



***The Importance of Product Cost Rationalization to achieve a Customer Satisfaction Applied research in the Electric Cables Plant / Ur State Company***

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***Abstract***

The research aims at explaining the reasons for the high cost of production and the application of modern concepts in accounting costs and administrative, which came to remove loss and waste and rationalization of costs and improve operational performance and in response to changing conditions in the business environment. As a result of these variables and circumstances, the research problem was manifested in the high cost of manufacturing the products of Ur Company, which lost competitive precedence with other products in terms of price, quality and other specifications imported from various sources. In order to achieve the objective of the research and solve the problem was developed a basic hypothesis that the use and application of modern concepts lead to rationalize the cost of manufacturing products and improve activities and processes and create a market share in the local environment.

divided of research into three topics The first topic reviewed the theoretical aspect of modern concepts and competitive priorities, including rationalization of costs and removal of loss and improve performance and address the negatives in traditional concepts and methods. Either the second topic dealt with how to rationalize the cost of some of the products of the electrification plant, either the third section, he concluded with a number of results, the most important of which was the high proportion of production costs, especially the proportion of direct wage costs to the total cost of manufactured goods (37%) Very high percentage and low competitive precedence prices of local products of the company compared to the prices of imported products, and the obsolete equipment and machines in the factory. This caused a significant increase in the cost of maintenance and backup tools. A significant reduction in actual production levels from the planned annual level of energy.

It is also necessary to continuously seek to reduce the production, marketing and administrative costs of the plant, the need to seek replacement of machinery and equipment with advanced technology



machines, and to impose customs duties on the imported product and activate the role of the standardization and quality control apparatus.

**Keywords:** Rational costs, Competitive Precedence.

### **Introduction:**

In view of the developments in the modern business environment and the increasing pressure on industrial companies to satisfy the desires and needs of customers and then stay in the market competition. It is necessary for these companies to produce goods or provide the services demanded by consumers with high quality and at the right prices.

That the process of production or delivery of goods and services by companies may significantly affect the global competition and technological progress, which necessitated the introduction of new products to meet the speed of change in customer requests and tastes and to be of high quality, which led companies to think seriously to keep pace with this development and respond to this change in applications Tastes.

In order to be able to guarantee, stay and compete in the local and international market, the companies must continuously improve their implementation activities and guide the cost of their products from product design and quality through adherence to production specifications and cost management to customer service. The best way is to adopt the methods and concepts of modern cost accounting and management Impact on product costs to achieve cost-competitive precedence.

The use and application of cost leadership leads to rationalization of costs, exclusion of waste, loss of time, material, human and informational resources, and improvement of the quality of goods and services provided to the customer for satisfaction, which is reflected in reduced prices, reduced response time, broad vision and innovation and competitive advantage.

The competitive superiority gives the company the ability to excel in the performance of competitors in the industrial sector in which it operates, and it provides harmony between the company's resources and opportunities in the surrounding environment as well as it is characterized by the durability and strength and the difficulty of imitating competitors and finally provides a basis for future improvements and through the guidance and motivation to the whole joint And the components of the company and for the purpose of achieving this research has been divided into three aspects to cover the theoretical and practical aspects and the main conclusions and recommendations that came out.



## Methodology of Research:

The research methodology includes the following:

### First: Research problem:

Most of the products, including the products of the Or Company for the manufacture of cables and cables - the electrical capacitor factory, the research sample suffers from a high cost of manufacturing, which makes its competitive position is weak compared to competing foreign products. This is due to the transformation of the business environment in which the company operates from a non-working environment Competitive environment to a wide competitive environment where products are exposed from different global originators at different prices and quality, which led to a significant drop in sales and significant losses.

### Second: The importance of research:

The research derives its importance from the following:

1. Study and application of modern concepts of cost accounting and management accounting and its contribution to achieve competitive precedence.
2. Contribute seriously to increase the level of awareness of the administrative leaders of the economic units of the importance and the need to apply modern concepts that lead to rationalization of costs and improve the performance of companies on an ongoing basis.
3. Providing the economic units with a working guide to rationalize the costs and raise the quality of their products in order to survive and compete.

### Third: Research Objective: The research aims to:

1. Statement of the reasons for high production costs and weaknesses in the performance of production systems management.
2. Application of modern concepts and methods that will enable the company to stay and continue in the competition market by identifying the areas of rationalization of costs and increasing the volume of production and collection of revenue and the elimination of accumulated losses.

### Fourth: The hypothesis of research:

The research is based on a basic premise:

The use or application of the precedence of rationalization of costs as one of the competitive priorities leads to rationalize the cost of making products, improving activities and processes, increasing sales, achieving



profits and obtaining a marketing share in the work environment which enables the company to stay in the industrial environment

### **Fifth: Research Methodology:**

First: The deductive approach: Adopted in this approach to:

- 1 - Arabic and foreign books and sources.
- 2 - Messages and messages related to the subject of the research.
- 3 - Research and articles published in scientific journals and periodicals.
4. World Wide Web (Internet).

**Second: Inductive Methodology The research on this method was based on the following sources:**

- 1 - Books and official documents of the company sample research.
2. Documents, records, audit balances and company reports.
3. Personal interviews with company officials.

### **Sixth: The limits of research:**

- 1 - Spatial boundaries: **Electric Cables Plant / Ur State Company.**
2. Time Limits: The research period is set for fiscal year 2016.

Seventh: Society and Research Sample:

The research community is the public company Ur for electrical industries, either from the sample of the research was chosen electrification plant, or the reason for the selection of the community and the sample of the research is due to the following reasons:

- One of the major companies affiliated to the Ministry of Industry, which produces a basic product, which is the electrical cables and cables, which fill 70% of the need of the Ministry of Electricity, varying percentages to meet the need of other ministries, 90% of the need of Diyala for electrical industries, Household electrical appliances.
- ISO 9000 certification for the quality of its products for the year 2016.
- The factory is the largest factory of the company.

The factory supplies other factories with electrical wires, especially copper and aluminum household wires.

- The staff in the factory is one of the competent staff in the company.
- Cooperation of the company cadre of engineers, technicians and administrators in providing the required data and information.





### Previous studies:

#### 1 - The study of Shaibani (2006):

(ICMS) Role in Supporting Competitive Competitiveness within Companies and Redrawing the Performance and Profit Map)

The aim of this study is to clarify the nature of the integrated cost management system and its introduction. The most important results of the study were the need to build an integrated cost management system to lead, control and develop activities and processes in the right direction while performing them and give them a future picture, rather than building systems that measure the cost of practicing these activities after the end of the study. Operations.

#### 2- The study of Taweel and Ismail (2010):

Entitled "The Relationship between Types of Technical Creativity and the Dimensions of Competitive Advantage".

The study aimed to increase the knowledge of managers and employees in the companies about the concept and types of creative creativity, as well as the concept and dimensions of competitive advantage. The most important results on the departments of companies to increase interest in the concept and types of technical innovation as well as the concept and the exclusion of competitive advantage of this contribution to the survival and growth of the company Strong competition markets. And the need to increase the attention of the departments of the companies under consideration to the dimensions of competitive advantage and work to achieve them efficiently in order to achieve superiority over competitors in the competition markets.

#### 3- (study Thiab (2012):

(The technique of continuous improvement and its role in achieving competitive advantage)

The study aimed to highlight the shortcomings of production and weaknesses of production systems and traditional costs. The use of continuous improvement technology in achieving the competitive advantage of the company sample study. The most important results are that Iraqi industrial companies urgently need to focus their strategies towards providing products or services that meet the needs and expectations of customers in terms of Quality, price and on-time delivery with high flexibility in continuously diversifying and developing the sales mix. This is achieved when the value chain activities of industrial companies have the ability to anticipate, respond and react quickly to



develop demand in the Iraqi market. Threats of domestic and foreign competitors.

#### 4- Abu Zeid study (2014):

(Causal relationship between precedents and supply chain strategy and their impact on institutional performance).

The study aimed at measuring the level of concentration of factories operating in the food sector on the competitive priorities of quality, delivery, flexibility and cost, and the direct impact of competitive priorities in the supply chain strategy. The most important results of the study is the impact of competitive priorities in the strategy of the supply chain. During cost, delivery and quality.

#### 5- The study of watercress (2014):

Entitled "The Easy Manufacturing Strategy and its Role in Achieving the Competitive Advantage of the Organization"

The study aims at measuring the contribution of the soft industrialization strategy to achieving the competitive advantage of companies and focusing attention on the role of industrialization in the industry, because of the substantial advantages that contribute to enhancing the competitive position of companies. The most important results of the study is that competitive advantage is a complex concept that requires understanding of its essence and Which it offers in the field of competition and exploitation

Resources and competencies well, and the combination of them in an effective manner leads to the establishment of competitive advantages crucial. The government must support the provision of facilities to industrial companies to enable them to implement the strategy of industrialization in order to keep pace with developments in contemporary manufacturing systems and applications in order to compete in international companies.

#### 6 - study Mahmoud, Saleh and Ahmed (2015):

(The Role of Organizational Innovation in Achieving Competitive Priorities A Field Study in a Sample of Industrial Companies)

The study aimed at determining the role of organizational innovation in achieving the ability of competitive precedents and diagnosing research variables and their dimensions

The most important results of the study call on business companies in different sectors to the importance of the role played by organizational



innovation in achieving competitiveness to rise to the level reached by the leading companies and match their global products.

### **The First section: Literature - The main concepts of cost rationalization and competitive priorities:**

First: Cost rationalization:

Companies need to determine the cost of the product they provide to their customers and determine the cost. It helps in determining the cost of units sold. It also helps in determining the cost of unsold units. It also helps in making pricing and profitability decisions, evaluating the performance of the organization and planning future. One of the competitive priorities in the work environment.

