International Journal of Religion
2024
Volume: 5| Number 10 | pp. 2054 – 2069
ISSN: 2633-352X (Print) | ISSN: 2633-3538 (Online)
ijor.co.uk
DOI: https://doi.org/10.61707/r9xmrs04

The Cost Calculation Method Based on Activity Is Known as The Activity-Based Costing (ABC) Method

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Abstract

This paper provides a detailed explanation of the activity-based costing method, which is a precise approach for determining and allocating costs in final products. Firms typically do not implement the activity-based costing method due to the need for specialised training and increased fees. Consequently, many companies opt not to utilise this method for product costing. The study addressed the challenges encountered during the implementation of the activity-based costing method. The study also outlines the necessary steps for a fair implementation and highlights the advantages of this method over the traditional method of product costing. Furthermore, it explores how the enterprise's expansion reveals the absorption of certain costs not allocated to products.

Keywords: *Costing 1, Marketing 2, Menagers 3, Managerial Accounting 4, Costs Abc Methods 5*

INTRODUCTION

The free market economy is unforgiving and characterized by significant risk. Global markets constantly seek important information, investing significant resources to ensure optimal decision-making and profitability for their organizations. Currently, companies engage in open competition by developing new products and exploring new geographic areas to expand their operations and gain a competitive edge in the market. Marketing managers employ several strategies to attain the company's goals, which typically results in an increase in the range of expenses.

Enterprises today face the primary challenge of entering the market at a lower price point while maintaining superior quality. This necessitates a thorough examination of the expenses associated with the entire production process, from inception to the finished product, and spreading these costs in the most reasonable manner possible.

This research will focus on several costing approaches and their specialised applications.

People widely regard the ABC activity-based costing method as a highly precise way to determine product costs, make strategic decisions for the company, gain a better understanding of organisational operations, and allocate expenses.

The subsequent chapters will provide a detailed explanation of the ABC method, using specific examples. We will compare the accuracy levels of the traditional system and the activity-based system. We will discuss the advantages and disadvantages of both methods, along with potential implementation challenges. Ultimately, we will determine which method is most effective in classifying costs and allocating them to products.

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MATERIALS AND METHODS

The ABC method determines the cost based on the activity.

Despite its age of almost 75 years, several organizations continue to use the standard costing system to assess the value of inventories for financial statements and administrative purposes. Despite the reporting benefits of financial statements, including their simplicity, consistency, and auditors' ease of understanding, they often prove to be ineffective or even misleading in supporting effective managerial decision-making.

Why is this accurate? This calculation typically targets companies that have:

Products that share the same characteristics and quality

Direct costs significantly exceed indirect costs.

There are limited opportunities to collect data and information.

Inexpensive 'below the line'

When examining contemporary companies, it is evident that they possess:

Diverse and intricate range of products and services,

Significant overhead expenditures in relation to direct labour.

Data redundancy refers to the unnecessary duplication of data in a system.

Indirect expenses that are unrelated to the products and impact the product's cost, distribution channels, and consumer profitability.

Traditional cost accounting is frequently integrated with the general ledger system of financial accounting to meet financial reporting obligations. Essentially, this connection is founded on the distribution of expenses. Moreover, expenses are assigned for the purpose of assessment (e.g., for financial statements intended for external use) or for the purpose of decision-making (e.g., internal users) or both simultaneously.

The conventional method of cost allocation involves three fundamental steps:

In the process of aggregating costs within either the productive or non-productive department,

In the allocation of costs from the non-productive department to the productive department, and

In the allocation of adjusted costs from the production department to various products, services, or consumers.

The costs obtained from this conventional allocation method are plagued by many shortcomings, leading to inaccurate costs for the purpose of decision-making. As an illustration, the conventional method assigns expenses from unused resources to certain items.

Consequently, these products are encumbered by unused resources. To rectify this distortion, numerous organisations have used an alternative cost distribution strategy known as the Activity-Based Costing (ABC) method. The ABC approach originated in the US manufacturing sector throughout the 1970s and 1980s. During this period, the Consortium for Advanced Manufacturing (CAM) was established.

Activity-based costing (ABC) is a technique used to measure costs and performance of activities and cost items. It involves allocating costs to activities based on their usage.

The activity-based costing method is a paradigm that is grounded in the principle that costs in an enterprise are not created by products, but rather by the activities performed in the production, logistics, marketing, sales, and other areas of the enterprise. The activities require specific resources, which incur costs. These expenses are allocated to individual products to assess the level of assistance each product has received from the activities. These activities are sometimes referred to as cost drivers.

