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RESOURCES CONSUMPTION ACCOUNTING FOR A RATIONAL PRODUCTION COSTS: A CASE STUDY

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ABSTRACT. This study aims to examine the effectiveness of using the resource consumption accounting system to reduce the cost of the product as one of the advanced approaches to allocating costs. Because of the enormous competition of companies in the market, cost control becomes an essential part that helps managers make cost-cutting decisions to achieve greater corporate profitability. This study shedding light on the new cost-accounting model RCA, the cost management approach that combines German cost accounting and activity-based cost accounting (ABC). This system provides more accurate and reliable data for more effective planning, control, and performance evaluation. Using this system in the Iraqi industrial companies is an important step in improving the accuracy of measuring costs and thus reducing the cost of its products and achieving a competitive advantage. The study was applied in the Babel tire factory, one of the factories of the General Company for Rubber Industries and Tires.

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Introduction

The environment in which companies operate is increasingly dynamic and complex as there are constant changes in technology, competition, politics and more. As a result, these companies need a sophisticated cost management system that reflects these variables in a timely manner and is able to assist management in making appropriate decisions. In light of the above, traditional cost systems have become unable to meet the needs of management in light of the technological development and therefore developed cost systems have emerged to meet the requirements of the modern environment and its various needs, including the abc cost system, target cost technology TC, LCC product lifecycle costs and cost system based on TDABC time-oriented activities and finally the emerging resource consumption accounting system (RCA) is an integrated and comprehensive cost management system that combines the principles of German cost management with an activity-based cost system that provides management with accurate information on the allocation and efficient use of available resources, as this

combination involves features that significantly improve other cost management systems, as the RCA resource consumption accounting system, which is the subject of the study, is a powerful management tool that classifies costs on Base resources by focusing on them as well as activities that are at the center of the ABC system and thus provide detailed cost of information to management. In this context, the important role of the resource consumption accounting system is to reduce costs by focusing on resources and identifying idle energy while not neglecting the input of activities into the cost allocation process.

1. Literature review

The emergence and philosophy of the resource consumption accounting system

The efforts made by researchers in the field of accounting measurement have resulted in the emergence of the resource consumption accounting system (RCA) at the beginning of the twenty-first century, specifically in the year 2000, as it is considered one of the advanced approaches to measuring and allocating costs in America and many European countries. (Ali, 2013, p. 260) In the first quarter of 2002, the Clopay Corporation, which is one of the largest American corporations for plastic industries, participated in the group concerned with accounting for resource consumption in the Federation of International Advanced Industries CAM-I, where this group meets every three months to discuss matters related to the applications of Advances in management accounting tools and concepts in manufacturing and other industries As a result of these discussions, Clopay agreed to provide an empirical application of the principles of resource consumption accounting (Clinton & Webber, 2004:22). Accordingly, the RCA system was established in the United States as an advanced approach to management accounting. Which includes the German cost accounting GPK and the activity-based approach ABC.(Shuvankar et al, 2014:4) In this context, Webber and Clinton, 2004 mentioned that resource consumption accounting is divided into the resource level to provide superior information that helps to accurately determine costs and in the study of Clinton and Keys 2002, referring to resource consumption accounting as a dynamic, integrated and comprehensive system, and therefore resource consumption accounting is a dynamic system capable of adaptation. With the changes in consumption relations (Al-Qady and El-Helbawy, 2016:43), several definitions of the resource consumption accounting system have been provided by many researchers. Brouwer believes that RCA is a management theory that describes a dynamic and completely integrated system based on the principle of The comprehensive management accounting approach that provides managers with decision support information to improve projects. It is a relatively new, flexible and comprehensive management accounting approach that is largely based on the German management accounting approach (GPK Brouwer, 2016:33)). Ahmed and Moosa also defined resource consumption accounting (RCA) as the entrance to management accounting. which focuses on creating reliable information to reduce costs and maximize revenue to enhance a company's production capacity with the aim of achieving greater success in a highly competitive market. Resource-focused cost management and quantity-based cost modeling with the activity-based ABC model can be considered as an evolution of the activity-based costing system (ABC) in ERP systems. ERP (Tse and Gong, 2009:42).

It is clear to us that the philosophy of the resource consumption accounting system is based on the integration of GPK principles and ABC features in order to obtain detailed information about operations where cost behavior is interpreted based on the principles of causality and response inherent in the GPK system in addition to the principle of work that guides and guides

the ABC system with a high level of rigour and thus creates an integrated economic model for the process of capacity analysis and process management.

