

# Integration of the system of Activity Based Costing and liability accounting

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## Abstract

The aim of the research is to clarify the concept of cost accounting system on the basis of activities and accountability and then address the problems that hinder the application of integration between them, and the importance of the research is the need for an integrated information system in the organization, which helps economic organizations and system designers achieve integration when designing their own cost systems. In his theoretical study, the researcher relied on previous researches and studies on the subject, in addition to a number of sources of Arabic and foreign books, and he reached conclusions from them that the organization must coordinate the efforts of all workers, starting from the top management to the lowest administrative level in it, and coordinating efforts with the organization means appointing The responsibilities of managers who can be held accountable for their behavior when planning and controlling financial and human resources.

**Keywords:** activity-based accounting, liability accounting.

## INTRODUCTION

Technical development is the basis for the development of human civilization throughout the ages. The history of civilization consists to a large extent from a mutual interaction between two forces that support and control man at the same time: technology and society, and technology plays an important role in the industrialization process. As a result of the increase in technological developments and increased competition, the challenges increase. Faced with cost accounting and administrative accounting, where the technical development had effects on the aspects of public life and productive activities, especially for that. The progress in manufacturing methods was a mirror of that technical development, and if the technical development is in the service of society, then society is a tool for its implementation and activation of all its benefits through it. Production activities were affected by technical development, and the effect returned on cost accounting and management accounting represented by responding to many practices or technologies represented by cost management techniques, especially with regard to cost management techniques (such as production on time, a flashback system, total quality management, cost, management and budget

based on activities Continuous improvement, target cost, value engineering, benchmarking, value theory D and Balanced Scorecard) where both cost accounting and administrative accounting were able to employ these technologies to serve business organizations, especially after the widespread use of advanced and electronically controlled automation and the use of flexible and integrated manufacturing systems leading to the automated factory. Which enables us to say that the modern manufacturing environment affected Cost accounting and managerial accounting in a way that made it respond by employing many of the cost management techniques as new developments, so the research seeks to show the effect of complementarity between these technologies and their interconnection in the service of business organizations. It will focus on the integration of two systems of cost accounting and managerial accounting, the systems of liability accounting and the activities cost system constitute important subsystems in the WIS, as they are supposed to lead to a significant change in the role of cost systems from systems that produce reports and provide historical information to systems that contribute In mapping the future economic organization.

## **RESEARCH METHODOLOGY**

The cost accounting systems represented by the responsibility accounting system and the cost accounting system on the basis of activities constitute important subsystems in the WIS, and systems analysts work to achieve integration between them, because there are many reasons that encourage the achievement of integration, but the responsibility accounting costs system and the activities cost system They are two different systems in terms of objectives, concept of costs, methods of measuring and classifying them, which makes the process of achieving integration between them needs research and study in order to create the logical compatibility between the two systems and the rest of the associated subsystems within the organization such as the technical and financial planning system and the financial accounting system, and the most important problem is that the system Liability accounting focuses on cost centers while the activity accounting system focuses on the cost of the activity. Since the research is considered theoretical research, there are no hypotheses for its selection, and the research is limited to the following hypothesis:

It is possible to achieve integration between the two systems through preparing budgets. In light of modern systems, budgets are prepared on the basis of activities, and budgets are a tool through which responsibility centers can be evaluated by comparing actual performance with planned performance.

## **PREVIOUS STUDIES**

A study (Qasim, 2008) aimed to tackle the problems facing some problems of designing and building a unified integrated information system in the organization in light of the great development in the field of software in general and databases in particular, and then to address the problems that hinder the application of integration between cost accounting of activities and accounting Centers of responsibility, and this research seeks to achieve the following goals:

1. Define liability accounting systems requirements on the database.
2. Determine requirements for database-based cost accounting systems.
3. Identify the benefits and problems of integration between the two systems.
4. Preparing a general framework for achieving complementarity between the two systems.

A study (Okulski, 2000) presented the extent of interconnectedness, organizational changes, and assumptions on which traditional liability accounting is based and how the system of accounting

for activities can be more closely aligned with the requirements of interconnection or integration. On the basis of activities, they redefine responsibility from cost centers to activities.

### **ANALYSIS OF PREVIOUS STUDIES**

The Arab study dealt with the possibility of achieving integration and interdependence through designing a system that connects the two systems through the entrance to systems integration, but the researcher did not explain through his research how to achieve this design through phloggers, diagrams and special drawings to show how to achieve this integration, which is intended by systems analysts, while the study Foreign affairs has focused on considering that activities have replaced the responsibility centers to achieve complementarity between the two systems, and that managers will be responsible for activities instead of responsibility centers.