Comparison between the traditional accounting system and the Activity-Based Costing (ABC) technique

The cost calculation method based on activity is known as the Activity-Based Costing (ABC) method

In the context of manufacturing enterprises, the traditional accounting method alone calculates the expenses associated with production on a per-product basis. Identifying direct material and labour costs is not a significant challenge, as these costs can be readily associated with cost carriers (products/services), allowing for a meticulous record of these expenses. A more intricate issue arose in establishing the correlation between the overall indirect expenses and various carriers, as it is challenging to ascertain which carrier they are specifically attributed to. Various approaches can be employed for this task; nevertheless, the reliability of their identification cannot be assured.

Comparison between the traditional approach and the Activity-Based Costing (ABC) technique

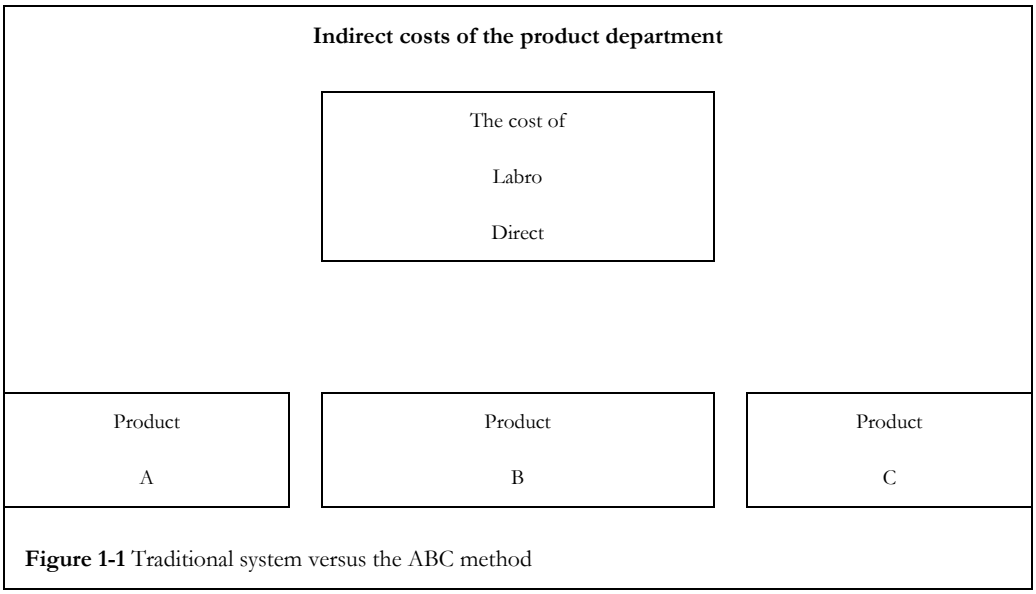

Figure 1-1 Traditional system versus the ABC method

The ABC technique differs from typical cost accounting systems in that it initially aggregates indirect costs for each organisational activity and then allocates them to products or services (cost objects) based on the activities that created them. The most crucial element of the ABC technique is activity analysis, which involves determining suitable measures of activity outputs and resources (cost drivers), as well as their impact on incurred costs for the production of the product or service. Put simply, activity analysis helps to rectify the inherent inaccuracies seen in conventional cost accounting systems.

Typically, the conventional cost accounting system accurately quantifies the actual expenses associated with a product or service, such as materials and labor. The ABC technique prioritises the implementation of indirect costs, such as general production, sales, and administrative expenses. The ABC technique's main goal is to reclassify the majority of indirect costs, if not all, as direct costs. This categorization has resulted in a significant improvement in cost calculation accuracy.

The ABC technique's implementation consists of six fundamental steps:

The process involves identifying and defining the activity and its group.

Calculation of costs associated with each individual task.

Calculate the expenses for each group (combined activity costs).

Activity level calculation involves determining the level of activity in a given process or operation.

The determination of costs in cost objects takes into account activity levels and the previously established activity amount.

compiling and disseminating managerial reports.

"Ege" L.L.C. uses a conventional costing system.

	Windows	Doors
Selling price per unit	€144,00	€200,00
Minus: manufacturing cost per unit		
Direct material	102,85	143,06
Direct work	14,28	28,57
Indirect manufacturing cost	13,64	14,93
Gross profit per unit	€13,32	€13,44

The ABC method's implementation has the following steps, which we will demonstrate using this example:

Plastic doors and windows are manufactured by Ege L.L.C. Currently, the company employs a straightforward approach to calculate indirect expenses based on the rate per order. Meanwhile, Kompasnia manufactures 7,000 units of windows and 700 doors using plastic materials. What is the aggregate labour expenditure for each product unit, considering the following factors?