The basic features of the RCA resource consumption accounting system

- 1- Overhead allocation can be carried out vertically through cost centers or horizontally through activities and processes similar to ABC and regardless fixed costs should be separated from variable costs and the idle energy cost of products should not be allocated (Perkins, & Stovall, 2011:47)
- 2- The resource consumption accounting system forms cost pooling by pooling resources together on the basis of "technology, skill and homogeneity" and therefore the focus of the system shifts from activities to resources. (Balakrishnan, et al, 2012:13)
- 3- Replace the principle of contrast with the principle of response to operational modeling (Inanlou, et al, 2014:201)
- 4- Resource consumption accounting system excludes untraceable fixed costs based on causality principle (Webber & Clinton, 2004:12)
- 5- In the resource consumption accounting system, the value of the asset is reduced on the basis of the cost of replacing it. ((Horngren et al, 2016:605)

Through the above features, it is clear that the most important feature of the resource consumption accounting system is the separation of direct and indirect costs in the cost pool, since the smaller the cost change that occurs by changing the nature or volume of activity, the better the classification of costs according to their tracking helps to better determine the control of costs. Tracking affects our confidence in our estimate of the controllable cost.

The benefits of RCA

- 1- Provides accurate operational information that helps in analysis at the lowest level of operation where it provides three types of information:
 - A. Information that helps allocate cost to units producing goods or services
 - B. Information that helps to indicate the nature of the link between resource pools and cost pools in the unit
 - C. Information that helps challenge the amount and costs of idle resources (Sorour and Hamid, 2017:41)
2. Helps eliminate the motivation to reduce sales prices non-strategically to artificially manipulate the allocation of costs to specific products (Webber & Clinton, 2004:12)
3. Provide a direct understanding of energy costs and resource energy management as well as provide high quality data in short-term decisions (Okutmus, 2015:48)
4. By linking the required inputs to outputs, the Resource Consumption Accounting System is able to provide a consistent view of resource consumption and cost behaviour and responds to the endless debate about fixed and variable costs and their use in decision-making (Wagdi, 2014:4)
5. The Resource Consumption Accounting System provides a first-hand look at resource capacity management and costs, not just information to estimate or calculate (White, L. 2009:76)

In light of this, we can say that one of the main benefits of implementing the resource consumption accounting system is to unleash the strength of the already existing ERP system.

ERP systems are very effective in providing more data but not necessarily better data as what management needs is relevant information to enable it to achieve the organization's objectives.

Principles of the resource consumption accounting system

The Resource Consumption Accounting System provides three modeling principles that help a typical flow of resources that accurately reflect the flow of costs and allow managers to make the right decisions:

A- Causality Principle: Causality

The most important concept is that it provides rationality, logic and responsibility for the model, which is the first principle of modeling and causality requires that models of resource flows and associated costs be modeled on the basis of resources provided to consumers on the basis of cause and effect, which means that arbitrary allocations between resource pools are eliminated and if a causal relationship cannot be established, the flow of resources and associated costs must be allocated to a higher level in the organization(67: White.L,2009) Moreover, if a resource pool does not require outputs from another resource pool, it will not incur any costs from resource pools, which means that the product and final service will not reflect the full cost as specified in the Generally Accepted Accounting Principles (Ahmed & Moosa,2011:756), so the principle of causality is based on the term link or link as this term created the concept of cost that It can be justified, which is the appropriate cost of administrative accounting necessary to rationalize decisions(Hussein,2016:32) and therefore the principle of causality can be defined as the relationship between the quantitative production of the administrative goal and the amounts of inputs consumed if the output is to be achieved (Antonvan der Merwe et al., 2014:33) and therefore causality is intended to have a relationship between resources and activities on the one hand as well as between activities and products on the other. In the light of this relationship, the share of each activity is determined by the cost of resources and the share of each product in the cost of the activity.

Response principle: Responsiveness

The second principle in cost modelling is a response that ensures compliance with causality by describing the relationship between the output of a particular resource pool and the amounts of inputs from other resource pools required to produce it. In this way, the resource consumption accounting system governs the fixed and proportional (variable) relationships between resource pools and realizes that the nature of costs can change with output consumption. (Okutmus,2015:45) Where in the light of resource consumption accounting the response relationship is determined either in the form of a variable or constant response (owner,2016: 42) and allows the unique characteristics of these relationships to be more detailed and this greatly enhances support for effective decision. (White.l,2009:67 There are several advantages to the principle of response:

(Ahmed & Moosa,2011:756)

- Allow the reverse relationship between total cost and total size when manufacturing more complex products.
- Provides managers with specific knowledge of resources when linked to changes in product output.
- Enable accurate modelling of the economic flow of the facility and services regardless of their complexity.

