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## **ACTIVITY BASED COSTING: A TOOL FOR DECISION**

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### **ABSTRACT**

A powerful tool for measuring performance, Activity-Based Costing (ABC) is used to identify, describe, assign costs to, and report on agency operations. A more accurate cost management system than traditional cost accounting; ABC identifies opportunities to improve business process effectiveness and efficiency by determining the "true" cost of a product or service. Activity Based Costing is a method for developing cost estimates in which the project is subdivided into discrete, quantifiable activities or a work unit. ABC systems calculate the costs of individual activities and assign costs to cost objects such as products and services on the basis of the activities undertaken to produce each product or services. It accurately identifies sources of profit and loss.

**Keywords:** Activity Based Costing; decision making

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## Introduction

The concepts of ABC were developed in the manufacturing sector of the United States during the 1970s and 1980s. It is a practice in which activities are identified and all related costs of performing them are calculated, providing actual costs chargeable. The focus of activity based costing is activities. Thus identifying activities is a logical first step in designing an activity based costing. An activity is an event, task or unit of work with a specified purpose [1].

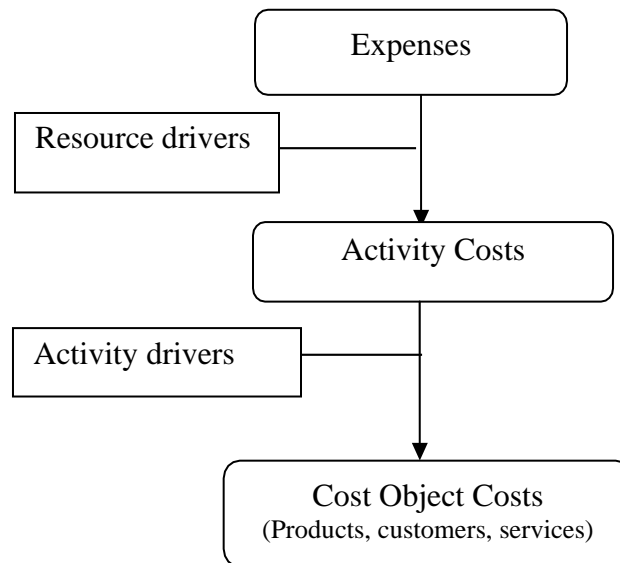
ABC is "a cost attribution to cost units on the basis of benefit received from indirect activities". It is "a method of measuring the cost and performance of activities and cost objects. Assigns cost to activities based on their use of resources and assigns cost to cost objects based on their use of activities; ABC recognizes the causal relationship of cost drivers to activities" [2]. In equation form ABC is:

$$C/A = HD + M + E + S$$

Where; C/A = Estimated cost per activity, H = Number of labor hours required to perform the activity one time, D = Wages per labor hour, M = Material costs required to perform the activity one time, E = Equipment costs to perform the activity one time, S = Subcontracting costs to perform the activity one time.

The total cost for performing the activity will be based on the number of times the activity is performed during a specific time frame. An activity based costing system first traces costs to activities and then to products and other cost objects [3]. Figure 1 explains the basic flow of Activity-Based Costing.

**Figure 1: Basic Flow of Activity-Based Costing**



**Source:** <https://www.fibre2fashion.com/industry-article/2925/activity-based-costing-a-tool-for-decision-making>

### Important Terms in Activity Based Costing

The operation of the ABC system involves the use of the important terms:

**Cost Object:** It refers to an item for which cost measurement is required. For example, a product, a service, or a customer

**Cost Pool:** A cost pool is a term used to indicate grouping of costs incurred on a particular activity which drives them.

**Cost Driver:** A cost driver is any factor or force that causes a change in the cost of activity. Cost driver may be involved two parts: (i) Resource cost driver, and (ii) Activity cost driver.

A resource cost driver is a measure of the quantity of resources consumed by an activity. An activity cost driver is a measure of the frequency and intensity of demand, placed on activities by cost objects. The cost drivers for various functions i.e., production, marketing, research, and developments are given in table 1.