1. Cost: Cost is defined in several definitions, including:

A -cost is defined as a resource to be sacrificed or offered in return for a specific objective. This cost includes the cost of direct materials, the cost of wages, etc., which are usually measured in monetary units and which must be paid for the acquisition of the goods or services. (Horngren et al, 2012: 27)

B - Cost may be defined as a sacrifice performed, which is usually measured by the resources spent on them to achieve special symptoms. If carefully considered, the term cost can have several meanings depending on the context and nature of the purpose used. Cost data is classified and recorded in a particular way for one purpose may not be suitable for another. (Hilton & platt, 2011: 72)

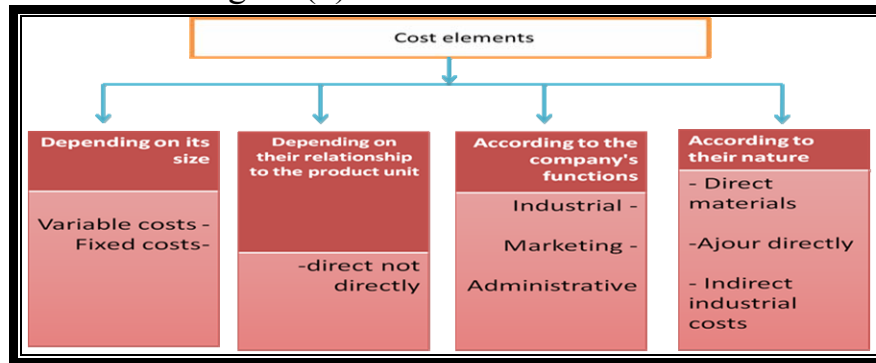
C-Cost is defined as an economic sacrifice for a portion of the resources of the enterprise, which is matched by a service or benefit necessary to achieve the objectives of the project and expressed in monetary units and can be foreseen and determined in advance. (Al-Azmah and Al-Adli, 1990: 106)

The two researchers believe that the cost is the sacrifice of the institution with its human and material resources, which they bear in exchange for the necessary benefit and service to achieve its goal and express this sacrifice in monetary units.

The process of categorizing the cost components is based on the nature or relationship of the functions of the company; the unit of the final product or the volume of production, as shown in forms (1) and (2), will be adopted during the research:

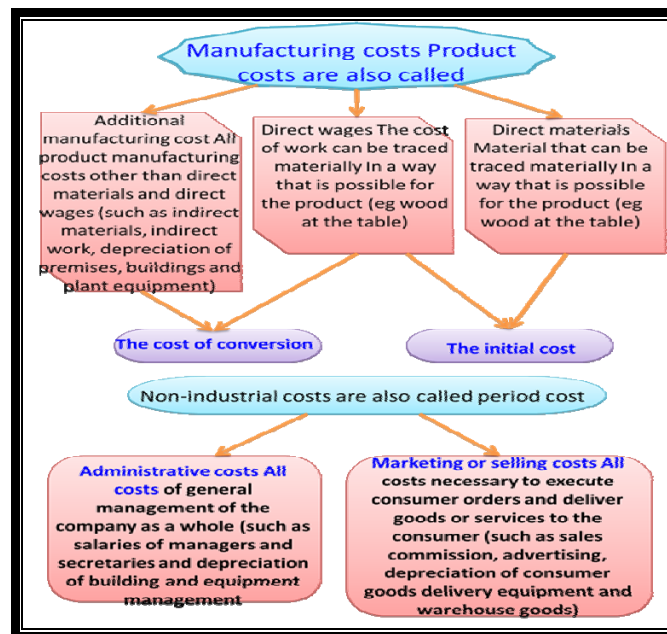


Figure (1) elements cost elements



Source: Al-Azma and Al-Adly, 1990, Fundamentals of Cost and Administrative Accounting, Al-Salsal, Kuwait, p. 63).

Figure (2) classification production costs



Source: Prepared by the two researchers.

## 2. Rationalization:

The word rationalization is linguistically meant to mean, or to be guided by, or guided by it. It may be guided by it. It means that it is given to him and approved by him (Arabic Language Complex, 359,2011), and rationalization means those who are injured and guided.

(Dictionary of the tongue of the Arabs ,203,1999,).

The term rationalization means control or control and is defined as the right decisions that are taken efficiently and effectively, which are in the interest of the company's objective, namely, rational and studied decisions according to historical data and future predictions according to changes in money and circumstances.





In the opinion of the two researchers that rationalization is the preservation and care or economy and the resources of the institution or doesn't spend the resources of the company without a corresponding benefit and not be considered a loss and waste, which causes losses to the company and thus does not achieve the desired goals that seek to achieve them gain profits and continuity and stay in the business world, which features unexpected changes. Hence, the rationalization of the cost of products is one of the competitive priorities that the company must have at least one of these competitive advantages in order to survive and continuity. The following paragraph will be addressed in detail to the competitive precedence (sometimes called competitive advantage) .

### **Second: Competitive Precedence**

The business environment is currently known for its strong competition and many competitors in light of globalization and the open market economy, which is characterized by the removal of customs restrictions and raising the protection of the government to its institutions and thus find the institution itself forced to face this competition and it is imperative to stay at least in this environment and that helps them to do so is On a precedence or competitive advantage that serves as a bumper to meet the challenges of competitors.

#### **1 - The emergence of competitive precedence:**

The reason for the emergence of competitive precedence was attributed to Chanberlin (1939). As well as to selznick (1959), which linked precedence with ability, and then developed precedence when he described (Schendel, Hofe) as the distinctive position developed by the company against competitors through the deployment of resources in a unique and distinctive way, and then came in (1984) M.Porter (1985), each of which formulated a conceptual formulation of competitive precedence. They considered competitive precedence as a strategic objective for the dependent variable, and their justification that outstanding performance which is linked to competitive precedence (Al-Zugbi, 2003:39).

#### **2 - Defining Competitive Precedence:**

Defining competitive precedence with several definitions, including:

a - Porter knows that it arises mainly from the value that the organization can reduce to customers, which can take several forms, including a lower price compared to the prices of competitors with equal benefits or to provide a single feature or advantage in the product attracts consumers

(porter, 1999: 8)



b - defined as (finding different dimensions of excellence owned by institutions /institution agree in the fields of production, marketing, human resources and finance). (Khudairy, 2004: 34)

c - defined as (means to find a single advantage superior to the institution to the rest of the competitors, that is, it makes the institution unique and distinct from the other competitors (Heizer & Render, 2008 : 36)

d - defined as "competitive advantage arises by increasing the value of the product to customers or lower the cost of delivery or display in the market in other words it is determined by increasing the value of products to customers and reduce the cost and thus reduction in the price of the product by (Garibaldi) (krajewski).

Competitive precedence was realized through the optimum utilization of resources and capabilities available to the institution as well as the capacity and competencies of the institution. (Garibaldi 2002: 17)

The two researchers know the competitive precedence which is the characteristics, qualities and characteristics possessed by the institution or product without others, which give or give the product some diversity and preference over the rest of the competitors, which is the case of uniqueness and excellence, which earns customers or consumers to buy the company's product such as low price (low cost) The best and other priorities that will be mentioned during the research.

### 3. Characteristics of competitive precedence:

In order for the organization to remain in the lead, it must realize that there is no competitive primacy forever. The institution that wants to continue with success is the institution capable of developing a continuous flow of competitive priorities and achieving strategic competition when it reaches above the average and remains at the forefront of competitors. In the foreground, they set in their expectations that everything is subject to change and that change is the only fixed thing and extends the survival of competitive precedence within a limited period of time and the space of this period increases when the competitive precedence depends on the efficiency and value of core and difficult tradition and Is expensive when imitated; therefore, the institution's ownership of competitive precedence is the secret of its success and superiority in the work environment. (Bakri and Suleiman, 18: 2004)

In order for competitive precedence to take precedence, it must have the following characteristics:

a - The property should be oriented towards the needs and desires of customers as the institution provides value to its customers not provided by other competitors.



- b - to have an important contribution to success.
  - c - Create harmony and cooperation between the unique resources of the institution and environmental opportunities as there are no two institutions possess the same resources, but the excellent strategy is to use these resources efficiently and effectively.
  - d- be constant and continuous and difficult to imitate;
  - e- It provides the basis for continuous improvement.
- And - it creates motivation and motivation for each economic institution.

(Evans & Dean, 2003: 19)

#### 4 - Priorities of competition / key success factors: -

Planning for competitive priorities is adopted or adopted within a single process or set of processes and is a capacity that should be available to create a market share or allow other internal processes to be successful. (Krajewski & Ritzaman, 2005: 62)

Competitive priorities are important dimensions that should be within the organization's aspiration to satisfy existing and potential customers. (Krajewski & Ritzaman, 2005: 62) focused on nine competitive priorities that are divided into four groups as follows:

- A-Cost: cost reduction processes.
  - B- Quality: quality improvement processes.
  - C-time: processes improve delivery speed, delivery time.
  - D - Flexibility: processes of diversification, diversification and flexibility.
- Each will be explained in detail as follows:

#### A- Cost:

The cost is the first competitive dimension to which many institutions are oriented towards maintaining and gaining market share, enhancing their position and enjoying the advantages of economies of scale, including compensating for the low profit rate resulting from the reduction of prices through a large volume of sales. (Maamouri, 1999: 13)

In other words, customers can not easily distinguish between products produced by other institutions and, as a result, customers tend to cost mainly as a function to determine the purchasing situation. (Chase, et.al., 2003: 24)

- There are several conditions that the organization should adopt if it wants to reduce the cost of the products, including: (Waeli, 2005: 13)
- reduce the stocks of all kinds to a minimum.



Improve the quality control work and exercise strict control to eliminate or reduce the spoiled products.

- Maintain and continually improve product design.
- Developing the skills of employees through participation in training courses.
- proper interior design of the factory to ensure efficient flow.

Based on the above, we conclude that achieving competitive precedence by reducing costs compared to the costs of competitors' products should not be at the expense of sacrificing production quality.