In the light of the foregoing, we conclude that the response-based model provides the resulting information to managers that assist in optimal decision-making throughout the organization in order to achieve organizational objectives, and that the response-based model also supports detailed planning and forecasting as costs throughout the organization respond to changes in the outcomes of those decisions.

T- Principle of work: Work

The principle of action is not a comprehensive principle such as causality and response, but it is necessary to track resource flows sometimes between cost purposes that does not result in sufficient information to make administrative decisions and is necessary in some cases periodically and in some cases continuously in order to know the activity carried out in the consumption of resources between resource pools (White). L, 2009: 70 Resource Consumption Accounting System applies the principle of work, but in a more limited and highly disciplined way than ABC where activities are included in the resource consumption accounting model only when it adds the important and ongoing information that managers need. In this case, the activities must include quantitatively based engines that provide energy information and must consume inputs in a quantitative manner (Okutmus, 2015: 45).

The RCA's role in reducing costs

Cost reduction is the easiest and most specific way to increase profits in the short term and can also be the main driver of long-term growth as cost reduction is in the company's control quite the opposite of uncertainty in trying to increase revenues where there is concern about pricing and competitors' actions (Bragg, 2010: 7). Abbas & Wagdi emphasizes that at present product costs must be determined before production in order to develop and define a superior strategy that will lead to a sustainable competitive advantage for the company so it is necessary to consider all product costs throughout its life cycle to obtain a vision of costs and therefore the evaluation of cost systems in manufacturing companies is important Especially because these systems are linked to pricing systems, profit margins and corporate values (Abbas & Wagdi). The companies use cost information in various decision support processes where cost information of strategic importance contributes to the company's objectives and reflects the latest information from modern cost accounting systems and undoubtedly one of these systems that has been developed Recently it is a resource consumption accounting system (Yilmaz & Ceran, 2017: 139). This system creates a cost model that supports managers' decisions across the organization and complies with the organization's performance improvement strategy through a comprehensive understanding of the organization's strategy and competitive and regulatory status (White, 2009: 72) by providing information on how operational activities can be added to organizational outcomes through the relationship between resource pools and cost pools and with this type of cost pool. Information can reduce product costs by reducing or eliminating non-value-added activities (Tess & Gong, 2009: 45). Moreover, the Resource Consumption Accounting System separates costs to fixed and variable as this distinction allows us to better see how changes in cost size affect us as well as allow us to highlight idle energy and this is one of the main strengths of the RCA system, since in order for the firm to manage idle energy, they must be able to determine its size. Therefore, the accounting system for the consumption of idle energy resources is determined and gives this information to the supplier to take advantage of unused resources and make better decisions (Polejewski, 2009: 5). Through this, we find that the resource consumption accounting system plays a major role in reducing cost, outperforming other systems by dealing with costs accurately and identifying idle or untapped energy, which is reflected in reducing the cost of products, so cost systems used to calculate production costs are vital in providing accurate costs, correct quality and the right price decision at the same time. Competition in global markets with its competitors and the

resource consumption accounting system is one of the advanced cost calculation systems where it contributes to the development and implementation of innovation in organizations by providing the necessary information in the strategic decision-making process and works to improve the business structure by providing financial and non-financial information in the right place for the right people and Just in time.

2. Methodology

The Research problem

The problem of researching how to use the resource consumption accounting system in cost management and get rid of the problems of traditional systems in the process of allocating costs is crystallized where the traditional cost systems used in Iraqi companies failed to keep up with developments in the modern manufacturing environment, which led to the provision of distorted information and therefore purely these systems do not serve the administration and it was necessary to find solutions to the problems produced by traditional systems in accounting for dependency In.

Research objectives

The main objective of this research is two axes:

1- The system of accounting for the consumption of resources is a sophisticated and modern method in managing and allocating costs and the researcher has found that there is a scientific and practical scarcity related to the use of this system at the level of Iraq and therefore this system must be studied and evaluated analytically in terms of concept, objectives, principles and foundations on which it is based and to know the extent of its impact on the administration.

