

## The comparison between Activity Based Costing and Traditional Costing that practiced in Algerian Manufacturing Corporation

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Submitted:20/09/2021

Accepted:05/12/2021

Published:30/12/2021

### Abstract:

This study aims to suggest practice of modern cost technique as an alternative for traditional cost technique.

The manufacturing was calculated the cost using traditional system, which the cost of product, is 542.00 da is more than the cost of ABC system which is 468.892 da. The different is 73.108 da; this amount will effect negative on organization performance, profitability, and enhance competitive position.

The result of calculating the costs it was less accurate to traditional cost accounting system, also traditional costing combines all indirect costs into a single cost pool. The researcher was practiced the ABC in the real manufacturing, It was more accurate, as it resulted in efficiency, accuracy and objectivity of achieved Activity-based Costing purposes which is decreasing costs.

**Key words:** Activity-based Costing, Traditional costing, decrease the costs

**JEL classification:** L06 ; N06; O14;M41

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## **Introduction :**

Activity-based costing (ABC) is a product costing system that allocates indirect costs to products depending on their relative consumption of company resources. Over the last four decades ABC usage has been extended to various service industries as a management accounting tool to monitor and manage business performance (Ermela Bafi, 2014).

Several researchers claim that Activity-Based Costing is efficient in product pricing, cost-cutting strategy, and customer and profitability analysis. For both American and British companies, researchers attributed a highly significant correlation between overall ABC success and the purpose 'Activity Performance Measurement and Improvement'. However, based on adoption rates in the UK and the USA, few companies adopt ABC challenges faced by companies in the implementation are the possible reasons (Merlita & Durana).

Must important these companies to keeping up with technical and technological progress in various production instrument, with correcting and adjusting all traditional systems followed at all levels (traditional management accounting techniques).

In this context, we find that, Algerian manufacturing corporations are steel applied traditional systems, despite of these systems' outputs that not enough to provide information about global cost to management, which leads to mislead the managers then to, makes wrong decisions.

In this study we'll try to practice Activity-based costing technique in manufacturing company for suggestion and claim that ABC is efficient in reducing the costs and the maximize profits.

## 2. Activity-Based Costing definition, principles, advantages, and steps

### 2.1 Activity-Based Costing definition

There are many definitions of ABC which was addressed by several researchers, including the following:

ABC it is a modern approach for cost apply by corporations that have many products to produce. The ABC uses different quantitative and qualitative cost drivers and differentiated between high and low-volume products taking into account the economies of scale (Al-Halabi & Shaqqour, 2017).

ABC is a powerful tool for the an organization to have an accurate and effective cost for its product avoiding cost distortion that may lead sustainable development and growth which is mandatory to be competitive in the era of globalization and complex business environment (Mahal & Hossain, 2015).

ABC is a method for determining true costs; which has become an important aspect of manufacturing/service organization and can be defined as a methodology that measures the cost and performance of activities, resources and cost objects. It can be considered as an alternative method to traditional cost accounting systems (Kumar & Mahto, 2013).

So one could conclude that the Activity-Based Costing method is very important and useful for optimum utilization of existing resources, and it's a method for measuring the cost and performance of activities and cost objects, also use it to find the total cost of activities necessary to make a product, through to reduce distortions caused by arbitrary allotment of indirect costs.

### 2.2 Basic Principles of Activity-Based Costing

The main principle of ABC is that it divides production into core activities, defines costs for those activities, and allocates those costs to products. The Activity-Based Costing

was claimed to provide more accurate cost management by its ability to calculate the true cost of a product.

If companies want to maximize their profits they have options linked to Activity-Based Costing. One option is reducing the costs according to providing more accurate product costs for decisions about pricing and which unprofitable products the company should eliminate. ABC helps managers identify cost-causing activities.

The ABC system emerged to meet the need for accurate information about the cost of resource demands by individual products, services and customers and these system also enable indirect and support expenses to be driven first to activities and processes and then to products, services and customers. In this way managers have obtained a clearer picture of the economics of their operations and could improve their decisions (Cardos & Pete, 2011).