7.000 unit × 144€ =1.008.000,00€ (window)
700 unit × 200€ = 14.000,00€
(doors). Total selling value = 1.022.000,00€

	WINDOW		DOORS	
Direct material	€ 720.000		Direct material	€ 100.142 Direct
manufacturing labor	100.000		Direct labor and production	20.000 Total direct costs €
	820.000		Total direct costs	€ 120.142
Direct cost per unit:			**Direct cost per unit:**	
€ 820.000/7.000 = € 117,13			**€ 120.142/700 = € 171,63**	

If the company produces 7,000 windows and 700 doors, what is the labour cost per unit of product?

7.000 unit × 14,28 € = 99.960,00 (window)

700 unit × 28,57€ = 19.999,00 (doors).

What are the total indirect manufacturing costs for each product?

7.000 × 13.64 € = 95.480,00 € (window),
700 × 14.93 € = 10.451,00 € (doors).
Total = 105.931,00 €

"Ege" L.L.C. allocates indirect costs to windows at a rate that is 10 times higher than the allocation to doors.

The implementation of the Activity-Based Costing (ABC) method requires the allocation of indirect costs based on the relevant stages.

Departmental activities are being identified.

The department is responsible for preparing tasks or materials.

The processing section

The assembly department

Calculate the total indirect expenses related to each activity.

Jobs	50,000.00 €
Depreciation	20,000.00

Others	25,949.00
In total	95,949.00 €

Identifying the main factors that contribute to the costs of each indirect activity:

1) (2) (3)

Activity	Estimated costs	Cost drivers
Preparation	60.000 €	∑ of blocks
Processing	30.000	∑ of hoursOM)
Mounting	15.949	∑ of products

The process involves quantifying the aggregate quantity of each distribution basis:

(1) (4)

Activity	Estimating amount of cost drivers
Preparations	4.000 blocks
Processing	1.925 car watch (OM)
Mounting	7.700 products

The process involves calculating the distribution level for each activity:

(1) (5)

Activity	Level of distribution of costs
Preparations	60.000€ ÷ 4.000 = 15,00 €/ blocks
Processing	30.000 ÷ 1.925 = 15,584 €/ car watch OM
Mounting	15.949 ÷ 7.700 = 2,0713 €/ products

Ensuring the precise quantity allocated to each distribution base for every product:

Throughout the year, the company manufactures a total of 7,000 windows and 700 doors, resulting in a ratio of 10 to 1. Therefore, in this scenario, the quantities of semi-finished and unassembled items, as well as machine hours, are determined by a ratio of 10⁄1. We refer to these quantities as blocks or lots.

Preparation:

3.600 window blocks × 15,00€ = 54.000,00 €
400 door blocks × 15,00€ = 6.000,00 €
in total: = 60.000,00 €

Processing:

1.732,50 car watch (OM) × 15,584 €= 27.000,00 €
195,50 car watch (OM) × 15,584 € =3.000,00 €
in total: = 15.949,00 €

Mounting:

7.000 products × 2,0713 € = 14.499,00€
700 products× 2,0713 € = 1.450,00€
in total: = 15.949,00€

Cost allocation to individual products:

Activity	Propulsion units of used costs for:		Costs distributed to:	
Window	**Doors**	**Window**		**Doors**
Preparation	3.600 blocks	600 blocks	€54.000	€ 6.000
Processing	1.732,50 M.H	192,50 M H	27.000	3.000
Mounting	7.000 output	700 output	14.499	1.450
in total:	€ 95.499	€10.450		

Distribution of Combined Expenses

The ABC technique allocates ten times more indirect manufacturing expenses to windows than to doors.

95.499,00 €/7.000 piece of window = 13,643 €

10.450,00 €/ 700 piece of door = 14,929 €

RESULTS

Organizations have been using departmental and factory rates for many years, and they will continue to do so successfully. However, in certain settings, they may not perform well and can potentially disrupt production costs. Indirect expenses should be a substantial proportion of the overall production costs. For certain producers, indirect expenses make up a significant proportion of total production costs. Certain producers consider indirect costs to be of minimal significance, constituting a tiny proportion (e.g., 5% or less), and their allocation method is not a significant concern. In this scenario, employing a straightforward illustration and opting for the least intricate approach, such as adhering to the standard procedure commonly used in factories, may prove to be the most appropriate course of action. However, two main issues can prevent proper charging of department and factory indirect costs, if indirect costs constitute a substantial portion of the overall production costs: (1) the significant ratio of non-unit-tied indirect costs to the total costs of indirect expenses, and (2) the substantial level of production diversity.

