets

The results of calculating the rate of return on assets for the investigated laboratory and for the years studied indicated the high rate of return in general and the reason for this decrease is due to the decrease in the value of the company's inventory, which was reflected in this decrease in the cost of goods sold on

the one hand, and the company's sales increased as a result of the decrease in the processing time for customer requests, and all of that It clearly indicates the strength of the company's management of its supply chain, thus increasing its efficiency and effectiveness in achieving its objectives.

CONCLUSIONS AND RECOMMENDATIONS

First: conclusions

- 1- Paying attention to the management of the supply chain, as there is no evaluation and measurement of the performance of the supply chain in the laboratory.
- 2- The results of the evaluation of the factory's supply chain using financial indicators and comparing them with previous years, i.e. using the historical standard, showed the efficiency and effectiveness of the factory's management in managing the supply chain to achieve its objectives.
- 3- The analysis shows the power of the factory management in managing the commodity inventory to generate sales.
- 4- The results of the analysis showed an increase in the efficiency of the laboratory management in responding to the requests for processing and delivery to customers in a timely manner.
- 5- The results of the analysis resulted in a higher profitability of the plant due to the high efficiency of the plant management in managing the supply chain.

Second: Recommendations

- 1- Those in charge of managing the plant should pay great attention to the process of measuring and



evaluating the performance of the supply chain and its usefulness in achieving the objectives (material and immaterial), to continuously identify the reality of the performance of that chain, diagnose its strengths and work to strengthen and increase it.

2- The necessity of the factory management's attention to managing the stores, balancing the benefits and costs of investing in it, and avoiding excessive investment in storage. Inventory models can be used as a model of the economic demand quantity for that purpose.

3- The need for the factory management to pay attention to responding to customers' requests and delivering the product in a timely manner to gain customer satisfaction as they are the main axis in the supply chain, in a way that enhances the competitive advantage of the factory.

4- The need for those in charge of managing the plant to pay attention and maintain the production processes, tools and methods used, as well as the distribution outlets, to ensure that the product is manufactured at the appropriate times, with the appropriate quality and speed in the process of its delivery to customers.

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