### **2.3 Activity-Based Costing advantages**

- The use of activity based costing system eliminates activities that do not add value to the product and reduce their cost.
- The presence of several cost drivers in the activity-based costing system results give a more accurate measurement of the product and reduces cost.
- The activity based costing system helps to control early activities, reducing unwanted deviations or reducing costs.
- Implementing the activity based costing improves the company's competitive position and maximizes profits.
- The use of activity based costing increases the accuracy and efficiency of product pricing, thus maximizing profitability.
- The application of the activity based costing improves the operational process, regardless of resources and costs, which increase profitability.

## 2.4 The practice steps of Activity-Based Costing

Activity-based costing aims to avoid product costing distortions caused by allocating indirect costs directly to products. Instead ABC allocates overhead costs (Ermela Bufi, 2014). using the following set of procedures:

- a) Identify all activities that consume resources and assign costs to those activities;
- b) Identify the cost drivers associated with each activity;
- c) Compute a cost rate per cost driver unit;
- d) Assign costs to products by multiplying the cost driver rate times the volume of percentage consumed by the product.

**a) Identify all activities that consume resources and assign costs to those activities**

In the first stage is often the most interesting and challenging part of the exercise. This step requires people to understand all of the activities required to make the product. The organization identifies the major activities performed with its resources. These can be machine-related, by a verb accompanied by its associated object, such as: schedule production, assemble products, inspect items, respond to customers, etc. (Ermela, 2014).

**b) Identify the cost drivers associated with each activity:**

A cost driver is an activity or transaction that causes costs to be incurred. For the purchasing materials activity, the cost drivers could be the number of orders, also labor hours and machine hours... Each of these costs is considered a cost driver because of the causal relationship between the base and the related costs: As the cost driver's usage increases, the cost of overhead increases as well.

**c) Compute a cost rate per cost driver unit**

Calculate the cost driver rate by dividing the total overhead in each cost pool by the total cost drivers. Divide the total overhead of each cost pool by the total cost drivers to get the cost driver rate. Multiply the cost driver rate by the number of cost drivers.

- d) The last step is assign costs to products by multiplying the cost driver rate times the volume of percentage that consumed by the product

### 3. The practice of Activity-Based Costing:

In this study we'll try to practice ABC in case study of the biggest Manufacturing Corporation of plastic, located in the industrial zone of Blida province in Algiers.

Plastic products are part of every home, office, hospitals, and industry. Plastic features like durability, unbreakable material, portability, and lightweight quality make it a favorite among all users.

#### Objectives and values of producing plastic Bathroom mirror:

- The very best quality standards
- Innovative products
- Aesthetics

These are the criteria which determine the philosophy and development of Manufacturing Corporation. The consistent implementation of these values into the business strategy of the Manufacturing Corporation has allowed creating a broad and modern range of products and services.

The first part of activity based costing is identifying the products for cost object:

#### 1- Identify direct cost for assigns and direct allocate to activities

Table (1): direct costs for Bathroom mirror

Statement	Quantity	Unit	Unit price (DZ)	Amounts (DZ)
pp polypropylene	1.0659	KG	134.00	142.83
colored	0.0341	KG	291.66	9.95
Mirror box	1	piece	68.00	68.00
Large form sticker	1	piece	16.50	16.50

Screw 4*25	2	piece	0.69	1.38
Plastic dowel	2	piece	0.29	0.57
Mirror	1	piece	169.96	169.96
Direct labor	3	number	10.00	30.00
Total		piece		<b>439.19</b>

**Resource: prepared by the researcher based on the accounting department**

**2- Identify all activities (purchases, production, distribution), each center identify activity and its cost**

**Purchase activity:**

- Orders preparation activity
- Direct materials purchase activity

**Production activity:**

- Order of issuing a product line purchase activity
- Production designing activity
- Examination and control activity
- Maintenance of machinery and equipment activity

**Distribution activity**

- Production distribution activity
- Customer orders receiving activity
- Rent
- General office expenses

**Table (2): identify all activities and its related costs for 2020 January**

<b>Activity center</b>	<b>activities</b>	<b>Cost (DZ)</b>
<b>Purchase</b>	Orders preparation activity	50000.00
	Direct materials purchase activity	120000.00
<b>production</b>	Order of issuing a product line purchase activity	30000.00
	Production designing activity	40000.00
	Examination and control activity	80000.00
	Maintenance of machinery and equipment activity	100000.00
<b>Distribution</b>	Production distribution activity	80000.00
	Customer orders receiving activity	60000.00
	Rent	500000.00
	General office expenses	1000000.00
<b>Total</b>		2060000.00