Unallocated Indirect Expenses per Unit

Both the factory rate and the department rate assume a strong correlation between the product's use of indirect cost resources and the number of units produced. What if there are indirect cost activities that are unrelated to the production volume? For instance, we accrue setup costs each time we manufacture a batch of products. A batch can comprise either 1,000 or 10,000 units, and the setup cost remains constant. As the number of configurations increases, organizations' expenditures also rise significantly. The number of organizations determines the cost of organization, not the number of units produced. Additionally, the quantity of distinct engineering work orders may influence the expenses associated with product engineering more than the number of units manufactured for a specific product. Both of these examples demonstrate the presence of drivers that are not associated with specific units. Unconnected variables are not units; rather, they are factors.

Others that quantify the level of demand that cost objects experience during their functioning. As a result, unit-level drivers are unable to precisely allocate these expenses to products. Using solely unit-level drivers to allocate unrelated indirect costs to units can result in distorted product costs. The extent of distortion is contingent upon the ratio of unrelated unit costs to the overall indirect costs. For numerous organisations, this percentage can be substantial, surpassing 40% or even 50% of the overall amount. It is evident that when this percentage drops, the level of acceptance for employing unit-based incentive variables to determine charging charges increases.

Variety of Products

Significant non-unit indirect costs will not cause product cost distortions if the amount of non-unit indirect cost activities used by products is equal to the amount of unit-level indirect cost activities used by products.

The cost calculation method based on activity is known as the Activity-Based Costing (ABC) method

However, a wide range of products might lead to distorted costs. Product variety refers to the varying quantities in which products utilise indirect cost activities. Product diversity is caused by variations in product dimensions, product complexity, time allocation, and group magnitude. A product consumes a certain proportion of each activity, known as the rate of consumption. An example is the most effective approach to demonstrating how non-unit indirect costs and a variety of products can result in skewed product costs when just unit-level drivers are used to allocate indirect costs.

This scenario demonstrates the inadequacy of unit-based indirect cost rates.

To demonstrate the inadequacy of factory and department standards, we will examine the case of "EgE" L.L.C., a single-factory enterprise that specializes in the production of two types of birthday cards: flavoured and regular. Opening the cards releases a delightful fragrance. Both departments The production steps involve cutting and printing. The process of shaping the cards involves manipulating and altering their structure, while the process of designing and writing involves creating the visual and textual elements, including determining the aroma for scented cards. Table 2-1 displays the cost data for the anticipated product. Units are packages of twelve postcards each. Given that the production amount of ordinary postcards is tenfold higher than that of flavoured postcards, we can classify regular postcards as a high-volume product and flavoured postcards as a low-volume commodity. Postcards are manufactured in batches.

For simplicity, we will consider only four categories of indirect cost activities carried out by four support departments: equipment organization for each team, manufacturing, inspection, and group mobility. Every box containing 12 postcards is inspected after each department's tasks have been completed. Following the cutting process, each postcard box undergoes an independent inspection to ensure it conforms to the desired shape. Following the printing process, each postcard box undergoes a meticulous inspection to verify the accuracy of the writing, the absence of stains, and the absence of any odours, among other criteria. The direct technique allocates indirect overhead costs to the two manufacturing departments. Each department allocates organisation costs based on the number of operations it conducts. Because the number is the same, each department bears 50% of the organization's overall costs. Each department allocates machine expenses based on the number of machine hours it uses. The cost of an inspection is directly proportional to the number of hours spent on it. Each department uses the same number of movements to allocate material movement costs.

The indirect factory overhead rate refers to the proportion of indirect costs incurred in the production process.

The factory's aggregate indirect expenses amount to €720,000, which is the combined total of the indirect costs for each department (€216,000 + €504,000). We assume that direct labour hours serve as the primary component for determining units of activity. We determine the rate of indirect expenses by dividing the total indirect expenses by the number of direct working hours.

We calculate the factory rate by dividing €720,000 by 180,000 direct labour hours.

= €4.00 per direct labour hour

Table 2-2 computes and displays the unit costs for each product using the factory rate and additional data from Table 2-1. Prime expenditures are allocated based on first-hand observation.

TABLE 2-1	Product cost data		
	Flavored postcards	Regular postcards	Total

Units produced per year ……..		20,000	200,000	---
Primary costs ……..		€160,000	€1,500,000	€1,666,000 Direct
labor hours..		20,000	160,000	180,000
Number of organizations ……..		60	40	100
Machine hours ……...		10,000	80,000	90,000
Hours of inspection ……		2,000	16,000	18,000
Number of moves …….		180	120	300
		Department details		
		Dept. of cutting	dep. of the press	Total
Direct labor hours:				
Flavored postcards ……...		10,000	10,000	20,000
Regular postcards ……		150,000	10,000	160,000
Total……..	160,000		20,000	180,000
Machine hours:				
Flavored postcards …….		2,000	8,000	10,000
Regular postcards ……..		8,000	72,000	80,000
Total……..	10,000		80,000	90,000
Indirect expenditure costs:				
Organizational equipment ……..		€120,000	€120,000	€240,000
Movement of materials ……		60,000	60,000	120,000
The machines ……..		20,000	180,000	200,000
Inspection of products ……		16,000	144,000	160,000
Total……..	€216,000	€504,000	€720,000	