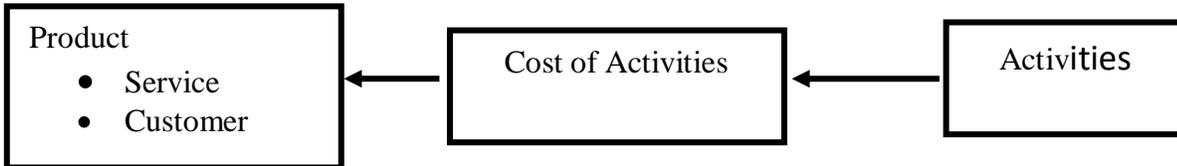
### **ACTIVITY - BASED COSTING SYSTEM**

It was the beginning of the emergence of the ideas of costing method on the basis of 1949, when Geotz defended the principles of this method when he mentioned the following: "Every element or initial group of indirect costs must be related to each dimension of the management problems of planning. And oversight, especially since some of the main dimensions of the indirect costs may change with the change in the number of units produced, the number of orders or the number of operational operations or the number of materials presented. "Either at the beginning of 1960, General Electric used the term activity to clarify the work That causes costs (Drury, 2000,340), where cost systems have been operating in a static environment for a period and with the emergence of modern production systems and the development of manufacturing technology and the intensification of competition and changing tastes, these systems have been unable to provide adequate cost information for strategic decisions, for example the manufacturing decision Mother of purchase, pricing decisions, decisions to determine the formation of products, decisions to differentiate profitability related to products, as it turns out that traditional systems distort the unit cost of a product resulting in misleading pricing decisions that may result in exit from The market and the competition circuit, and a cost system based on the extent to which the product unit benefited from the activity it consumes is known, which is known as the cost system based on activities ABC, and it is thanks to cost engineer Robert Kaplan and his friend Cooper in 1987 in particular. (Mohmaklad.weebly.com) They began to search for an alternative to allocate indirect costs in the traditional way after they raised a number of criticisms of this method and indicated that this method does not have a degree of adequacy and appropriate to determine costs in light of the industrial environment that has developed rapidly, as Robin Cooper was able to develop a new method for allocating indirect costs It is based on the idea of activities and not cost centers (Jubouri,2008)

### **ABC SYSTEM CONCEPT**

The concept of this method is based on the premise that producing products in any economic unit needs this unit to carry out "activities" that require "cost or resources". The idea of the new method is based on the understanding that costs (which cannot be allocated directly to the product) are allocated to the activities that cause them, and therefore it is easy to allocate the costs of each activity to the product or products according to the degree of their expected benefit from that activity. (Al-Jubouri,2008) Hilton defined the system as: "procedures for distributing indirect costs over products according to two steps: The first, determining the necessary activities. The second, distributing indirect costs to them based on the resources of the organization that were used by

those activities.” (Hilton 1999). Since direct costs for orders and products can be easily tracked, ABC system focuses on indirect costs by improving their identification and distribution to departments, processes, products, activities, and other cost purposes. The focus here is on the costs of the individual activities needed to produce each product or service, and the use of these activities as a basis in allocating costs to other cost goals such as products, services, or customers, and this can be illustrated by the figure below. This is done by knowing information about the cost trends that link the occurrence of the activity and the achievement of the cost, and through which it is possible in return to know the exact amount of what each one of the costs or objectives that the activities cost from these activities (Horngren et.al ,2009).



Source; Horngren et .al, 2009, p170

Concept of ABC figure 1.

### **ABC SYSTEM COMPARISON WITH CONVENTIONAL SYSTEMS**

The traditional systems that are still widely used in cost determination are those based on volume, which indirect costs that relate to production services divisions are usually distributed to production divisions, and then to the final product unit. Although there are many advantages arising from the use of traditional methods, they are easy to understand systems that are commonly used, and give accurate results if direct costs constitute a large proportion of production costs. However, the technical development that led to a change in the cost structure, the emergence of mechanization and automation and its replacement by the working person in a manner that led to a decrease in direct labor wages, and the departments 'need for more accurate data to face the growing competition, all called for a review of the traditional methods - which give distorted data. Due to the use of a single basis - used to charge indirect costs and search for other methods that are more accurate, of which the ABC system is one of them. Table (1) illustrates some of the differences between ABC and conventional systems. Among the reasons that lead to deformation of the cost of the product as a result of the application of the traditional alkali methods:

First: Using a single basis for different activities gives inaccurate results in the distribution of indirect industrial costs.