**Resource: prepared by the researcher based on the accounting department**



3) Identify the cost drivers associated with each activity:

Table (3): Identify cost drivers

Activity center	activities	Cost driver	Drivers number
<b>Purchase</b>	Orders preparation activity	orders number	50
	Direct materials purchase activity	Orders number	30
<b>production</b>	Order of issuing a product line purchase activity	Orders number	35
	Production designing activity	piece number	80
	Examination and control activity	Examination number	60
	Maintenance of machinery and equipment activity	Maintenance number	15
<b>Distribution</b>	Production distribution activity	Orders number	150
	Customer orders receiving activity	Orders number	120
	Rent	Pieces number	80
	General office expenses	Pieces number	150

Resource: prepared by the researcher based on the accounting department

4) Compute a cost rate per cost driver unit

Table (4): grouping activities at cost centers for 2020 January

Cost driver	Cost centers	Cost centers costs
orders number	Orders preparation activity	1880000.00
	Direct materials purchase activity	
	Production distribution activity	
	Customer orders receiving activity	
	Order of issuing a product line purchase activity	
	Production designing activity	
	Rent	
	General office expenses	
Examination number	Examination and control activity	80000.00
Maintenance number	Maintenance of machinery and equipment activity	100000.00
<b>Total</b>		<b>2060000.00</b>

Resource: prepared by the researcher based on the accounting department

Table (5): Compute a cost rate per cost driver unit for 2020 January

Cost centers	Cost centers costs	Drivers number	Driver cost (DZ)
orders number	1880000.00	775	2425.806
Examination number	80000.00	60	1333.33
Maintenance number	100000.00	15	6666.66
<b>Total</b>			<b>10425.796</b>

Resource: prepared by the researcher based on the accounting department

5) Assign costs to product by multiplying the cost driver rate times the volume of percentage that consumed by the product

Table (6): Assign costs to Bathroom mirror product for 2020 January

Cost centers	Driver cost	Percentage	Product costs (monthly)	Number of production (monthly)	Unit product cost (DZ)
Orders number	2425.806	4%	97.032	100	9.7032
Examination number	1333.33	5%	66.666	100	6.666
Maintenance number	6666.66	2%	133.333	100	13.333
<b>total</b>					<b>29.702</b>

Resource: prepared by the researcher based on the accounting department

After calculation indirect costs and allocating to a product, we'll calculate cost price of product according with the following equation:

$$\text{Cost price} = \text{Unit direct costs} + \text{Unit driver cost}$$

$$\text{Cost price} = 439.19 + 29.702$$

$$= 468.892 \text{ DZ}$$

The last table of the Unit Bathroom Mirror Cost calculation, that it provides us information to allow comparison between cost price of Manufacturing Corporation and Activity-Based-Costing.

**Table (7): comparison between cost price of Manufacturing Corporation and Activity-Based-Costing**

Statement	Bathroom Mirror product for year 2020
Cost price for manufacturing Cor.	542.00
Cost price for ABC	468.892

**Resource: prepared by the researcher**

In conclusion of this part, we can say that the Activity Based Costing System plays an effective role in raising the company's performance which the different is 73.108 da this is the benefits of manufacturing, according to allocate indirect costs directly and accurately to products that it decreases distortion costs.

The manufacturing corporation using traditional cost system, there are significant differences between the costs using and ABC system. As a result, traditional costing systems lead to inaccurate calculations of product costs. We advise the corporation to adopt the proposed system.

- The researchers and the accounting department in universities should adopting and applying ABC system and focus on teaching it.

### **Conclusion:**

This study contributes to reducing costs by focusing on value added activities and excluding activities that have no added value, and assists in reducing time and effort using different cost drivers for each activity. The manufacturing was calculated the cost using traditional system, which the cost of product, is 542.00 da is more than the cost of Activity Based Costing which is 468.892 da. The deferent is 73.108 da; this amount will effect negative on organization performance, profitability, and enhance competitive position in the manufacturing corporation.

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researcher was practiced the ABC in the real manufacturing, It was more accurate, as it resulted in efficiency, accuracy and objectivity of achieved Activity-based Costing purposes which is decreasing costs.

The Activity Based Costing concepts are very useful and powerful and when applied in a corporation, are capable of achieving rapid performance, increased profits, efficiency of production and the efficiency of decision making.

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