### B. Quality:

The quality represents the product's suitability to the needs and desires of the customer according to the quality that suits his wishes. Quality is the key to achieving competitive precedence and is the critical success factor for each organization. Quality has been of great importance to the customer and quality is the key to achieving profits. "Improvements in quality help organizations increase sales and reduce costs, Through which quality is a measure of the extent to meet the needs of customers and their stated and implicit requirements and the importance of quality stems from the following: (Naama, 2006:14)

- reputation of the institution: the institution can rely on its reputation in quality whether good or bad.
- Global Standards: In order to compete globally, the enterprise should achieve quality products and global design as well as appropriate prices.
- Legal liability: The institution with defects in its products can bear legal costs and large losses in addition to bad reputation.
- raise the morale of workers: which lead to increased production and productivity.
- Improve performance by reducing the level of inventory and loss of various costs of the production process.
- Protect the enterprise from competitors who offer their products at low prices and low margin. (Heizer and Render, 2001: 172) (Evans, 1997: 45)

### C. Time (delivery time):

Increasing the need for effective delivery as a form of priority for enterprises and an indispensable competitive dimension in light of the increasing importance of time to the customer, especially with the institutions that(make-to-order), including service institutions. (Maamouri, 1999: 21).





The implications of this dimension are linked to three trends: rapid delivery, which refers to the time it takes between receiving the customer's request and delivery, delivery on time, and the speed of development, which indicates the speed of submission of the product and the time between the emergence of the design idea and the final production (Krajewski, 1999: 34).

The firm's ability to deliver fast and fast delivery enables it to deliver its products as quickly as possible, as the products must be delivered to the customer as soon as possible and on the agreed date of delivery (Chase et al 2003: 34).

The time and delivery is determined according to the quick response of the customer request in the modern manufacturing environment with the time that adds value and knows the time of the manufacturing cycle and the delivery to the customer. The time of receipt of the order from the customer and the time of manufacturing operations and the time of delivery of the final product to the customer, after excluding time that does not add value such as Waiting time, inspection time, storage time; and to reduce cycle time by improving the efficiency of the manufacturing cycle. (Garrison & Noreen, 2008: 447)

#### D. Flexibility:

It is the fourth dimension of competitive dimensions or priorities. Flexibility is one of the fundamental success factors for enterprises.

Flexibility consists of a strategic view of two dimensions:

The ability of the organization to provide a wide range of products to its customers in order to meet the specific needs and requirements of each customer.

The other dimension of flexibility is that the organization is rapidly diversified so that it can change its products to produce a new line of products, and this dimension has become more important so that the product life cycle becomes shorter and shorter. (Chase, et, al., 2003: 35)

(Russell & Taylor) explained that flexibility has become a competitive dimension and means the ability to produce new products in large quantities, as well as the ability to rapidly change existing products and respond quickly to customer desires.

(Russell & Taylor, 1998: 32)

That is, the concept of flexibility is the ability of processes to change from one product to another or from one customer to another at the lowest cost or at the least time.



There are three priorities of:

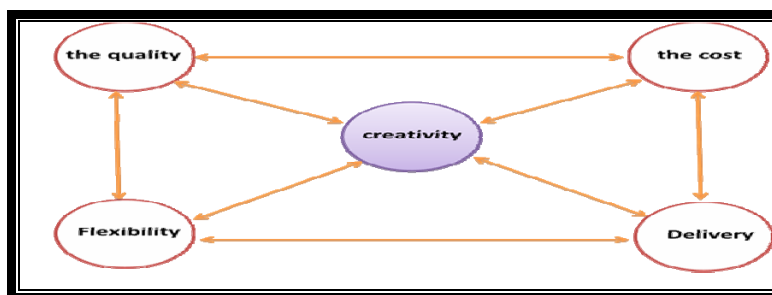
- Customization: is the ability to adapt and respond to the specific needs and desires of each customer and change the product designs, where the products are offered as desired by the customer. As the organization is well aware of the dire consequences if there is no immediate and rapid response to the requirements, expectations and needs of the customer.
- Flexibility Size: is the ability of the enterprise to accelerate or slow the rate of production quickly to address the large variables in demand to remain economically and profitably working, especially when the reduction of the rate of production suddenly.
- Diversification: The ability of an organization to deliver a wide range of products efficiently. diversification differs from customization because it is not directed towards a particular customer. Through this priority, the organization can have the ability to focus on the needs of its customers by focusing on pre-defined products and services.

(Davis, et al., 2003: 35) (krajewski & Ritzaman, 2005: 65)

There are those who add creativity as a competitive advantage to flexibility and there are those who consider it a fifth dimension.

Innovation can be achieved through continuous improvement and cost reduction and can be achieved by satisfying the customers' wishes when meeting the requirements for rapid delivery and timely product specification. Figure 3 illustrates the relationship between competition dimensions

Figure (3) Relationship between competitive dimensions



Source: - (Al-Raziq, 2004:203).

And we note that creativity exists in every corner of the process of manufacturing the product and that the method of providing the product or service well and this is what we want to buy it without others or mean a store without another or a restaurant without another creativity is an implicit process for each dimension of the competitive precedents (Chase, et Al., 2003: 35).



## 5. Relationship between the primacy of competition (basic success factors):

The superiority in the primacy of the primacy of competition depends on the performance of the distinctive priorities of the other in the sense that there is no superiority in a certain precedence at the expense of sacrificing other precedence because of the existence of mutual relations between them. There are two points of view on this subject. The American view that there is a relationship between the conflicting choices of priorities. Which requires different procedures between the cost and quality precedents, or between the two precedents of time and flexibility. In the field of the relationship between cost and quality, the corporation faces two types of first priorities: ensuring a high quality product and the second production of these products at the lowest possible cost.

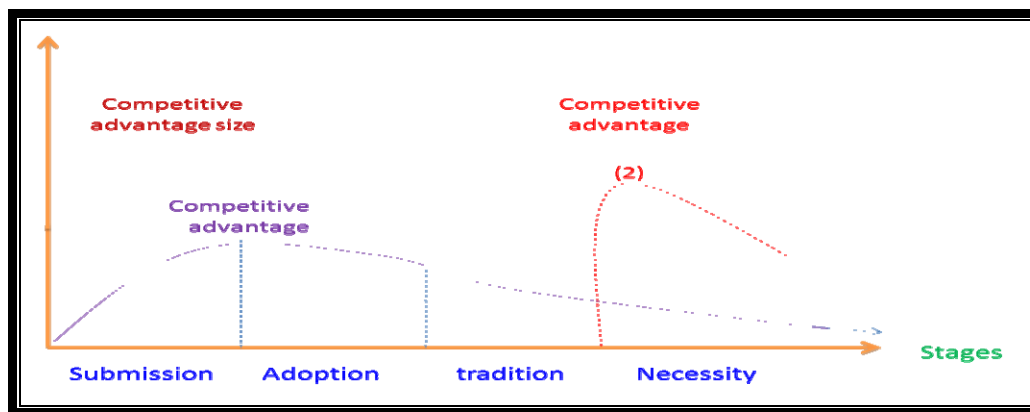
## 6. Competitive priority determinants:

The competitive precedence of the institution is determined from two dimensions as follows:

First: The competitive priority:

Competitive precedence takes place in the same life cycle of products, represented by Figure (3) below:

Figure (3) Lifecycle of Competitive Precedence



Source: (Nabil Morsi Khalil, Competitive Precedence in the Field of Business, Alexandria Book Center, 1998, p. 86, Egypt).

The competitive precedence shows that a competitive life cycle is similar to the life cycle of the product as it grows to maturity to stabilize its growth somewhat and then enters a phase of decline where the institution must achieve new competitive precedence to maintain its position in the market.



## Second: Scope of competition:

The scope of competition consists of four dimensions:

- Market segment: This sector reflects the diversity of the organization's outputs as well as the variety of customers for which products are offered; the choice is made between focusing on a particular sector of the market or covering the entire market.
- Degree of frontal integration: refers to the degree of performance of the institution for its activities, whether internal or external, higher frontal integration compared to the competitor may achieve the advantages of low cost or discrimination.
- Geographical dimension: represents the area of the geographic region or countries in which the organization competes. This dimension allows for achieving competitive precedence by providing one quality of products across many geographical regions, and highlights the importance of this priority for institutions operating on a global scale, Offering its products all over the world.
- activity segment: expresses the degree of interdependence between the industries in which the organization is made. The existence of this interconnection between different activities through several industries creates opportunities and challenges to achieve many competitive priorities. The same facilities, technology or customers may be used through these The various industries to which the institution belongs. (Khudairi, 2004: 88).

The third section - the practical side: The definition of the sample of the research and the production of electricity and the cost of production to diagnose problems and provide treatments and propose solutions and alternatives:

The company faces today many variables and rapid developments that require research and explore the best ways and approaches to address those variables by adopting ideas , concepts and modern principles aimed at reaching one of the competitive priorities, including rationalization of costs, creating the costs inflated by the waste of material and human resources.

The study will show the high costs of production suffered by the plant, which cause the company losses and decline in sales volume, as well as the section will explain the causes of high costs and put forward the necessary proposals to address the problems experienced by the plant and the company,

### 1- Company Profile: -

A-Ur Public Company was established after the merger of:





- General Establishment for the manufacture of cables and cables was established in 1974.

- The General Corporation for Aluminum Profiles Industry was established in 1975.

Was merged into a single company (Ur Public Company) under the dissolved Revolution Command Council Resolution 222 on 6/3/1988. Under the Companies Law No. (22) of 1997, it was transferred to Or Company for Engineering Industries. Electromechanical under the Ministry of Industry and Minerals / Administrative Department and Human Materials No. 9451 on 20/2/2012 and according to the law of the Ministry of Industry and Minerals No. 38 of 2011. Located in the province of The Qar / Al-Nasiriyah city and registered with the Registrar of Companies and according to the Ministry of Commerce No. 31 dated 15/12/1997 and governed by the Public Companies Law.

#### B. Corporate objectives and functions:

First, Or Company is a self-financed economic production unit wholly owned by the State and enjoys moral, financial and administrative independence; it operates on an economic basis and is linked to the Ministry of Industry and Minerals and has its head office in Dhi Qar Governorate

Second: The company's capital shall be JD (554.506,000).

Third: The company seeks to contribute in supporting the national economy and the development of industrial production by:

- Production of cables, electrical wires, telephone of various types, aluminum casting and production of various plates and sections.

- Achieving the highest level of growth in work and production and adopting the principle of economic calculation and efficiency of investment of public funds and effectiveness in achieving the objectives of the state.

- Raising the performance levels of the national economy to achieve the objectives of development plans.