**Table 1: Cost Drivers for Various Functions**

Business functions	Cost driver
Production	Number of units Number of set-ups
Marketing	Number of sales personnel Number of sales orders
Research and development	Number of research projects Personnel hours spend on projects technical complexities of the projects
Customer service	Number of service calls Number of products serviced Hours spend on servicing products

**Source:** <https://www.fibre2fashion.com/industry-article/2925/activity-based-costing-a-tool-for-decision-making>

### Stages of Activity Based Costing

The different stages in ABC system are:

**Identify The Chosen Cost Objects:** The cost objects of any organization are the products or services and the goal is to first calculate the total cost of manufacturing and distributing these products and their unit cost.

**Identify The Different Activities Within the Organization:** After the identification of cost objects, the main activities, which are being performed in the organization, have to be identified. Usually, the number of activities over cost centers in ABC will be much more as compared to traditional overhead system. The exact number will depend on how the management subdivides the organization's activities.

**Identifying The Direct Cost of Products:** The direct cost of products or objects may comprise direct material cost, direct labor cost and direct expenses. Classification of as many of the total costs as direct costs as is economically feasible should be made. It reduces the amount of costs classified as indirect.

**Relating The Overhead to The Activities:** After identifying the organization's activities, the various items of overhead are related to activities both support and primary, that caused them. As a result of relating the items of overhead to various activities, 'cost pool' or 'cost buckets' are created.

**Spreading The Support Activities Across the Primary Activities:** The spreading of support activities (i.e., activities which support or assist manufacturing) across the primary activities (correlated to the number of units produced) is done on some suitable base which reflects the use of support activity. The base is the cost driver and is measured of how the support activities are used.

**Determining The Activity Cost Drivers:** The determination of the activity cost drivers is done in order to relate the overhead collected in cost pools to the cost objects of products. It is done on the basis of the factor that drives the consumption of the activities.

**Calculating The Activity Cost Driver Rates:** The activity cost rates for each activity are calculated in the way in which overhead absorption rates would be calculated under the traditional system.

**Computing The Total Cost of Products or Cost Objects:** The total costs of the products shall be computed by adding all direct and indirect costs assigned to them. The amount of overhead chargeable to a product or cost object shall be calculated by multiplying the activity cost drivers rates by different amounts of each activity that each product or other cost object consumes.

**Traditional Costing and Activity Based Costing:** Traditional costing can lead to under costing or over costing of products or services. Over or under costing of products distorts cost information. A poor quality of cost information causes management to make poor decisions for pricing, product emphasis, make or buy etc. ABC differs from the traditional system only in respect of allocations of overheads or indirect costs [4]. Direct costs are identified with, or assigned to, the cost object, in the same manner as is done in case of traditional costing system. Overhead costs are linked to the cost objects based on activities.

**Activity Based Costing in 1980s and 1990s:** The activity-based costing systems, identify the major activities of a facility's production process and then classify these activities into different categories: unit-level activities; batch-level activities; product-sustaining level activities and; facility-sustaining

level activities [6]. The method of dealing customer cost and product cost separately has led to identifying the profitability of each customer and to position their products or services accordingly.

**Product Profitability:** ABC costs the products based on the activities that goes into it. This facilitates arriving at the accurate cost of the products and enhances effective strategic decisions to: Position their products better; Facilitate better Product mix for the market; Enhance the bargaining power with the customer; and Process Efficiency.

ABC implementation will make the employees, across functions, to understand the various costs involved, which will in turn enable them to analyze the Cost, identify the Value Added and Non-Value-Added Activities [7], and implement the improvements and realize the benefit. This is a continuous improvement process in terms of analyzing the cost, to reduce or eliminate the Non-Value-Added activities and to achieve an overall efficiency.

**ABC and Healthcare:** More and more, healthcare enterprises are finding that their accounting systems do not provide useful operations management information. In their quest to reduce costs and develop an advantaged marketplace position, healthcare providers are discovering ABC. It offers an approach and the type of information required to realize performance breakthroughs:

It recognizes that cost and quality are the direct result of the activities providers undertake to deliver services to their patients [8]. It is business-process and end-product focused, and invites cooperation, rather than competition, between functional departments. Activity-based cost information is both intuitive and logical. In short, it makes sense to those charged with the responsibility for improving performance and provides them with transparent information on the cost ramifications of their decisions.