2. In the competitive and complex environment surrounding Iraqi companies, particularly industrial ones, they need a sophisticated cost measurement system that provides appropriate information for management to make strategic decisions in order to ensure their survival in the market and competitiveness.

The importance of research

The importance of research is demonstrated by focusing on the role of the resource consumption accounting system in companies for the purpose of developing their cost management systems in order to provide appropriate information that helps management reduce the costs of its products on objective grounds by rationalizing the use of available resources and identifying idle energy.

The hypothesis of research

The study is based on the basic premise that the use of the resource consumption accounting system helps to measure and manage cost more objectively than traditional cost accounting techniques in terms of allocating costs, determining the cost of one unit, exploiting idle energy and providing the necessary information for the economic unit, which helps it rationalize decisions, leading to the preservation of its products and survival in the market.

Sample selection

The field of research in the industrial sector was represented in the General Company for Rubber Industries and Tires / Babylon Tire Plant, which is considered an important company in the field of manufacturing and has recently entered into the field of competition with foreign companies after the support provided to it by the Ministry of Industry and Minerals.

The Research method

The researcher relied on the theoretical aspect of research on the inductive approach by relying on books, research, magazines and periodicals published on the Internet that are related to the subject of research, but the practical aspect the researcher used the descriptive analytical approach.

Data collection

The researcher relied in the completion of the study on a set of sources for the purpose of collecting data and information for the theoretical and practical aspects, which were as follows:

- 1- Foreign and Arabic books, research, studies and periodicals published in magazines and on the Internet.
- 2- Records, accounting documents and company reports sample study.
- 3- Field study and interviews with department managers in the company.

3. Conducting research and results**The goal of Case study**

The case study aims to test the extent to which the RCA resource consumption accounting system can be applied in one of the industrial companies of the Ministry of Industry and Minerals (General Company for Rubber Industries and Tires / Babylon Tire Laboratory) which depends on traditional cost allocation methods based on the volume of production and knowledge of the pros achieved by applying this system to the company compared to the traditional system currently applied.

A profile of the General Company for Rubber Industries and Tires

The General Tire Industry Company was established under the Certificate of Incorporation Numbered (58) on 31 December 1997 based on the provisions of Article 6 of the Numbered Companies Act (22) of 1997 with a capital of (5029) only five billion dinars. Twenty-nine million Iraqi dinars (written in Baghdad, 31/12/1997), the company is located in Najaf province (160 km southwest of Baghdad) and aims to contribute to supporting the national economy in the manufacture of tires and pipes of different sizes, types and rubber products of both natural and industrial types under the specifications. Approved and achieving the objectives of the development plans and the general tire industry company in Najaf and the General Company for Rubber Industries in Diwaniyah were merged into one company under the name (General Company for Rubber Industries and Tires) according to the administrative order numbered 2946 on 14 September 2015 and is subject to the ministerial order numbered 411/24/33832 on 6/8/8/2015 2015

The nature of the company's activity, specialization and associated factories: -

The company's main activity is the production of saloon radial tires, light, heavy and agricultural load, as well as the production of revitalised rubber. Subproduction is production (sound, hoses and products that rubber enters into its composition as spare tools (rubber goods). The General Company for Rubber Industries and Tires includes the following factories:

1- Babylon Tire Factory 2- Diwaniyah Tire Factory 3- Rubber Products Factory.

Calculating the cost of the product unit during the method applied in the company

Table (1) Total production cost

account number	Account name	Total amount
31	Salaries and wages	19617120000
32	Commodity Supplies	6718768000
33	Service supplies	411675000
37	Extinctions	841015000
	Total cost of manufacture	27588578000
38	Marketing expenses	54548000
39	Administrative expenses	218190000
	Cost of production	27861316000

Source (Accounts Department Records/ Cost and Pricing Division)

The table above shows the total cost of manufacturing tires in the plant for 2014 of 27861316000 dinars and the following will be explained the cost of each plant product as described in table (2).