C- To achieve its objectives, the company undertakes the following activities:

- Production of cables, electric wires of all kinds, wire winding insulated with enamels, cables and telephone wires of all kinds

Aluminum alloy of flexible alloy types of sheets, sections, pipes, wires and various forms for their purposes or for the account of others according to the approved specifications.

- Developing and expanding existing factories and production lines by establishing projects and complementary and new lines.



- Purchase and import of production supplies and any materials that fall within its production or need.

- Marketing its production inside and outside Iraq.

D - divisions and divisions of the company:

First: The Department of Receiving Factories: Managed by a specialized employee who holds an initial university degree in engineering and takes advantage of the available capacities of factories, machinery, equipment and equipment and the continuity of its work in supervising the production plants and supervising the implementation of regular maintenance programs and preparing them to work in harmony with the production service and participation in determining the owners Required to operate the laboratory and diagnosis of the ruling professions and their availability and associated with the following laboratories:

Electrical Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory, Wire Mesh Factory.

### **Third: Service Centers:**

A-Production Services Center for the Aluminum and Aluminum Production Division which consists of 21 service centers.

B - marketing and administrative service centers.

2. Process of calculating production costs, production services, marketing costs and administrative costs:

For the purpose of determining and measuring the cost of manufacture of the products that shown (Table /1) for eight products. The researchers will determine the production costs and their relation to the production volume to variable costs and fixed costs as well as their nature to direct materials and wages directly and indirect industrial costs as well as by the company's functions to industrial, marketing and administrative With a view to reaching a precise definition

Cost of products. Quantitative data were collected, whether working hours or quantities in weights (kg) of the production section for the purpose of determining the cost factor. Therefore, the cost complexes were determined from the financial section of the company only in respect of the manufacturer of the electrics in order to determine the loading rates for each cost component. And the total cost of manufacturing, marketing costs and administrative costs. The purpose of the project is to compare them with the price of selling the products in the local markets and to the ministries and other government companies. The following tables will show the differences between the cost of the product and the selling price.



Table (1) Products for which production costs have been measured

Measuring the cable	3 x 150/70 mm 2 plain	240 x 4 mm 2 armed	10 x 4 mm 2 armed	10 x 4 mm 2 Normal	95 x 1 mm 2 Normal	50 x 1 mm 2 Normal	95 AAC	120/20 ACSR
Product Type	Multi-conductor copper conductor	Copper quadrilateral	Copper quadrilateral	Copper quadrilateral	Single copper clad (RM) Scheduled	Single copper clad (RM) Scheduled	Aluminum Alloy Wire	Aluminum alloy steel wire
Production quantity / Km for 2016	<u>2.529</u>	<u>1.162</u>	<u>4.338</u>	<u>0.632</u>	<u>30.75</u>	<u>18.12</u>	<u>157.9</u>	<u>661.974</u>

Table (2) has been prepared according to the classification of direct and indirect costs as well as their classification to indirect industrial, marketing and administrative according to the theory of total costs.

Table (2) Calculation of the cost of production of the production plant / electrical capacitors (cost center 5) (amounts in thousands dinars)

Direct Materials:	
Raw materials (168.551) tons (407.583) ton H / 3211	<sup>1</sup> 1532358
Help material A / 3212	40400
Direct wages:	
Ac / 3111's homepage!	2209870
A / 3118 equivalents	700
Indirect Industrial:	
Backup Tools / 323	29850
Packing and packaging for cables (wood, iron and bolts) A / 3241	71955
Supplies & Stationery Factory A / 32512	3460
Electricity A / 3272	76155
Oils A / 3223	3315
Transfer of affiliated factory H / 3341	11500
Factory deliveries H / 33432	2840
depreciations A / 37	745295
Other A / 39	6120
Total Productivity (Center 5)	5815380
Total Productive Services (Cost Center 6)( Table 3 )	2052065
Total Marketing Services (Cost Center 7)	183530
Total administrative services (cost center 8)	129910
Total costs.....	9343885

Source: Prepared by the Two researchers.

Table (3) Calculation of the total costs of production services for the movable factories section (cost center 6) (thousand dinars)

Cost element	the amount
Indirect Materials H / 32	_____
Indirect wages h / 31	1742745
Indirect costs	
H / 33 For production service centers	235375
H / 37 Indentations for production service centers	<u>73945</u>
Total amount.....	<u>2052065</u>

Source: Prepared by the researchers.

<sup>1</sup>The amount includes the raw materials of both electrical cables and aerodynamic wires ... The value of the primary materials that belong to the receiver is as follows:

Primary materials / copper = 1160005 thousand dinars.

Primary materials / Aluminum = 372353 thousand dinars.



Table (4) Manpower and the amount of wages in the company for the year 2016  
(amounts in thousands dinars)

The factory name	the Number	Wages
Cable electric	212	2161552
support	1756 <sup>2</sup>	17904786
=====	=====	=====

Source: Preparation of the two researchers.

Table (5) represents the all company's total revenue.

Table (5) Revenues for the year ended 31/12/2016(thousand dinars)

account number	Account name	Details 2016	
		Actual	Plan
	Revenue from commodity production / net sales	1434993	69660000
	Sale of waste	8578	-
	Variance difference (between the first and the last period of total production)	7245263	-
41	Total	8723071	69660000
42	Revenue of business activity	-	-
43	Revenue of service activity	45742	50000
44	Operating income for others	-	125000
45	Internally manufactured assets	680995	2475000
46	Benefits and rents of land	-	-
47	Subsidies	-	-
48	Transforming income	30869528	34595085
49	Other Revenue	937468	200000
TOTAL		41,256,270 <sup>3</sup>	107,105,085

Source: Preparation of the two researchers.

Table (6) Income statement of the power plant for the period ended 31/12/2016

The statement	Amount (thousand dinars)
Revenue	7507970
Revenue from commodity activity	19973681
+ Other income	
Total revenue .....	=====
Cost of goods sold:	27481651
Cost of direct materials	
+ The cost of direct wages	4308480
+ Indirect industrial costs	8733760
	10541815
	=====
Manufacturing costs	23584055
+ Change in the stocks of the first and last period under operation	170176
	=====
Cost of manufactured goods	23754231
+ Difference in stock change in the first and last period of total production	6283158
	=====
Cost of goods sold.....	30037389
	(2555738)
Total profit (loss).....	(488530)
Operational costs are raised:	(3865810)

<sup>2</sup>- The number of employees in the supporting bodies provide the work for all the factories of the company, including the plant of electrification.

<sup>3</sup>- The amount represents the total revenues of the company, the share of the Electrical Power Plant is 27,481,651 (thousand dinars).





Marketing costs	
Administrative costs	
Operating income (loss) .....	(6910078)

Source: Preparation of the two researchers.

### 3 - Determination of production costs in relation to the size of production and by nature:

#### First: Cost Calculation:

1 - Calculating the rate of loading the cost of wages and the cost of depreciations:

A. Calculation of the rate of loading Cost of labors:

Cost of labors / production department = [700 + 2209870] (Table 2)

Cost of labors / service department +1742745 (Table 3)  
3953315 Thousand dinars

Loading rate = Cost pool ÷ Cost drive = 3953315 ÷ 3115 (supplement / 1) = 1280 thousand dinars/ hour

B - Calculating the rate of loading the cost of depreciations:

Table (2) = 745295 thousand dinars of the production department

Table (3) = 73945 thousand dinars and the department of production services

Total 819240 thousand dinars

Load rate = Cost pool ÷ Cost drive =  
= 819240 ÷ 3115 hours of operation (supplement / 1) = 263  
thousand dinars / hour

Table (7) Calculation of fixed costs (direct labors and costs depreciations)

S	the product	① loading rate Of labors Thousand dinars	② loading rate for deprecations Thousand dinars	③ Product time/ (supplement / 1) hour	④ ① × ③ = ④ Cost of labors Thousand dinars	⑤ ② × ③ = ⑤ Cost of deprecations Thousand dinars
1	20\120ACSR	1280	263	2.433	3123	647
2	95AAC mm 2	1280	263	2.17	2835	585
3	1 x 50 mm 2 Normal	1280	263	4.19	5360	1110
4	1 x 95 mm 2 Normal	1280	263	4.69	6870	1420
5	4 x 10 mm 2 normal	1280	263	9.79	12525	2595
6	4 x 10 mm 2 armed	1280	263	15.2	19446	4029
7	4 x 240 mm 2 armed	1280	263	54.0	69087	14318
8	3 x 70 \ 150 mm 2 normal	1280	263	31.0	39661	8219

Source: Prepared by the two researchers.

#### Second: Cost Calculation:

2 - Calculation of loading rate of raw material for aluminum and copper:

Cost of raw materials / aluminum = 372353 thousand dinars (Table 2).

Cost of raw materials / copper = 1160005 thousand dinars (Table 2).

Total = 1532358 thousand dinars

A) Loading rate for raw materials / aluminum = Cost pool ÷ Cost drive =  
= 372353 ÷ 110066 ton weight (supplement / 1) = 3.383 thousand dinars / ton

B) Loading rate for raw materials / copper = Cost pool ÷ Cost drive =  
= 1160005 ÷ 110066 ton weight (supplement / 1) = 10.541 thousand dinars / ton

3 - Calculate the loading rate of packaging cost:



Loading rate = Cost pool ÷ Cost drive =

= 71955 ÷ 561297 kg (supplement / 1) = 0.128194164 thousand dinars / kg

Table (8) Calculation of Raw Materials and Packaging costs (thousand dinars)

S	The Product	① Rate of raw materials / copper	② Download rate packaging Thousand dinars	③ Technological quantity Kg (supplement / 1)	④ Total weight kg (supplement / 1)	⑤ ① × ③ = ⑤ Cost of raw materials	⑥ ② × ④ = ⑥ Cost of packaging	Total costs of raw materials and packaging
1	20\120ACSR	3.383	0.128	342	496.4	1157	63	1220
2	95AAC mm 2	3.383	0.128	261.3	261.3	884	32	916
3	1 x 50 mm 2 Normal	10.54	0.128	428	653.6	4570	80	4590
4	1 x 95 mm 2 Normal	10.54	0.128	1630	1160	17182	148	17330
5	4 x 10 mm 2 normal	10.54	0.128	371.6	878.9	3914	111	4025
6	4 x 10 mm 2 armed	10.54	0.128	371.6	1107.7	3914	141	4025
7	4 x 240 mm 2 armed	10.54	0.128	9014	13569	94975	1730	96705
8	3 x 70\150 mm 2 normal	10.54	0.128	4738.4	7644.1	49940	980	50920

Source: Prepared by the two researchers.