Table 2-2 Unit cost calculation: factory rate

	Card. flavoring	Card. route
Primary costs ……..	€160,000	€1,500,000 Indirect
expenditure costs:		
€4.00×20,000……...	80,000	
€4.00×160,000…….		640,000
Total production costs ……..	€240,000	€2,140,000 Production
units ……	/20,000	/200,000 Unit costs
……..	€12,00	€10,70

Rate Information for the Department

Table 2-1 shows that the cutting department relies heavily on labour, while the printing section relies heavily on machines. Additionally, the cutting department's overhead costs amount to about 43% of the overhead costs incurred by the printing department. These data demonstrate that the departmental overhead rates are a more accurate reflection of the consumption of indirect expenses compared to the factory rate. If this statement holds true, it would improve the accuracy of product costs. If we use direct labour hours for the cutting department and machine hours for the printing department, the resulting department rates would look like this:

Cutting department rate = €216,000 / 160,000 direct labour hours

= €1.35 per direct labour hour. Printing department rates = €504,000 / 80,000 machine hours.

= €6.30 per machine hour

Figure 2-3 shows the calculation of unit costs for each product using departmental rates and data from Table 2-1. We charge primary costs through direct observation.

Table 2-3 Unit cost calculation: department rate

The cost calculation method based on activity is known as the Activity-Based Costing (ABC) method

	flavored	Regular	Primary
costs …….	€ 160,000	€ 1,500,000	Indirect expenditure
costs:			
[(€1.35×10,000)+(€6.30×8,000)] …….	63,900		
[(€1.35×150,000)+(€6.30×72,000)]……..		656,100	
Total production costs …….	€ 223,900	€ 2,156,100	
Production units …….	/ 20,000	/200,000	Unit cost
……..	€ 11.20*	€10.78*	

* approximated to the closest value

There Are Issues With The Precision Of Cost Estimation.

We can demonstrate the validity of overhead costing regardless of whether we use the factory or departmental rate. The primary issue with either technique lies in the assumption that machine hours or direct labour hours are the exclusive factors responsible for all indirect overhead costs. Table 2-1 shows that producing ordinary postcards in large quantities requires eight times more direct labour hours than producing flavoured postcards in smaller quantities (160,000 hours versus 20,000 hours). Thus, utilising the factory rate will result in plain postcards incurring eight times greater indirect expenses compared to flavoured postcards. However, does this adhere to the principles of logic? Do unit-of-activity drivers account for the consumption of all indirect-cost activities? Can we infer that the consumption of indirect expenses for each product increases directly with the utilisation of direct labour hours? Let's examine the four indirect spending activities and determine whether the unit-based drivers adequately represent the demand for ordinary and flavoured cards for indirect resources.

Allocating machinery and inspection expenses at the unit level is crucial, as it aligns with the resources used for each produced unit or postcard. It is important to note that the inspection cost is 100%. Therefore, the allocation of these expenses requires the utilisation of direct labour hours.

It appears to be more rational. However, Table 2-1's information shows that the number of units produced, as measured by direct labour hours, neither influences nor triggers certain indirect expenses. For instance, the number of manufacturing runs and the frequency of moves closely correlate with the demand for each product in an organization's activities and the flow of materials. These non-unit-specific operations account for 50% (€360,000 to €720,000) of the overall costs, which is a significant proportion. It is important to note that the low-volume product, which are postcards with flavors, has a circulation that is 1.5 times greater than standard postcards (60/40) and 1.5 times more movements (180/120). Nevertheless, the use of direct labor hours, which is a metric based on units, results in ordinary cards incurring setup and material handling expenses that are eight times higher than those of flavored cards. Consequently, due to the variation in the consumption of indirect costs between unit-related and non-unit-related expenses, we might anticipate a distortion in the cost of products while having a wide range of products available. Tables 2-4 display the consumption ratios for two goods. A product's consumption rates indicate the relative amount of each activity it consumes. The consumption rates suggest that an increase in the cost of regular cards and a decrease in the cost of flavoured cards will result from the factory's production rate, measured in direct labour hours.

Table 2-4 Product diversity: consumption ratios

Indirect cost activity	Consumption reports flavored	Regular	triggering factor
Organization	0.60[a]	0.40[a]	Titration of the production
Material movement	0.60[b]	0.40[b]	Number of moves
The machines	0.11[c]*	0.89[c]*	Machine hours
Inspection	0.11[d]*	0.89[d]*	Hours of inspection

60/100 (flavored) and 40/100 (regular).