Table (2): Cost per unit of products

to	Products	Tire weight	Cost per unit
1	Size 165/13 frame	6,410	22230
2	500/12 size frame	7,120	24692
3	Size 185/65/14 frame	7,850	27206
4	Size frame 205/65/15	9,075	31472
5	Size 195/65/15 frame	9,135	31680
6	Size frame 195/70/14	9,740	33778
7	Size 195/14 C frame	10,335	35842
8	Size 650/16 frame	15,202	52721
9	Frame size 750/16	21,535	74683
10	Agricultural framework 9.16-30	96,228	333719

Source (Accounts Department Records/ Cost and Pricing Division)

Implementation of RCA

For the purpose of implementing the company's resource consumption accounting system, we will take the next steps:

Step 1: - Inventory and identify the available resources spent on the company's products as described in the table below:

Table (3): the costs spent at the Babylon Tire Plant during 20144

Statement	Amount
Salaries and wages	19617120000
Disappearing	841015000
Raw materials and raw materials	4925968000

Spare tools	546700000
Packaging	24850000
Water and electricity	358440000
Oils and greases	35784000
Other diverse materials	53676000
Fuel and oil	748500000
Staff equipment	24850000
Maintenance services	115231000
Advertising, printing and hospitality	12425000
Research and experiments	18638000
Transportation, dispatch and communications	147356000
Rent fixed assets	12425000
Various service expenses	105600000
Total	27588578000

Source (preparing the two researchers based on the company's records)

The table above shows all the resources spent in the laboratory during 2014 where resources are the main source of costs in any economic unit, whether industrial or service, as well as as the starting point in any cost system, so companies always seek to exploit those resources ideally in order to reach the desired amount of output, so the focus on resources and consumption in the RCA resource consumption accounting system helps to provide information about energy. Unemployed, which helps the administration improve its predictability, both in the short and long term.

Step 2: - Inventory and identify elements of direct costs to products

Table(4): Direct raw materials and materials for laboratory products

#	Products	Total weight/kg	Amount
1	Size 165/13 frame	64100	134455583
2	500/12 size frame	569600	1194787828
3	Size 185/65/14 frame	211950	444584410
4	Size frame 205/65/15	235950	494926594
5	Size 195/65/15 frame	237510	498198836
6	Size frame 195/70/14	681800	1430137538
7	Size 195/14 C frame	25838	54197556
8	Size 650/16 frame	38005	79718946
9	Frame size 750/16	43070	90343244
10	Agricultural framework 9.16-30	240570	504617465
	Total	2348393	4925968000

Source (preparing the two researchers based on the company's records)

The table above includes raw materials and direct materials involved in production, each of which can be easily determined and a total of 4925968000 four billion, nine hundred and twenty-five million, nine hundred and sixty-eight dinars.

Step 3: - Identify Resources'Pool's resource pools

in system Accounting for resource consumption RCA first And before every thing Have to Select Complexes Resources which you gather in it costs Resources in Stage The first consists of Assembly Resources from Sources Similar and collect Information about Input (And costs Input) which Need Complexes Resources Production Result Particular And used Complexes Resources To distribute Costs also Depend Customizations Costs on Amounts Resources Consumable Goals Costs. The researchers distributed resources in six Resource

complexes are the Work Resources Complex, the Motor Force Resource Pool, the Reserve Tools Resource Complex, the Raw Materials Resource Complex, the Supplies Resource Complex and the Advertising And Advertising Complex, so resources will be determined for each complex as follows:

Table(5): Inventory and identification of resources in appropriate resource pools

Resource pool	Resources
Work Complex	Salaries and wages
Indirect materials complex	Packaging materials
	Oils and greases
	other materials
Motor Force Complex	Extinction
	Water and electricity
	Fuel and oil
	Machine maintenance
Reserve Tools Complex	Backup tools
The rest of the service supplies complex	Staff equipment
	Various service expenses
	Transportation, dispatch and communications
Advertising Complex	Advertising, printing and hospitality
	Rent fixed assets
	Research and experiments

Source (preparation of the two researchers)

Step4:- Separation of fixed and proportional (variable) costs in resource pools

RCA modelles all resources consumed along with all associated costs called fixed or proportional (variable) where there is a fixed consumption relationship when the amount of input consumed does not change with the level of production of the consumer cost target, and the relative (variable) consumption relationship is found when the amount of input consumed changes with the level of cost production consumed and therefore fixed and proportional (variable) costs will be determined in resource pools as follows. :

Table (6): Variable and variable costs in resource pools

Resource pool	Fixed costs	Variable costs	Total	Cost guide
Labor Resource Pool	19571320000	45800000	19617120000	working hours
Indirect materials complex	-	114310000	114310000	Turn on the machine
Motor Force Complex	841015000	1222171000	2063186000	Maintenance hours
Reserve Tools Complex	-	546700000	546700000	Amount of materials (kg)
Advertising Complex	43488000	-	43488000	Number of processing times