Second: Many of the activities related to indirect industrial costs that use distribution on the basis of a single load rate are multi-structural activities, that is, they are not all classified as activities at the unit level, but rather there are many indirect costs that have to do with the batch, production line, Or the company as a whole. Therefore, shading and distortion occur when all activities are considered to be on the unit level, and other levels of activities are not addressed.

Third: The diversity of products, their difference, and the large difference in their consumption rates from the resources available at the company, and the use of a single cost guide, all of which led to distortions in the allocation of indirect industrial costs (Hilton, 1999). Conventional cost systems use a single cost driver (direct wages or hours of work) as a tool to allocate indirect industrial costs. This may lead to misinformation and inaccuracy, as an increase in cost can be allocated to one product at the expense of other products. A study (Jean and Morrow, 1998) pointed to the reasons for resorting to an activity-based costing system for four reasons:

a) Insufficient accounting practice: whereby cost accounting is designed for the financial accounting service to provide information at the aggregate level to determine the cost of total

production and carry over production for the next period (inventory), as GAAP does not require a causal relationship between indirect industrial costs and individual products as long as the allocation process is carried out fairly and accurately at the aggregate level and meets the requirements of reporting and financial statements. However, this does not mean the inaccuracy of these traditional systems. The results of one of Robert Kaplan's studies showed that there are 45% profitable products, which are mainly products that achieve losses.

b) Change the relative importance of cost components: the production environment changes to the automatic environment other than the cost structure where the direct labor component is between 5% to 15% of the total unit cost of the product, so the direct labor component is no longer the main component of manufacturing cost as it was in an environment Traditional production, and therefore is not considered the appropriate basis for loading in the modern environment, which requires the creation of a system for allocation based on an understanding of cost behavior so that it can be traced to the unit of the product and then attached to the unit of the product, which is available in the ABC system.

c) Increased competition: The increased intensity of competition has led to the necessity for companies to re-price their products and the traditional costs will not provide for this purpose but rather they distort the unit unit cost and therefore companies must take two types of measures through the use of a cost system based on activities to increase profitability, namely:

a. Re-pricing the products so that they raise the prices of the products that consume more activities and reduce the prices of the products that do not consume the same amount, which is achieved by the cost system on the basis of the activity by analyzing the activities and the amount of their consumption of available resources and then knowing the needs of the products from these activities.

B. The administration searches for ways to reduce consumption of resources by changing the product mix or customer line-up or reducing the resources consumed to manufacture the current range of products in the sense of increasing the efficiency of the performance of activities and this may mean re-designing the products to include common components or product stereotyping until the last stage Productivity in the sense of reducing processes of engineering change in product specifications, reducing machinery preparation processes, improving plant equipment arrangement and may mean implementing continuous improvement programs to enhance and increase quality.

The bottom line is that profits can be increased by maintaining the same amount of output while using less volume of resources consumed through activities while reducing spending. Or by increasing the outputs by the same size currently used from both resources and methods.

d) Diversity and difference between products: The diversity of products and the increase in variation in specifications led to the complexity of manufacturing operations, which leads to the difference in activities in terms of size, effort and level of consumption of each product available activities, so it was necessary to resort to the cost system on the basis of activities there is a relationship Causality between products and activities consuming available resources (mohmaklad.weebly.com).

### **ABC System Benefits and Objectives:**

When using the ABC system, the following objectives can be achieved: (Khazraji, 1998)

First: Providing a fair measurement of industrial costs on the basis of cause and effect, i.e. the relationship that causes costs to occur, and not on the basis of the volume of production.

### **STEPS TO PREPARE A FLEXIBLE BUDGET BASED ON ACTIVITIES ABC**

Usually the administration chooses a level of detail that should be provided in the costing system, and that is about assessing the expected costs from applying the costing system, against the expected benefits that will occur from using the outputs of this system in making better decisions, and there are indications that there are potential benefits to be achieved when using a system Determine the cost based on the activity, including:

First: The intrinsic values of the indirect costs are allocated using only one or two complexes of cost.

Second: All or most of the indirect costs are allocated using one or two complexes for the cost only.

Third: The difference in product demand for resources is due to the difference in size, operating steps, and batch size or complexity.

Fourth: The company's well-made and selling products achieve simple profits, while the company's lowest products in this direction achieve great profits.