180/300 (flavored) and 120/300 (regular).

10,000/90,000 (flavored) and 80,000/90,000 (regular).

2,000/18,000 (flavored) and 16,000/18,000 (regular). * Rounded

Using departmental rates further intensifies the issue. In the die-cutting sector, ordinary cards need 15 times as many direct labour hours as flavoured cards (150,000⁄10,000). Regular postcards require nine times the number of machine hours compared to flavored postcards in the printing department (72,000 ÷ 8,000).

Regular cards incur 15 times more indirect expenses than flavored cards in the cutting department, and nine times more indirect costs in the printing department. According to Table 2-3, the department rates indicate that the cost of flavoured postcards drops by €0.80 to €11.20 per unit, while the cost of normal postcards increases by €0.80 to €10.78 per unit. This shift is a clear indication that unit-based activity drivers are inadequate in effectively representing the demand for each product, the cost of the organisation, and the movement of resources.

Proposed Solution: Addressing Activity Rates

To address the distortions generated by unit-level rates, the most effective approach is to increase the number of rates used. This will ensure that the rates accurately represent the current consumption of indirect costs by various items. We determine rates for each specific indirect cost activity, rather than categorizing indirect costs into the factory or department group. Random variables determine the rates by quantifying the consumption of related or unrelated activity drivers per unit. We computed the respective rates for each activity using this approach and the data provided in Table 2-1:

Organisation of equipment: €240,000 / 100 organisations = €2,400 per organisation

Machinery: €200,000 / 90,000 machine hours = €2.22* per machine hour Inspection: €160,000 / 18,000 inspection hours = €8.89 per inspection hour Material movement: €120,000 / 300 movements = €400 per movement.

We determine the costs allocated to each product by multiplying the activity rates by the quantity of resources used for each activity, as determined by the activity's driving factor. The table labelled 2–5 displays the unit costs calculated using activity rates.

Table 2-5 Unit cost calculation: activity rates

	Flavored	Regular
Primary costs …….	€160,000	€1,500,000
Indirect expenditure costs:		
Organization:		
€2,400×60…….	144,000	
€2,400×40……..		96,000
The machines:		
€2.22×10,000……..	22,200	
€2.22×80,000……..		177,600
Inspection:		
€8.89×2,000……...	17,780	
€8.89×16,000…….		142,240
Movement of materials:		
€400×180…….	72,000	
€400×120……		48,000
Total production costs …….	€415,980	€1,963,840
Production units ……..	/20,000	/200,000
Unit costs ……..	$20.80*	$9.82*

An Analysis of Several Product Costing Methodologies

Table 2-6 presents a comparison between unit costs derived from activity-based costing and unit costs generated from function-based costing methods, such as the factory rate or the department rate. This comparison clearly demonstrates the impact of exclusively using the unit-based activity driver for allocating indirect expenses. Activity-based costing enhances the consumption model of indirect costs, making it more

precise. Out of the three expenses displayed in Tables 2–6, Function-based costs underestimate the expenses associated with flavoured postcards and overestimate the expenses associated with normal postcards. ABC pricing raises the price of flavoured postcards by a minimum of €8.80 per box and lowers the price of normal postcards by a minimum of €0.88. Thus, when non-unit overhead costs and product variety are present, relying solely on the unit-based activity driver can result in one product subsidising another (ordinary postcards subsidising flavoured ones). This subsidy may give the perception that a certain category of products is more financially advantageous, and it could have a negative impact on the pricing and competitiveness of another category of products. Accurate cost information is crucial for effective planning and decision-making in a highly competitive industry.

Table 2-6 Comparison of unit costs

	Flavored postcards	regular	Source
Activity-based costs	€20.80	€9.82	Figure 4-6
Function-based costing:			
Factory rate ……..	12.00	10.70	Figure 4-3
Department rate …….	11.20	10.78	Figure 4-4

Users of the ABC System

The "EgE" L.L.C. case study provides insight into the practical application of ABC in a corporation. Initially, a diverse range of products is required. ABC does not enhance product cost accuracy for a single product organisation. Additionally, it is imperative that we possess a diverse range of merchandise. If the products utilise unrelated unit-level activities in the same proportion as unit-level activities, then the allocation under ABC will be equivalent to the function-based charges. Furthermore, it is essential that a substantial proportion of the product's cost be made up of unit-level, unrelated indirect expenses.

If not, the loading method becomes insignificant. Thus, companies with multi-product plants, a wide range of products, and unconnected unit-level indirect costs are suitable for implementing the Activity-Based Costing (ABC) methodology.