The rest of the service supplies complex	277806000	-	277806000	Number of units sold
Total	20733629000	1928981000	22662610000	

Source (Second Bay Preparation)

The researchers distributed the costs to appropriate resource pools and the costs in each resource pool were classified into fixed and variable, and this step represents a key pillar in the mechanism of the work of the RCA resource consumption accounting system where it helps to extract fixed cost rates through theoretical energy and variable cost rates through practical energy and thus help to identify idle energy by isolating fixed costs that do not add value to the main activities in the laboratory and keep them in resource pools as they are considered Period costs and activities are charged only at variable costs as described in the following steps

Step 5: - Identifying theoretical and practical energies and resource pool ratios

After we have identified resource pools, separated fixed and variable costs in resource pools, as well as identified appropriate resource directions for each resource pool, we will determine the capacity of resource pools, fixed and non-cost ratios, as the logic behind the use of theoretical and practical energy is that theoretical energy represents processing or availability of resources, while the amount of production planned (practical energy) represents the expected demand for output. Custom-made resource pools on the product and in this way unused energy, whether overemployed or lost, can be carefully exploited as follows:

Labor Resource Pool

Table (7):Theoretical and practical energies and fixed and variable cost rate in the work pool

1	Fixed costs	1915912000
2	Variable costs	45800000
3	Theoretical energy	5253120 an hour.
4	Practical energy	2626560hours.
1÷3	Fixed cost rate	364,718 dinars per hour
2÷4	Variable cost rate	142,69 dinars per hour
	Total rate	86.433dinars per hour

Source (researchers)

Raw materials and raw materials resource complex

Table (8):Practical energies and fixed and variable cost rate in the material complex

1	Variable costs	114310000
2	Practical energy	1194843 kg

1÷2	Variable cost rate	95,669 DINARS/KG
	Rate	95,669 DINARS/KG

Source (researchers)

Third: The resource pool of the driving forces: -

Table (9): Theoretical and practical energies and the rate of fixed and variable costs in the motor force pool

1	Fixed costs	841015000
2	Variable costs	1222171000
3	Theoretical energy	734,400 hours
4	Practical energy	135105 hours.
1÷3	Fixed cost rate	1145 JD/h
2÷4	Variable cost rate	9046 JD/h
	Total rate	10191 JD/h

Source (researchers)

Reserve Instrument Resource Pool

Table (10): Theoretical and practical energies and fixed and variable cost rate in the reserve instrument resource pool

1	Variable costs	546700000
2	Practical energy	375840 hours
1÷2	Variable cost rate	1454,608 dinars per hour
	Total rate	1454,608 dinars per hour

Source (researchers)

Resource Pool of the rest of the service supplies

Table (11): Theoretical and practical energies and fixed and variable cost rate in the resource pool of the rest of the service supplies

1	Fixed costs	277806000
2	Theoretical energy	248,500 production volume
1÷2	Fixed cost rate	1118 dinars
	Total rate	

Source (researcher's preparation)

Advertising Resources Pool

Table (12): Theoretical and practical energies and fixed and variable cost rate in the advertising resource pool

1	Fixed costs	43488000
2	Theoretical energy	248,500 frames
1÷2	Fixed cost rate	175 dinars /frame
	Total rate	175 dinars/frame

Source (researchers)

Step 6: - Identify the resources consumed by activities from complexes

In this step, the resources consumed will be determined according to activities derived from resource pools and once the resource capacities have been determined, it is necessary to calculate their costs to determine the amount of resources used by the activity complexes, where the resources used by each resource pool will be distributed to the costs collected in resource pools on activities and will be loaded on products from there, and the activities are represented in the Babylon Tire Laboratory as shown in the following table:

Table (13): Activity centers in Babil Tire Plant

Activity name	Number of workers	Amount of materials (kg)	Number of maintenance times	Number of machines
Preparation	63	356783	9	18
Composition	60	261641	10	15
The taxi	63	178391	8	12
Fabric	56	214069	12	15
Construction	95	118927	12	14
riveting	63	59464	7	9
Packaging	60	5568	3	2
Total	460	1194843	61	85

Source (preparation of researchers based on company records)

Table (14): Resources consumed by activities from resource pools

to	Activities	Work	Materials	Driving forces	Spare tools
1	Preparation	90720	356783	28610	55452
2	Composition	86400	261641	23842	61613
3	The taxi	90720	178391	19074	49290
4	Fabric	80640	214069	23842	73936