4 - Calculate the loading rate of the spare tools

Loading rate = Cost pool ÷ Cost drive =

Loading rate = 29850 ÷ 3115 hours of operation (supplement / 1) = 9.6 thousand dinars / hour The need for spare tools.

Table (9) Calculation of the costs of the Spare Tools

S	the product	Loading rate Thousand dinars	Product time (supplement / 1)	Cost of spare tools (thousand dinars)
1	20\120ACSR	9.6	2.433	23
2	95AAC mm 2	9.6	2.17	21
3	1 x 50 mm 2 Normal	9.6	4.19	40
4	1 x 95 mm 2 Normal	9.6	4.69	50
5	4 x 10 mm 2 normal	9.6	9.79	95
6	4 x 10 mm 2 armed	9.6	15.2	140
7	4 x 240 mm 2 armed	9.6	54	520
8	3 x 70 \ 150 mm 2 normal	9.6	31	300

Source: Prepared by the two researchers.

5- Calculating the rate of loading other industrial costs:

Loading rate = Cost pool ÷ Cost drive =

= 338773 ÷ 3115 hours of operation (supplement / 1) = 103.8 thousand dinars / hour.

F.O.H=Cost of supplies & stationery + Cost of electricity + Cost of oil + Cost of transfer of employs + Cost of deposits + Other costs + Indirect industrial costs of production services =

F.O.H (Table 2) & (Table 3)= [3460 + 76155 + 3315 + 11500 + 2840 + 6128 + 235375 = 338773 thousand dinars.

Table (10) Calculation of other industrial costs

S	the product	Loading rate Thousand dinars	Product time (supplement / 1)	Other industrial costs Thousand dinars
1	20\120ACSR	103.855	2.433	267
2	95AAC mm 2	103.855	2.17	243
3	1 x 50 mm 2 Normal	103.855	4.19	460
4	1 x 95 mm 2 Normal	103.855	4.69	590
5	4 x 10 mm 2 normal	103.855	9.79	1070
6	4 x 10 mm 2 armed	103.855	15.2	1665
7	4 x 240 mm 2 armed	103.855	54.0	3770
8	3 x 70 \ 150 mm 2 normal	103.855	31.0	3395

Source: Prepared by the two researchers.

6 - Calculation of the rate of loading the costs of marketing services:

Loading rate = Cost pool ÷ Cost drive =



= 183530 (Table 2) ÷ 3115 hours of operation (supplement/1)=59thousand dinars / hour

Table (11) Calculation of Marketing Costs

S	the product	Download rate Thousand dinars	Product time ( hour )	Marketing costs Thousand dinars
1	20\120ACSR	59.48	2.433	170
2	95AAC mm 2	59.48	2.17	155
3	1 x 50 mm 2 Normal	59.48	4.19	291
4	1 x 95 mm 2 Normal	59.48	4.69	374
5	4 × 10 mm 2 normal	59.48	9.79	682
6	4 x 10 mm 2 armed	59.48	15.2	1060
7	4 x 240 mm 2 armed	59.48	.054	3770
8	3 x 70 \ 150 mm 2 normal	59.48	31.0	2165

Source: Prepared by the two researchers.

#### 7. Calculation of Administrative Services Cost Load Rate:

Loading rate = Cost pool ÷ Cost drive =

= 1292910 ÷ 3115 hours of operation (supplement / 1) = 415.9 thousand dinars / hour

Table (12) Calculation of administrative costs

S	the product	Download rate Thousand dinars	Product time ( hour )	Cost of administrative services Thousand dinars
1	20\120ACSR	415.059	2.433	1225
2	95AAC mm 2	415.059	2.17	1115
3	1 x 50 mm 2 Normal	415.059	4.19	2109
4	1 x 95 mm 2 Normal	415.059	4.69	2701
5	4 × 10 mm 2 normal	415.059	9.79	4928
6	4 x 10 mm 2 armed	415.059	15.2	7650
7	4 x 240 mm 2 armed	415.059	54.0	27180
8	3 x 70 \ 150 mm 2 normal	415.059	31.0	15605

Source: Prepared by the two researchers.

#### 4 - Identify and measure the cost of manufacture, marketing and management:

Table (13) and (14) below shows the total production, marketing and administrative costs which were calculated according to the above tables for determining production costs.

Table (13) Manufacturing Cost (thousands of Dinars)

Variable costs of production centers and production services			Fixed costs for production centers and production services			measuring unit	S	Manufacturing cost
Other industrial costs	Spare tools	Raw materials& packaging	Other	depreciations	Direct labor			
267	23	1220	-	647	3123	kilometer	1	5280
243	21	916	-	585	2835	kilometer	2	4600
460	40	4590	-	1110	5360	kilometer	3	11560
590	50	17330	-	1420	6870	kilometer	4	26260
1070	95	4025	-	2595	12525	kilometer	5	30310
1665	140	4055	-	4029	19446	kilometer	6	29335
3770	520	96705	-	14318	69087	kilometer	7	184400
3395	300	09205	-	8219	39661	kilometer	8	102495

Source: Preparation of the researchers.



Table (14) Manufacturing costs, marketing costs and Administrative costs 2016

S	the product	Measuring unit	Manufacturing costs thousand dinars	Marketing costs thousand dinars	Administrative costs thousand dinars	Production costs thousand dinars
1	20\120ACSR	kilometer	5280	170	1225	6675
2	95AAC mm 2	kilometer	4600	155	1115	5870
3	1 x 50 mm 2 Normal	kilometer	11560	291	2109	13960
4	1 x 95 mm 2 Normal	kilometer	26260	374	2701	29335
5	4 x 10 mm 2 normal	kilometer	20310	682	4928	25920
6	4 x 10 mm 2 armed	kilometer	29335	1060	7650	38045
7	4 x 240 mm 2 armed	kilometer	184400	3770	27180	215350
8	3 x 70 \ 150 mm 2 normal	kilometer	102495	2165	15605	120265

Source: Preparation of the two researchers.

### 5 - Differences between production costs and selling price:

Table (15) below shows the cost differentials incurred by the company and the prices at which the products are sold and the company incurs losses resulting from the sale of products at less than its cost. Despite this reduction in the prices of the company's products, there are similar products in the local market. The value of the product purchased by him, and because the cost of the product (manufacturing, marketing and management) is high compared to the similar product in the market and imported from different global origins (Thailand, Turkey, China, Iran, Malaysia, etc.).

As long as the customer is rational in his behavior at the time of purchase, he seeks benefits that go beyond the sacrifices he incurs in paying the value of the product, he is well aware that the product similar to the product of the company achieves its benefit either through its quality or price, thus it will achieve net benefit as long as the benefits are greater than sacrifices. The value of the product did not come from a vacuum has been found from several factors, including:

A- the quality of the similar product of its efficiency in the performance of the work (if the customer believes);

B- The appropriate price which the customer can pay.

C - Sometimes the customer does not recognize the length of the product when used as long as the price is appropriate for him.

D - as well as swap in the light of the market of full competition, and here the researchers indicate that the imported products are not subject to tariffs and tariffs as a tariff and not conform to the approved specifications. As well as the rationality and realization of dealers in this market, whether they are sellers or buyers has determined the value of the product, and here the emergence of swap conditions and competition, which affected and affected by the value of the product.





## 6- Problems experienced by the company / factory capacitors:

Table (15) shows the significant difference between the production costs and the selling price of a sample of products. This difference causes great losses for the company. This situation is one of the main reasons for weak performance of government companies.

Here, it is difficult for the government sector to compete with the private sector to sell its products for the following reasons that are characteristic of the private sector:

- a- The reluctance of ministries and companies affiliated with the government sector to buy the company's products.
- b- The private sector offers lower prices than the prices of the products of the company for the reason mentioned above and the variety of products, which are of different global origin.
- c- The absence of administrative routine in the private sector and applied in the state institutions in general and especially the products manufactured by the company, including a purchase transaction.
- d- Lack of proximity to marketing outlets from customers or markets compared to the private sector, which takes places more popular in the local markets.
- e- Delivery to the customer by means of simple means of transport, which is missing the government sector.
- f- The length of time it takes for the customer to purchase from the public sector (from the company by virtue of its distance from the customer's reach) more than the period of time when buying from the private sector according to the proximity of the shops from the reach of the customer.

Table (15) Calculation of the differences between the cost of production and the sale price (thousand dinars)

S	the product	Quantity Manufactured kilometer	Total production costs Thousand dinars	selling price	Difference between production cost and selling price (loss)
1	20\120ACSR	661.974	6675	2000	(4675)
2	95AAC mm 2	157.9	5870	1400	(4470)
3	1 x 50 mm 2 Normal	18.12	13960	6500	(7460)
4	1 x 95 mm 2 Normal	30.75	29335	12000	(17335)
5	4 × 10 mm 2 normal	0.632	25920	8000	(17920)
6	4 x 10 mm 2 armed	4.338	38045	8800	(29245)
7	4 x 240 mm 2 armed	1.162	215350	120 000	(95350)
8	3 x 70 \ 150 mm 2 normal	2.529	120265	65000	(55265)

Source: Preparation of the two researchers.



## 7. Finding solutions and developing treatment mechanisms:

### First: Rationalization of costs (reduction of loading rates):

A- reduction in direct labors by reducing the number of employees in the company, which is estimated at 3189 workers. The share of the electrification section is **212** workers (Table 4), except for the supports, according to the available energy, which is estimated at **10.7%** for electrical wires and **(7.3%)** Electrical (Table / 18), respectively. The reduction in the number of workers reduces the rate of wage load of (1,280,000) dinars per hour.