Fifth: The lack of agreement between the production department and the accounting department administration on what are considered production and marketing costs and after-sales services. (Horngren et al., 2009).

Budgets are prepared on the basis of activities on the basis of determining the energy to be implemented from each activity and then allocates the necessary resources to implement this activity at that level of energy in the coming periods. The process of preparing (ABB) enables management to control costs more effectively, as it enables the administration to convert the greater part of fixed costs to variable costs, because the distinction between fixed costs and variable costs is a matter of administrative decision that determines how much is spent from resources and not related to the nature The resource used, and thus the manager can make decisions related to securing resources during the budget preparation process on the basis of activities and thus all costs that are specific to a particular activity can be considered as variable costs when preparing the budget. (Drury, 2000) ABB (activity - based budgeting), ABB controls to meet the resource need that we need only to perform the activities required to meet production and sales volume, ABB implementation procedures are the opposite of ABC implementation procedures, as ( ABC) distributes resources to activities and then uses activity cost guides to distribute the costs of activities to cost goals, while ABB) the cost goal is the beginning as the outputs of this budget define the necessary activities and then use Work to estimate the resources required during the budget period, Either the steps for implementing ABB can be summarized as follows (Drury, 2000)

- 1- Estimate production and sales volume.
- 2- Estimate the demand for the activities of the organization.
- 3- Defining the resources required to carry out the activities of the organization.
- 4- Estimating the quantity required for each supplier, which must be prepared to meet the demand.
- 5- Taking measures to level the supplier's energy to be in line with the offer (Drury, 2000: 568).

The budget on the basis of activities is a future plan in which the real resources are estimated for what is estimated to perform the activities and that achieves the goals of the economic unit to need more effectively and adequately and it does not differ from the traditional budget except that it is prepared on the basis of activities (Allawi, 2009)

## **RESULTS**

1. The budget is based on activities in which an estimate is made of what is estimated to perform the activities and that achieves the goals of the economic unit for a need that is more effective, efficient and economic.

2. The activities-based cost accounting system can reshape administrative oversight processes by creating a new model in activity-based liability accounting rather than focusing on individual responsibility. Accounting for accountability needs to be revised to include the basis for performance teams.
3. Developing accounting information systems to efficiently measure actual performance in a way that provides the ability to track costs and link them at the individual level to determine the cause and develop mechanisms for linking costs at the level of activities to replace the centers of responsibility.
4. Integration between the responsibility accounting system is formed as a system that serves the objectives of operational control, and the accounting system on the basis of activities serves administrative decisions and thus contributes to many decisions within the economic unit such as decisions to assess the profitability of products and decisions to allocate resources on the basis of different activities
5. The responsibility accounting system is one of the administrative entry points, as it is based on linking the accounting system with the administrative organization of the economic unit and dividing the economic unit into responsibility centers and defining the responsibilities and powers of all those responsible for the responsibility centers through linking the actual and planning rates of the elements of the economic unit to the responsibility centers for the purpose of monitoring and evaluating the performance Those responsible and their responsibility for the outcome of their actions by comparing actual and planned performance.
6. The performance evaluation process is based on a set of principles and principles on which the accountability accounting system is based through an objective measurement of the effectiveness and adequacy of responsibility centers and is strengthened by the accounting system on the basis of activities by providing real indicators of the actual performance of these activities and ensuring that the desired goals of the evaluation process are achieved .
7. The ABC system leads to overcoming the disadvantages of traditional systems, it gives clear and more appropriate information regarding the cost of products and tells us about the failures in the field of performance evaluation because it links the costs of activities to performance using non-financial measures, and also helps in identifying areas of inadequacy in support activities And general activities by changing the perception of the behavior of short-term and variable long-term, which makes it more in line with the principles of accountability.

## CONCLUSIONS

The researcher relied in his theoretical study on previous researches and studies on the subject, in addition to a number of sources of Arabic and foreign books, and he reached conclusions from them that the organization must coordinate the efforts of all workers, starting from the top management to the lowest administrative level in it, and coordinating efforts with the organization means appointing The responsibilities of managers who can be held accountable for their actions when planning and controlling financial and human resources, that every manager who is responsible for the responsibility center and responsibility center is a part or sub-unit of the organization, and the higher the managerial level of the manager the greater the scope of his responsibility that he administers and the greater the number of reports submitted to him From his subordinates, and the responsibility accountability system measures the plans (by budgets) - performance - (with actual results) for each responsibility center, which usually has four responsibility centers.

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