5	Construction	136800	118927	22253	73936
6	riveting	90720	59464	14305	43129
7	Packaging	86400	5568	3179	18484
	Total	662400	1194843	135105	375840

Source (researchers)

Resources consumed in the work complex = (working energy of the work resource pool (Table 7) ÷ the total number of workers) * number of workers in the department

Consumed Resources = $(662,400 \div 460) \times (63, 60, 63, 56, 95, 63, 60)$

Resources consumed in the motor force pool = (Practical power of the engine pool (Table 9) ÷ total number of machines) * number of department machines

Consumed resources = $(135105 \div 85) \times (18, 15, 12, 15, 14, 9, 2)$

Resources consumed in the reserve tools complex = (practical power of the spare tools resort (table 10) ÷ total maintenance times) * number of maintenance times per section

Resources consumed = $(375840 \div 61) \times (9, 10, 8, 12, 12, 7, 3)$

The resources consumed in the materials complex were distributed according to the consumption rate of each section of indirect materials obtained from the company.

Step7: - Distribution of resource group costs to activities

In this step, we will distribute the costs in the resource pool to activities where the costs collected in each resource pool will be distributed as much as the activities consume those resources and the costs of resource pools will be distributed to the activities according to the following equation:

Activity cost = share of activity of resources × (fixed cost rate + variable cost rate) the equation will be applied to resource pools

Table 15: Distribution of resource pool costs

Activities	Work	Indirect materials	Driving forces	Spare tools	Total
Preparation	39359779	34133073	291564510	80660923	445718285
Composition	37485504	25030933	242973822	89622763	395113022
The taxi	39359779	17066486	194383134	71697628	322507027
Fabric	34986470	20479767	242973822	107547897	405987956
Construction	59352048	11377627	226780323	107547897	405057895
riveting	39359779	5688861	145782255	62735918	253566813
Mobilization	37485504	533253	32397189	26886974	97302920
Total	287388863	114310000	1376855055	546700000	2325253918

Source (researchers)

Table 16: Idle energy costs under RCA

Resource pool	Costs achieved	Distributed costs	Idle Energy
Labor Resource Pool	19617120000	287388863	19329731137
Materials Resources Complex	114310000	114310000	0
Motor Force Complex	2063186000	1376855055	686330945
Reserve Tools Complex	546700000	546700000	0
Equipment Resource Pool	277806000	0	277806000
Advertising Complex	43488000	0	43488000
Total	22662610000	2325253918	20337356082

Source (researchers)

The table above shows the idle energy costs as a result of the application of the resource consumption accounting system in the Babylon Tire Plant, which was reached by deducting the costs distributed in table (15) from the costs achieved in table (3).

Table (17): Distribution of costs to products

to	Products	Download rate*	Production volume	Costs
1	Size 165/13 frame	9357	10000	93570000
2	500/12 size frame	9357	80000	748560000
3	Size 185/65/14 frame	9357	27000	252639000
4	Size frame 205/65/15	9357	26000	243282000
5	Size 195/65/15 frame	9357	26000	243282000
6	Size frame 195/70/14	9357	70000	654990000
7	Size 195/14 C frame	9357	2500	23392500
8	Size 650/16 frame	9357	2500	23392500
9	Frame size 750/16	9357	2000	18714000
10	Agricultural framework 9.16-30	9357	2500	23392500
	Total		248500	2325214500

Source (preparation of the two researchers)

* **Download rate = $2325253918 \div 248,500 = 9357$**

Table (18): Total costs of products under RCA

to	Products	Direct materials	Transfer costs	Total costs
1	Size 165/13 frame	134455583	93570000	228025583
2	500/12 size frame	1194787828	748560000	1943347828
3	Size 185/65/14 frame	444584410	252639000	697223410
4	Size frame 205/65/15	494926594	243282000	738208594
5	Size 195/65/15 frame	498198836	243282000	741480836

6	Size frame 195/70/14	1430137538	654990000	2085127538
7	Size 195/14 C frame	54197556	23392500	77590056
8	Size 650/16 frame	79718946	23392500	103111446
9	Frame size 750/16	90343244	18714000	109057244
10	Agricultural framework 9.16-30	504617465	23392500	528009965
	Total	4925968000	2325214500	7251182500

Source (preparation of the two researchers)