B - Reduce the rate of loading the cost of the endowments, through the disposal of some buildings of the Department of electrification through the use of them and the knowledge of the factory and the company.

C. Reduce the rate of loading of spare parts costs due to the aging of machines, equipment and equipment, where the manufacturer only receives the amount of 9600 dinars per hour due to the need for backup tools.

D. Reducing the rate of loading of other industrial costs, where the factory bears 103800 dinars per hour.

Thus for the rest of the marketing and administrative loading rates, which cause large production costs.

### Second: Proposals and Alternative Solutions:

Here, the two researchers suggest, to help raise the value of products after discussion with the marketing department, about the opinions and mechanisms.

The marketing and economic policy developed by the state is an open market policy where the principle of marketing is the principle of competition. In order to overcome these obstacles, it is possible to provide opinions and mechanisms for the marketing work of the company's products, through which it may obtain a market share of the company's products in the local market:

A: The rules of procedure for marketing:

Participation of marketing personnel in the communication processes with the private and public sectors for the purpose of displaying products, including at least one of them:

- Marketing Manager and his agent .- Sales Officer Receivables. - Quality Supervisor. - Director of Planning.

The researchers suggest that the managers above: -

- Communicating with government ministries and industrial and service companies in all governorates, as well as the local market for each



governorate, as well as attending the exhibitions, whether the participation of the company or non-participation. This is very important in trying to obtain a marketing share according to what they propose in their different visions, One person.

- The need for the general manager of the company to participate with the above officials in all their movements and contacts and in accordance with the instructions and work controls in force in the company to complete the marketing image.

B: The proposals submitted by the researchers to consult the opinions of the company's officials in the marketing department and the mechanism of marketing the products of the products are as follows:

**First-** activate the access of agents approved by the conditions of the ministry by contacting them in their workplaces, according to his province:

**I-** Models of small products and folders related to the products and a list of prices for products. Detailed explanations and exchanges of views are provided to attract more than one agent (customer).

**II-** In the case of the presence of agents (customers) to buy by installment or there is approval of the Board of Directors and then the Ministry to develop a guarantee agreed by the company, and the agent is enforceable and maintains the rights of the company.

**III-** There will be a financial reward at the end of each year or two for agents or customers whose products are marketed at a value of up to [200 million dinars] in a modern Pickup car granted by the company, as is the case in global product marketing operations.

**Secondly-** Promotion of advertisements in shopping centers and malls.

**Thirdly-** the planning department should issue or order work for products that enjoy a movement and a high demand for sales whether for the public sector or the private sector and put them in warehouses without resorting to the production process on demand. By following this mechanism, it is the immediate processing process that attracts the shopper and customers in Public and private sectors.

**Fourthly-** activating the role of manufacturing for others and announcing it is an immediate announcement in the media and others, which attracts customers who request that there be exclusive products for them.

**Fifthly-** Attracting participants, even if they are local, for the purpose of mutual benefit in terms of procurement of raw materials and conditional marketing, and in accordance with an economical scientific mechanism that is easy to apply (follow up with the commercial department in the company to conduct continuous meetings with local government / provincial councils and governors) to: Supreme audit, Integrity, National



Security, which requires the taking of necessary measures against anyone violating the laws of the protection of the local product and its application for the purpose of purchasing local products of high quality. These steps are of great importance that may result in obtaining a marketing position.

**Sixthly-** formatting trucks that is cargoes (2 tons) rather than (5 tons) because the latter prevent access to the provinces as in the case of large trucks; while the trucks with (2 tons) can enter easily even in the local markets where active markets can be selected In Baghdad or even provinces for direct sale, as well as agreement with the owners of shops to deliver products to them the next day in case of a sale of the product.

**Seventhly-** In the case of production of work for the production of a particular product in favor of a particular party; it should be emphasized that the payment in advance or half of the amount and after the completion of manufacturing should pay the amount within three days and raise the quantity sold.

**Eighthly-** Contacting the headquarters of the telecommunications companies (Zain and Asiaccell) and agreeing to send text messages offering promotion of the company's products and figures of business owners or companies known to them, officials and others.

### **Third: The Pursuit of Development, Improvement and Continuity:**

The pursuit of development and continuity simply means that there is no end to the development of processes and improvement of performance to reduce losses and then remove them permanently. The basis for development is to increase value and eliminate loss of production. This foundation leads to inspiring the workers for progress, development and a sense of responsibility. In ambitious and sophisticated institutions, improvement is the essence of evolution, and this is done by striving for clarity of goals Strategy and transparency of work and performance and zero errors and defects that occur in both processes or in the quality of the product and try to remove them as much as possible.

Disadvantages are one of the ten losses that cause not only unnecessary costs; but also distrust of products offered to the customer. In addition, transparency requires a clear relationship and communication between those who have a share and a share in the processing chain in order to communicate the valuable information used in proposing effective strategic plans; Be able to provide positive feedback to employees who will improve their performance to the expectations and wishes of the customer.

Table (16) and (17) show the design capacities and capacities available, planned and actual of the power plant at the level of production capacities, which shows the large difference between them due to poor performance as well as the level of sales planned and actual, which is





hoped to reach these energies and the quantities of planning specified in Table (16).

Table (16) Production capacity activity for 2016

the details	Quantity of energies for the period from 1/1/2016 to 31/12/2016 (Tons)			④ The planned price per ton Thousand dinars	The planned capacity for the period from 1/1/2016 to 31/12/2016 (Thousand dinars)			⑤ Actual current price per ton Thousand dinars	Achieved for the period from 1/1/2016 until 31 / 12/2016			Percentage of production Actual to planning % ⑥÷③
	① Design	② Available	③ Planned		③×④ Planned	②×④ Available	①×④ Design		⑥ The amount of production achieved Ton	Verified value		
										④×⑥ At planned prices Thousand dinars	⑤×⑥ Prices Effective Thousand dinars	
the product												
Hanging aerial wires	7300	3810	3810	6000	43800	22860	22860	5189	407.5	2445000	2114517	10.7
Electrical cable	8521	2300	2000	12500	106512	28750	25000	12736	168.5	2106250	2146016	7.3

Source: Preparation of the two researchers.

Table (17) Sales Activity for 2016

The product	measuring unit	Current period from 1/1/2016 to 31/12/2016						Actual sales amount to planned The ratio % ⑤ ÷ ②
		Planned sales			Actual sales			
		① unit price (Thousand dinars)	② For quantity Ton	③ ① × ② = ③ the value (Thousand dinars)	④ unit price (Thousand dinars)	⑤ Quantity Ton	⑥ ④ × ⑤ = ⑥ Value (thousand dinars)	
Hanging aerial wires	Ton	6000	3810	22860000	5346	130.415	697198	3.4
Electrical cables	Ton	12500	2000	25000000	5294	639.277	3384332	32

Source: Preparation of the two researchers.

***The two researchers provide the following suggestions to reach and seek to improve the performance and the operational and strategic work of the plant Sample Research:***

1- The production plant for the production of consumables was established according to a feasibility study to meet the needs of the Ministry of Electricity, Ministry of Oil, Ministry of Communications, Ministry of Construction and Housing. The factory sales are subject to the requests of these ministries because the company has special products. The central instructions related to the purchase of the local product and the non-importation of similar products except in the case of an official apology by the company, as stated in the provisions of the implementation of the federal budget for previous years, but there is no actual implementation.



2. In order to achieve continuity and improvement in the production processes of the plant, the replacement of all existing machines and equipment due to lack of efficiency as it has a productive life of about (50) General and this causes increase in lossing and replacement of spare tools in them, as well as these equipment and machinery left by modern technology and renewable Are not suited to the requirements of the current market and tastes of customers; for example, some of these plants stopped because of the use of production in all life facilities such as the production of telephone cables insulated paper, field wires and others.

3 - It is necessary not to include the company programmed parts of the electricity supply, especially in the summer as the inclusion of the company leads to the occurrence of abnormal damage.

4 - Reduce human resources in the company and the transfer of surpluses to other departments and what causes it to increase unjustified direct wages, which keep them from achieving competitive precedence led by cost, which is reflected in the reduction of prices of the company's products.

5- Seriousness in the application of laws imposing duties on imported products similar to the products of the company by the State.

6- Activating the standardization and quality control device to enter similar products (in terms of type) of the products of the company and not covered by quality standards, which increased the element of competition.

### **8- Proposed Alternatives to Increase Operational Capacity and Reduce Fixed Costs to Achieve Profits:**

#### **1. Using the operational leverage equation:**

The two researchers suggest that the plant should increase the current operating capacity within the limits of available energy so that it can sell a larger number of units / kilometers, which have a 25% profit and are approved by the company as a profit ratio with the reduction of fixed costs, So that it is necessary to know the kilometers to be manufactured for each product by using the operational leverage equation within the limits of available energy.