We examined this concept in a research study. Out of the companies that were examined, 49% have adopted activity-based costing (ABC). When comparing firms that had implemented a certain action to those that had not, researchers discovered that the former reported a greater likelihood of incurring costs that cannot be recovered and a higher proportion of costs that are not directly related to production, represented as a percentage of the total production costs. Companies that

I employed ABC and conveyed an increased need for accurate data to aid in decision-making.

Activity-Based Costing System

The Goodmark company's example demonstrates that primary expenses are allocated in a similar manner to activity-based and function-based costs.

The example also demonstrates that the entire sum of overhead costs is incurred regardless of the method used. Nevertheless, the price assigned to each item may differ based on the employed technique. The idea behind activity-based costing is to allocate expenses based on how products consume resources. If this statement is valid, then activity-based costing should provide more precise product costs when there is a wide range of products, as unit-based drivers are unable to fully capture the complete pattern of product use. Although the statement is accurate, it is important to note that we are discussing varying degrees of grouping. If we opt for the factory cost group due to a lack of product diversity, we need to determine the cost of indirect resources from the general ledger accounts. These resources include depreciation, wages, utilities, rent, and other related expenses. In contrast, the departmental cost pool requires a higher level of specificity and reduced consolidation, as it allows for the allocation of costs to individual production departments. Action-based costing necessitates a higher level of specificity and a lower level of consolidation, as it requires the identification of each individual action and its associated expenses.

Table 3-1 demonstrates the process of an activity-based costing (ABC) system, which involves tracing costs to activities and subsequently to products and other cost objects. The fundamental premise is that activities utilise resources, while products and other cost items utilise operations. Table 3-2 outlines the six fundamental steps involved in the ABC system design.

Table 3-1 **Activity-based costing model**

Resource costs
↓
Charged costs perm observation of the trigger and direct factor
↓
Activities
Costs incurred through incentive activities
↓
Products

Table 3-2 **Steps in designing an ABC system**

1. Identification, definition and classification of activities and key properties.
2. Loading the cost of activity resources.
3. Charging the cost of secondary and primary activities.
4. Identification of cost objects and specification of the amount for each activity consumed by specific cost objects.
5. Calculation of primary activity rates.
6. Loading of activity costs to cost objects.

The Process Involves Identifying, Characterizing, and Categorizing the Activity.

The initial and essential stage in developing an activity-based costing system is to identify the activities involved. Activities are actions or tasks that individuals or technology perform on behalf of others. Identifying an activity involves providing a description of the action that is being performed, typically using an action verb or an object that is affected by the action. For most organizations, a basic inventory of activities would typically include more than 12 (and it is not uncommon for this number to range from 200 to 330).

Definition of Activity

Once we create the activity list, we use the activity attributes to determine the activities' characteristics. Activity attributes refer to both financial and non-financial data that provide a description of individual activities. Compendium of sequential tasks

Table 3-3 **Example of list of activities**

1. Development of test programs
2. Making control letters
3. Product testing
4. Organization of groups
5. Collection of engineering data
6. Collecting sets of stickers
7. Placement of stamps
8. Provision of services
9. Provision of spaces
10. Purchase of materials
11. Receiving materials
12. Payment for materials

The activities within an organisation, along with their intended characteristics, are crucial. The selection of qualities depends on the specific purpose they fulfil. Activity attributes that focus on product cost include the activity description, the resources used, the percentage of worker time spent on the activity, the cost objects affected by the activity, and a measure of activity consumption known as the activity driving factor. Activities serve as the fundamental components for both the determination of product costs and the ongoing enhancement of processes.

Activities are Classified

Attributes define and describe activities, as well as serve as the foundation for their classification. Activity classification supports the attainment of important management goals, such as controlling product or customer expenses, promoting ongoing improvement, implementing overall quality management, and managing environmental costs. Economic considerations categorise activities as primary or secondary. A primary activity involves using or consuming the ultimate cost object, like the product or the client. Immediate-cost objects, such as primary activities, supplies, or other secondary activities, consume the resources of secondary activities. By differentiating between the two types of operations, it becomes easier to allocate product expenses. Activities utilize resources, according to Table 3-1. Therefore, the initial phase of activity-based costing directs the allocation of resource costs towards specific activities. Table 3-1 shows that products primarily consume the main activity. Therefore, before assigning the costs of the primary activities to the products, we must first allocate the expenses of the secondary activities, which the primary activities utilize. There are numerous categorizations available for additional beneficial pursuits. We can categorize activities into value-added and non-value-added, quality-related, or environmental categories. In order to develop an effective costing system, it is essential to define the needed attributes and the underlying classification before collecting data for the activity dictionary.