Table (19): Cost of manufacture per product

to	Products	Rate*	Tire weight	Cost of manufacture
1	Size 165/13 frame	3087,721	6,410	19792
2	500/12 size frame	3087,721	7,120	21984
3	Size 185/65/14 frame	3087,721	7,850	24239
4	Size frame 205/65/15	3087,721	9,075	28021
5	Size 195/65/15 frame	3087,721	9,135	28206
6	Size frame 195/70/14	3087,721	9,740	30074
7	Size 195/14 C frame	3087,721	10,335	31911
8	Size 650/16 frame	3087,721	15,202	46940
9	Frame size 750/16	3087,721	21,535	66494
10	Agricultural framework 9.16-30	3087,721	96,228	297125
	Total			594786

Source (preparation of the two researchers)

*We extract the cost of manufacture per frame by dividing total costs by the total weight of the tires

$$7251182500 \div 2348393 = 3087,721 \text{ JD/kg}$$

Table (20): Total cost per frame under RCA system

to	Products	Cost of manufacture	M Administrative	Marketing	Total cost
1	Size 165/13 frame	19792	555	149	20496
2	500/12 size frame	21984	661	165	22810
3	Size 185/65/14 frame	24239	729	182	25150
4	Size frame 205/65/15	28021	843	211	29075
5	Size 195/65/15 frame	28206	849	212	29267
6	Size frame 195/70/14	30074	905	226	31205
7	Size 195/14 C frame	31911	960	240	33111
8	Size 650/16 frame	46940	1412	353	48705
9	Frame size 750/16	66494	2001	500	68995
10	Agricultural framework 9.16-30	297125	8940	2235	308300
	Total	594786	17855	4473	617114

Source (researchers)

Table (21): Comparing the cost of manufacture with the company's system

to	Products	Cost per unit		troupes
		Company system	RCA system	
1	Size 165/13 frame	22230	20496	1734
2	500/12 size frame	24692	22810	1882
3	Size 185/65/14 frame	27206	25150	2056
4	Size frame 205/65/15	31472	29075	2397
5	Size 195/65/15 frame	31680	29267	2413
6	Size frame 195/70/14	33778	31205	2573
7	Size 195/14 C frame	35842	33111	2731
8	Size 650/16 frame	52721	48705	4016
9	Frame size 750/16	74683	68995	5688
10	Agricultural framework 9.16-30	333719	308300	25419

Source (researchers)

Conclusion

Resource consumption accounting system is a technology that integrates the best methods from all over the world where it combines the German GPK cost management system with ABC activity-based cost allocation methods to form a comprehensive management accounting system that ultimately gives non-accountants ready-to-make information. The application of RCA leads to appropriate measurement and ironing of product cost and provides cost savings by reducing running expenses. Designing a cost accounting system at the entry to resource consumption accounting gives reliable information based on scientific foundations, resulting in a fair distribution of costs and the removal of non-value charges. Information supplied by the Resource Consumption Accounting System on the "causes" of costs in production processes (i.e. activities that pay for expenses) might strengthen the company's capacity to regulate demand for certain cost-oriented activities. Where behavior (fixed versus changeable) can help management to separate idle energy expenses. The usage of the resource consumption accounting system serves to offer a future look at how the firm's activities resources are best used, which boosts the efficiency of those activities within the organization. Traditional cost methods employed in Iraqi enterprises utilizing the unified accounting system have various difficulties that result in their failure to give suitable information for administrative decision-making. The requirement to use the resources available in the company to make the best use in order to produce cost reductions by formulating clear strategy to appropriately exploit those resources. The need to develop the traditional cost systems currently applied in Iraqi companies so that they can provide accurate information that enables appropriate decisions to be made and not to wait until there is a gap between the current systems and the current developments in the contemporary environment, where the traditional systems currently in place have proved unable to keep up with recent developments in the competitive environment. The necessity to depend on scientific concepts, principles and foundations in the design of the cost system so that it may accomplish its desired aims. The researchers urge that the deployment of the resource consumption accounting system should be rolled out in the Iraqi industrial environment as it tackles the concerns of arbitrary allocation of present traditional systems. The researchers urge the necessity to apply tariffs as imported tires in local markets have not been

subject to tariffs as well as not to impose customs charges and taxes that limit their entry and in big numbers and from various buildings. In order to limit the import of the foreign framework and the tendency to buy from locally manufactured tires, the national product protection legislation must be used for the aim of preventing market dumping from imported tires.

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