Operational leverage = (selling price  $\times$  number of units / units - variable costs  $\times$  number of units / km) = (fixed costs + 25% of selling price)

Assuming the proposed number of units / km =  $\aleph$

Product 120/20 ACSR =  $2000 \times \aleph - 1510 \times \aleph = 3770 + (25\% \times 2000)$

$= 490 \aleph = 3770 + 500$

$= 490 \aleph = 4270$  thousand dinars



Then  $a = (4270 \text{ TH D}) + (490 \text{ TH D}) = 8.714 \times 1000 = 8714.285 \text{ km}$

Percentage of increase = number of units / km proposed number of units / current km =

$$13.16 \text{ times} = \frac{8714.28}{661.974} =$$

Table (18) shows the calculations of the products selected in the research:

Table (18) Operational power after using the operational leverage equation

S	the product	NO. unit produced	Operating leverage equation / Kilometers to be produced	Percentage of increase% And the number of times of increase	Available Energy (km)
1	20\120ACSR	661.974	$8714.28 \text{ )} = 3770 + 500 = ( \text{ ) } 2000 - \text{ ) } \times 1510 = ( \text{ ) } \times$	1316% 13 Once	1303020
2	95AAC mm 2	157.9	$17136.00 \text{ )} = 3420 + 350 ( \text{ ) } 1400 \times - \text{ ) } \times 1180 = ( \text{ ) } \times$	1080% 108 Once	995550
3	1 x 50 mm 2 Normal	18.12	$741.13 \text{ )} = 6470 + 1625 ( \text{ ) } 6500 \times - \text{ ) } \times 5090 = ( \text{ ) } \times$	31684% 317 Once	984400
4	1 x 95 mm 2 Normal	30.75	$\text{ ) } 8290 + 3000 = ( \text{ ) } 12000 - \text{ ) } \times 17970 = ( \text{ ) } \times 2891.1 =$	9402% 94 Once	3749000
5	4 x 10 mm 2 normal	0.632	$6092.5 \text{ )} = 15120 + 2000 = ( \text{ ) } 8000 - \text{ ) } \times 5190 = ( \text{ ) } \times$	9640% 96 Once	854680
6	4 x 10 mm 2 armed	4.338	$\text{ ) } 23475 + 2200 = ( \text{ ) } 8800 - \text{ ) } \times 5860 = ( \text{ ) } \times 8732.99 =$	2013% 20 Once	854680
7	4 x 240 mm 2 armed	1.162	$5967.1 \text{ )} = 83405 + 30000 ( \text{ ) } = 120000 - \text{ ) } \times 100995 ( \text{ ) } \times$	5135% 51 Once	20732200
8	3 x 70 \ 150 mm 2 normal	2.529	$6175.25 \text{ )} = 47880 + 16250 ( \text{ ) } 65000 - \text{ ) } \times 5465 = ( \text{ ) } \times$	2442% 24 Once	10898320

Source: Prepared by the two researchers.

Table (19) shows the reduction in fixed costs as a result of the increase in operating capacity as in the following equation:

The amount of reduction in fixed costs (direct labors) = fixed costs ÷ the number of units according to operational leverage:

Table (19) Reduction after using the operational leverage

S	the product	NO. unit produced KM	Fixed costs (current wages) Dinars / km	Fixed costs (direct wages) After the use of the operational crane Dinars / km	Amount of reduction (difference) Dinars / km
1	20\120ACSR	661.974	$\frac{3123}{661.974} \approx 4717$	$358 \approx \frac{3123}{8714}$	4359
2	95AAC mm 2	157.9	$\frac{2839}{157.9} \approx 17954$	$\approx 165 \frac{2839}{17136}$	17789
3	1 x 50 mm 2 Normal	18.12	$\frac{5360}{18.12} \approx 295805$	$933 \approx \frac{5360}{5741}$	294872
4	1 x 95 mm 2 Normal	30.75	$\frac{6870}{30.75} \approx 223778$	$\frac{6870}{2891} \approx 2376$	221402
5	4 x 10 mm 2 normal	0.632	$\frac{12525}{0.632} \approx 19818000$	$\frac{12525}{6092} \approx 2056$	19815944
6	4 x 10 mm 2 armed	4.338	$\frac{19416}{4.338} \approx 4482711$	$\frac{19416}{8732} \approx 2227$	4480484



7	4 x 240 mm 2 armed	1.162	59455249 $\approx \frac{67087}{1.162}$	11578 $\approx \frac{67087}{5967}$	59443671
8	3 x 70 \ 150 mm 2 normal	2.529	$\approx 15682483 \frac{39661}{2.529}$	6423 $\approx \frac{39661}{6175}$	15676060

Source: Prepared by the two researchers.

## 2. Use the Breakeven equation

Point of reference in units (kilometers) = Fixed costs Contribution margin per kilometer

Contribution margin per km = Sales price - variable costs

Product 120/20 ACSR = 2000 - 1510 = 490 thousand dinars

Contribution margin = 490/2000 = 24.5%

breakeven in units (km) =  $3770 \div 490 = 7.693 \times 1000 = 7693$  km

A point of equalization in amounts (thousand dinars) =  $3770 \div (0.245) = 15387$  thousand dinars

That the company / factory can sell 7693 km of product (120/20 ACSR) to reach the point of parity after this amount begins to achieve profit as well as the proportion of the equivalent (amounts) the company to receive amounts of 15387 thousand dinars after this amount realized Profits. Table (20) shows the calculations of the products selected in the research.

Table (20) Amount of units and amounts of a break-even point

S	the product	Quantity produced / Km	Equalizer equation In units / km	Equalizer equation In amounts / thousand dinars	Available energy ( How many)
1	20\120ACSR	661.974	$3770 \div 490 = 7693$	$3770 \div 0.245 = 15387$	1303020
2	95AAC mm 2	157.9	$3420 \div 220 = 15545$	$3420 \div 0.157 = 21783$	995550
3	1 x 50 mm 2 Normal	18.12	$6470 \div 1410 = 4588$	$6470 \div 0.216 = 29953$	984400
4	1 x 95 mm 2 Normal	30.75	$8290 \div 5970 = 1389$	$8290 \div 0.497 = 4120$	3749000
5	4 x 10 mm 2 normal	0.632	$15120 \div 2810 = 5381$	$15120 \div 0.351 = 5307$	854680
6	4 x 10 mm 2 armed	4.338	$23475 \div 2940 = 7985$	$23475 \div 0.334 = 70284$	854680
7	4 x 240 mm 2 armed	1.162	$83405 \div 19005 = 4388$	$83405 \div 0.158 = 527880$	20732200
8	3 x 70 \ 150 mm 2 normal	2.529	$47880 \div 10385 = 4610$	$47880 \div 0.159 = 301132$	10898320

Source: Prepared by the two researchers.

## 3: Reduction of fixed costs commensurate with the ratio of actual production to the plan (electrical wires and electrical cables at 10.3% and 7.3%, respectively):

1-reduction of fixed costs Total:

Fixed costs of air wires (aluminum bars) = 15537.732 thousand dinars (Supplement 2).





Fixed costs of electrical cables (copper bars) = 830084.734 thousand dinars (Supplement 2).

The amount of reduction in fixed costs (for air wires) =  $(15537.732 \times 0.893) = 13875$  million dinars

The amount of reduction in fixed costs (for Cables) =  $(830084.734 \times 0.927) = 769488$  million dinars

The Total Reduction of the plant = 783364 million dinars

2-reducing the fixed costs at the level of products selected in the research sample:

Table (21) Cost and production after reduction against current selling prices (thousand dinars)

S	the product	Fixed costs (2) and (3)	discount percentage %	Total fixed costs after reduction	Fixed + variable production costs	selling price	Profits or (Losses)
1	20\120ACSR	5170.12	0.893	553.20	2063	2000	(63)
2	95AAC mm 2	4694.209	0.893	502.28	1682.28	1400	(282)
3	1 x 50 mm 2 Normal	8873.267	0.927	647.75	5737.75	6500	763
4	1 x 95 mm 2 Normal	11372.183	0.927	830.169	18800.169	12000	(6800)
5	4 x 10 mm 2 normal	20732.529	0.927	1513.47	6703.47	8000	1297
6	4 x 10 mm 2 armed	32189.421	0.927	2349.82	8209.82	8800	591
7	4 x 240 mm 2 armed	114357.152	0.927	8348.07	109343.07	120000	10657
8	3 x 70 \ 150 mm 2 normal	65649.474	0.927	4792.41	59407.41	65000	5593
Total/ Profits							11756

Source: Prepared by the two researchers.

## The Forth section -: Conclusions and Recommendations:

### First: Conclusions:

1-The ratio of direct wage costs to the total cost of manufactured goods represented 37% (Table 6), which is a very high percentage, since the bulk of these costs are fixed costs due to the increase in the number of workers both in the company and the factories, The expansion of these numbers and costs has placed an additional burden on production and marketing costs.

2- low priority of the competitive prices of local products of the company compared to the price of imported products as it follows an incorrect policy to sell its products of cables and wires as it sells its products at prices well below the total cost to survive and maintain its presence in the domestic market, not for competitive priority purposes than the company Big losses. This indicates the poor performance of the marketing



department and the planning department in promoting the company's sales as well as its strategic plans.

3- The equipment and machinery in the factory are subject to permanent maintenance and maintenance of technological development and continuous for the purpose of increasing efficiency and the volume of productive capacity, but the reality indicates a significant increase in the cost of maintenance and backup tools because of the productive life of more than forty years.

4. A significant reduction in actual production levels from the 2016 planned annual level of cables and cables (10.7% & 7.3%) respectively, which led to higher actual production costs. This indicates the weak competitive performance of the company's products, the loss of its competitive position in the market and the significant decline in its market share, which led to the company's loss of precedence in rationalizing costs, which negatively affected it as a competitive priority.

5 - The lack of coordination between the company and the ministries of state and industrial companies that benefit from the products of the factory in the Ministry of Industry to sell and promote their products as the sales of the company depends on the requests of these ministries and companies because the company has special products, in addition to sales to the private sector of household wires.

6 - Lack of knowledge or interest of the top management competitive priorities and this is evidenced by the lack of studies of their own, especially the precedence of rationalization of costs as a guide to determine the selling prices.

7 - not to protect the local product and make it the forefront of products in the market; This is evidenced by the existence of many products similar to the products of the company, which led to flooding the local market.

### **Second: Recommendations:**

1 - Reduce the number of employees in the company and transfer of surplus to other departments of the ministry, which causes the reduction of high wages unjustified and approaching the competitive precedence at the prices of the company's products where the increases in wages as a result of central decisions related to the return of political dismissals and the transfer of employees to the company companies of the Ministry of Industry.

2 - The need to strive continuously towards reducing the production, marketing and administrative costs of the plant through alternatives and solutions In order to achieve cost reductions and create price flexibility to increase sales of the plant or company. In order for the company or the



manufacturer to overcome the causes of its production and marketing crisis and to achieve excellence on its competitors, it should define the goals of the planning and marketing policy and determine the competitive precedence, including what came during the research, the precedence of cost rationalization which will enable it to improve its capabilities and capabilities to meet the challenges, Local market.

3 - Achieving competitive priorities in the process of production and marketing of the company to replace all existing machines and equipment because of their inefficiency, which causes waste in production as well of these machines have left the modern technology and renewable as they are not suited to the requirements of the current market.