The Collection of Essential Information

Interviews, questionnaires, surveys, and observations are methods of collecting data for an ABC system. Conducting interviews with managers or other knowledgeable representatives from functional departments is widely considered the most prevalent method for collecting essential information. You can use interview questions to identify essential activities and their attributes for costing or other managerial objectives. We create the activity dictionary and determine the resource costs for each activity using the data obtained from interview questions. The interview questions may have several properties.

Essential. The design of interview questions should prompt answers that aid in identifying and evaluating the desired qualities.

Benefits of ABC

Conventional costing methods categorise costs into two groups: product costs and period costs. Period costs encompass expenses related to selling, general, and administrative activities and are deducted from revenues during the same period in which they are incurred. Product costs are made up of direct material, direct labor, and direct overhead. Every conscientious individual understands the allocation of these expenses in production through the methodology of cost accounting, particularly in terms of process and work costs. Nevertheless, certain managers dismiss this process as typically deficient. One could argue that the cost of a finished product should include both the direct material expenses and the administrative costs associated with obtaining the raw material. For instance, numerous companies maintain a distinct administrative division responsible for handling

all purchasing activities, such as drafting specifications, soliciting bids, issuing purchase orders, and similar tasks. ABC strives to surpass conventional costing methods by allocating costs to various activities associated with items. This necessitates forsaking the conventional distinction between product and period expenses in order to explore more correlations between activities, expenditures, and products. This implies that the customers will bear the expenses incurred during the production of the items, along with any additional expenditures. This diverges significantly from conventional thought.

ABC solely bases the product's billing on the required or utilised capacity, which is another advantage. Activity-Based Costing (ABC) does not account for or allocate any unused production capacity as a cost to the product or service. In the traditional approach, the indirect distribution rate can include unused capacity, enabling its allocation to the cost of specific items. This can impede the capacity of managers who have a deep understanding and aptitude for discerning optimal business judgments pertaining to product pricing and planned production levels.

Drawbacks of ABC

One downside of ABC is that external reporting must rely on conventional costing methodologies.

Acquisition-based costing involves categorising expenses into two groups: product costs and period costs. This approach considers only the costs associated with acquiring inventories as product costs, excluding costs related to the passage of time. Consequently, ABC may generate outcomes that deviate from the ones mandated by generally recognised accounting standards (GAAP). Thus, people often perceive ABC as burdensome in its nature. While activity-based costing (ABC) is beneficial for making internal management decisions, it may not be appropriate for public reporting. However, companies can use ABC for both internal and external reasons if the financial statement results from ABC and other approaches are comparable. ABC's lack of recognition as a widely accepted accounting principle necessitates the development of two costing systems by companies seeking to utilise ABC: one for external reporting and one for management purposes. Internal. Some companies believe they have sufficient tasks to perform without the need to implement two costing methods. ABC's tendency to be more intricate than other alternatives is another drawback.

DISCUSSION

Managers determine the level of detail employed in a particular costing approach by assessing the anticipated expenses in comparison to the anticipated benefits in order to make the most optimal choice. Nevertheless, the implementation of the ABC technique presents a variety of challenges that the manager must consideSeveral primary issues arise during the implementation of the ABC approach.g:

Generating an abundance of specific information.

It is crucial to identify tasks that hold significant importance. Treatment may involve concurrent activities. The converse can also occur: there is insufficient information.

It's possible that no subsequent actions follow the information gathering process.

The compilation of reports is necessary to address business inquiries.

This strategy is frequently idealised.

It is important to remember that simply reading a book is not enough to ensure ABC's effectiveness.

We recognize ABC as a computer programme.

A software programme can implement ABC, an innovative cost model.

The prevailing belief is that ABC consistently produces better business outcomes. The ABC method offers superior accuracy in providing product cost information compared to the old approach. Managers can use this information to implement corrective measures and enhance their decision-making process.

The expenses determined using the ABC approach are not an accurate representation of the actual expenditures. Nevertheless, ABC provides a more precise cost assessment than the conventional approach, as it only evaluates the "true" costs.

ABC focuses primarily on considering overall expenses.

ABC focuses primarily on the allocation of overhead costs in economic unit manufacturing.

CONCLUSIONS

Many people view ABC, or activity-based costing, as a more accurate method than other product costing techniques.

A significant outcome of the implementation of ABC is that it holds a prominent position in organisations that utilise this method for internal purposes. Due to its ability to accurately identify costs, decision-makers more widely apply the precise costing approach.

According to the Generally Accepted Accounting Principle (GAAP), ABC is not appropriate for public reporting due to its higher expenses.

The implementation of ABC entails a series of sequential procedures to optimize cost reporting. Internal management has discovered significant advantages in this approach, as it does not allocate costs to items beyond their actual utilization capability.

Various entities will use the activity-based costing method to generate significant profits for management. This method serves as a catalyst for improved decision-making and enhanced productivity.

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