**Table 2: Simple Allocation of Call-Center Overhead**

	Total	Store	Catalog	Internet
Revenue	\$3,500,000	\$2,000,000	\$1,000,000	\$500,000
Number of Customers	50,000	35,000	10,000	5,000
Cost per Customer	\$10	\$10	\$10	\$10
Call-Center Costs	\$500,000	\$350,000	\$100,000	\$50,000
Net Revenue	\$3,000,000	\$1,650,000	\$900,000	\$450,000
Margin	85.7%	82.5%	90.0%	90.0%

Source: [www.cxoamerica.com](http://www.cxoamerica.com)

**Activity Based Costing: A Decision-Making Tool:** Prior to the emergence of ABC, companies typically calculated profitability using the allocation method. This allocation method involves allocating costs to a product or customer using metrics such as the total number of accounts, customers, products produced, or transactions. Table 2 gives an example of how this method calculates the profitability of three customer channels: store, catalog, and internet. In this example, the company allocates overhead costs including accounting, IT, marketing, and call-center costs; to customer channels, based on the number of customers per channel.

Table 2 concludes that all channels are performing relatively well, but the big opportunity lies in growing the catalog and internet channels through additional investments. These two channels; though smaller in overall revenue appear more attractive after cost allocations and could realize explosive, profitable growth, given management attention and aggressive investments.

Table 3 shows the more realistic outcome when an organization applies ABC and apportions call center expenses to each customer channel, based on the number of incoming calls each channel generates. Since catalog customers create 80% of the incoming call-center volume, this channel should incur a greater proportion of the total cost.

**Table 3: ABC Allocation of Call-Center Overhead**

	Total	Store	Catalog	Internet
Revenue	\$3,500,000	\$2,000,000	\$1,000,000	\$500,000
Number of Calls	100,000	0	80,000	20,000
Cost Per Call	5	5	5	5
Call-Center Costs	\$500,000	\$0	\$400,000	\$100,000
Net Revenue	\$3,000,000	\$2,000,000	\$600,000	\$400,000
Margin	85.7%	100%	60.0%	80%

Source: [www.cxoamerica.com](http://www.cxoamerica.com)

### Software Packages for ABC

**ABC Focus:** It is a tool for costing products and services and improving efficiencies. "ABC Focus is a tool which makes ABC concepts simple to understand and use. It is a very attractive package because its flexible costing model, consolidated reporting and a very competitive pricing regime make it suitable for large and small business in virtually any industry" [5]. ABC Focus provides a structured approach to cost products, services, processes, activities and unused capacity [9]. It provides a platform on which to confidently adjust pricing and activities for competitive advantage.

**QPR Cost Control:** The user-friendly QPR Cost Control system helps to understand the real cost structure of the company and identify how the business really works. Using the proven approach Activity Based Costing/Management, the software identifies exactly what costs are linked to each individual customer, product, service or activity. QPR Cost Control gives the information to make decisions about the most profitable path for the business [10]. QPR Cost Control is used successfully by all types of organizations, from large international corporations to universities, hospitals and government agencies.

**Growing Interest in Activity Based Costing:** Activity based costing is being implemented by a growing number of companies around the globe. Specific ABC applications vary from organization to organization. A few organizations use ABC as their basic, ongoing cost accounting system. But many ABC applications are selective- special studies within subparts of the organization, such as business divisions or particular functions [11].



**Cost Of Buying, Implementing and Maintaining Activity Based System:** In some cases, the establishment of cause-and-effect relationship between cost driver and costs not is a simple affair. ABC does not conform to generally accepted accounting principles in some areas.

### Conclusion

Activity based costing has revolutionized product costing, planning, and forecasting in the last decade. It is based on a philosophy of estimation that it is better to be approximately right, than precisely wrong. In summary, activity-based costing is a management decision-making tool. It provides financial support data structured in a fashion fundamentally different from accounting data provided in the general ledger. By associating cost to the activity, a clear relationship can be established between sources of activity demand and the related costs. This association can benefit the distributor in determining where costs are being incurred, what is initiating the costs and where to apply efforts to curb inflationary costs. This can be of particular value in tracking new products or customers.

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