4 - The need to pay attention to the short and long term plans both for production or for sales by the planning and marketing departments and the need for high cooperation and coordination between them with other departments (such as production, quality, maintenance, laboratories, etc.); and work on preparing studies that work to raise the operational and marketing performance of the company Including activation of the role of the competitive priorities listed in the research, which has become one of the most important justification for the presence and continuity of the presence of companies in a changing world and fluctuating prices and tastes and customer needs.

5 - All ministries and other companies should be obliged to buy from the company's products and apply the central instructions regarding the purchase of the local product and not to import for similar products except in the case of an official apology by the company as stipulated in the instructions of implementation of the federal budget but there is no actual implementation .

6 - The need for senior management to support and apply the competitive priorities mentioned in the research to achieve substantial reductions in production costs and quality improvement to strengthen its competitive position in the long term and to maximize profitability in the short term and increase market shares.

7 - To apply the laws to impose customs duties on imported products similar to the company 's products at all border crossings, especially after the company obtained the decision of the Council of Ministers No. 282 of 2016 to protect the local product; as well as activating the role of the standardization and quality control; to enter products similar to the company' s products And not covered by quality standards.



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## SUPPLEMENTS

Supplement: (1) Production quantities for the period from 1/1/2016 to 31/12/2016

Details			the total weight Kg	Technological quantity KM	Technological time Time hour	production quantity kilometer	The factory name Electrical capacitors	S
Packaging Production × Total Weight (ton)	Raw materials Production of kt (Tons)	Cost of wages / cost Extinction and other costs Production × Time. hour						
328603	226395.00	1610	496.400	342.000	2.433	661.974	Manufactured from aluminum rods: ASCR 20\120/KM	a
8469	8469	72	136.6	136.6	1.16	62	50 mm 2 AAC	
16805	16805	190	185.8	185.8	2.1	90.450	70 mm 2 AAC	
41260	41260	343	261.3	261.3	2.17	157.900	95 mm 2 AAC	
395137	292930	2215				972.324	Total for Aluminum	b
15	12	0.117	184.5	143.3	1.4	8400.	Manufactured from copper rods: 1 x 16 mm 2 Insulated / Sleeve	
5.7	4	0.055	124.3	91.1	1.2	0.046	1 × 10 Mm 2 insulated	
1100	682	7	500	310.2	3.27	2.200	1 × 35 Mm 2 normal	
11843	7755	76	653.6	428	4.19	18.120	1 × 50 Mm 2 normal	
171	120	1	871.3	618.3	4.69	0.195	1 × 70 Mm 2 normal	
35652	25946	165	1160	1630	5.37	30.735	1 × 95 Mm 2 normal	
28877	21935	133	1442.6	1095.8	6.64	20.017	1 × 120 Mm 2 normal	
10338	7900	44	1744.2	1333	7.44	5.927	1 × 150 Mm 2 normal	
6143	4210	26	2471.1	1693.5	10.4	2.486	1 × 185 Mm 2 armed	
4965	3560	21	3107.3	2228	13	1.598	1 × 240 Mm 2 armed	
36	14	0.323	1651.2	638	14.7	0.022	2 × 35 Mm 2 armed	
25	8	0.308	571.5	185	7	0.044	2 × 10 Normal	
405	240	2	5637.8	3328	28.8	0.072	3 × 120 Mm 2 armed	
4831	2995	20	7644.1	4738.4	31	0.632	3 × 150 / 70 Normal	
44	24	0.279	1987.4	1101.6	12.66	0.022	3 × 35 / 16 Normal	
1587	945	8.6	3180.9	1894	17.3	0.499	3 × 70 Normal	
1140	505	8.8	2151.22	954.5	16.7	0.530	3 × 35 Mm 2 armed	
358	223	1.6	5595.1	3483.7	24.64	0.064	4 × 95 Mm 2 normal	
3813	1612	42	878.9	371.6	9.79	4.338	4 × 10 Mm 2 normal	
664	253	7	568.7	216.9	6	1.168	4 × 6 Normal	
150	78	1	1791	931.7	13.04	0.084	4 × 25 Mm 2 normal	
1287	432	16	1107.7	371.6	15.2	1.162	4 × 10 Mm 2 armed	
34316	22796	137	13569	9014	54	2.529	4 × 240 armed	
222	136	1.5	2072.3	1266.5	14.51	0.107	4 × 35 Normal	





1265	611	12	1216.8	588	11.370	1.40	4× 16 Normal
292	166	2	3074.4	1750.4	18.43	0.095	4× 50 Normal
13627	5381	147	1489.1	588	16.1	9.151	4× 16 armed
2989	1523	20	3436.2	1750.4	23.1	0.870	4× 50 armed
561297	110066	3115				102.833	Total

Source: Preparation of the two researchers based on quantitative data in the production plant.

(2) Determination and measurement of costs by nature for the year 2016 / Factory of Electrical capacitors (aluminum rods) (thousand dinars)

Total costs Thousand dinars	Administrative costs	Marketing costs	H / costs Other indirect industrial	H / 321 Cost of material Aluminum	H / 321 Cost of copper material	H / 3241 Cost of packing materials	H / 323 Cost of backup tools	H / 37 Cost of investments	H / 31 Cost of wages	Quantity Kg	product name
6675.000	1228.966	170.441	267.652	1154.477	0.000	65.243	23.584	647.267	3123.446	661.974	MM 120\20 2ACS
5450.000	1079.844	149.760	235.176	627.199	0.000	24.420	20.722	568.729	2744.450	90.45	AA mm 2 70
5870.000	1115.839	154.752	243.015	882.061	0.000	34.343	21.413	587.686	2835.932	157.9	95 Mi2 AA2
3130.000	596.485	82.724	129.907	461.116	0.000	17.954	11.447	314.155	1515.982	62	AAC 50 mm
	2792.168	407.917						2117.837	10219.810		Total
	3200.085							12337.647			Total

(3) Determination and measurement of costs by nature for the year 2016 / Factory of Electrical capacitors (copper rods) (thousand dinars)

Total costs Thousand dinars	Administrative costs	Marketing costs	A / others	A / 321 Aluminum	A / 321 Copper material	A / 3241	A / 323 Backup	A / 37 depreciation	A / 31 Direct wages	Quantity Kg	Product name
4073.000	704.753	97.739	153.486	0.00	1510	23.652	13.524	371.177	1791.146	0.084	Insulated 1 * 16
3284.000	604.074	83.777	131.559	0.00	960	15.934	11.592	318.152	1535.268	0.046	Insulated 1 * 10
9365.000	1646.101	228.292	358.499	0.00	3269	64.096	31.589	866.963	4183.605	2.2	Normal 1*35
13960.000	2109.224	292.520	459.361	0.00	4510	83.787	40.476	1110.879	5360.644	18.12	Normal 1*50
14563.000	2360.922	327.427	514.177	0.00	6516	112.720	45.306	1243.442	6000.339	0.195	Normal 1*70
29335.000	2703.230	374.901	588.728	0.00	17182	148.704	51.875	1423.728	6870.324	30.75	Normal mm 2 1 * 95
22054.000	3342.542	463.564	727.961	0.00	11548	184.931	64.144	1760.438	8495.149	20.07	Normal mm 2 1 * 120
102225.000	3745.258	519.416	815.667	0.00	14048	223.594	71.872	1972.539	9518.662	5.927	Normal mm 2 1 * 150
37180.000	7399.904	1026.265	1611.600	0.00	6723	211.646	142.005	3897.355	18807.030	0.022	armed 2*35
16917.000	3523.764	488.697	767.429	0.00	1949	73.262	67.621	1855.884	8955.730	0.044	Normal 2*10
86455.000	14497.770	2010.641	3157.421	0.00	35073	722.725	278.214	7635.635	36846.430	0.072	armed 3*120
120265.000	15605.240	2164.231	3395.613	0.00	49940	979.918	299.466	8218.913	39661.090	0.632	Normal 3*70\150
35695.000	6388.080	885.939	1391.239	0.00	11609	254.770	122.588	3364.452	16235.460	0.022	3*35\16
78140.000	12403.650	1720.215	2701.349	0.00	36713	717.251	238.027	6532.710	31524.170	0.064	Normal 3*95
51234.000	8708.730	1207.781	1896.645	0.00	19960	407.768	167.121	4586.684	22133.450	0.499	Normal 3*70
43745.000	8406.694	1165.892	1830.866	0.00	10059	275.768	161.325	4427.608	21365.810	0.53	armed 3*35
24392.000	4928.235	683.478	1073.304	0.00	3915	112.669	94.573	2595.586	12525.230	4.338	Normal 4*10
14884.000	3020.369	418.884	657.796	0.00	2285	72.903	57.961	1590.757	7676.340	1.168	Normal Hard 4* 6
35365.000	6564.269	910.374	1429.610	0.00	9818	229.593	125.969	3457.246	16683.250	0.084	Normal 4*25
38045.000	7651.601	1061.172	1666.417	0.00	3915	141.999	140.835	4029.918	19446.730	1.162	armed 4*10
215350.000	27183.320	3769.952	3770.165	0.00	94996	1709.44	521.651	14316.820	69087.060	2.529	armed 4*240
40833.000	7304.259	1013.000	1590.770	0.00	13347	265.654	140.169	3846.981	18563.950	0.107	Normal 4*35
29355.000	5723.599	793.784	1246.524	0.00	6196	155.985	109.836	3014.485	14546.660	1.04	Normal 4*16
52828.000	9277.566	1286.671	2020.530	0.00	18447	394.116	178.037	4886.276	23579.160	0.095	Normal 4*50
39971.000	8104.657	1124.004	1765.086	0.00	6196	190.892	155.529	4268.532	20598.180	9.151	armed 4*16
63322.000	11628.420	1612.702	2532.515	0.00	18447	440.496	223.151	6124.416	29553.910	0.87	armed 4*50
34424.000	5235.306	726.065	1140.180	0.00	17847	316.777	100.466	2757.313	13305.660	2.486	armed 1*158
43743.000	6544.133	907.581	1425.225	0.00	23480	398.333	125.583	3446.641	16632.070	1.598	armed 1*240
	197315.67	27364.964						103921.53	501482.57		
	224680.634							605404.1			