

## Activity based costing (ABC Method)

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**Abstract:** In the present paper the need and advantages are presented of using the Activity Based Costing method, need arising from the need of solving the information pertinence issue. This issue has occurred due to the limitation of classic methods in this field, limitation also reflected by the disadvantages of such classic methods in establishing complete costs.

**Key words:** costing, cost indicators, operations, activities, processes

### 1. General Aspects

In the context of globalization, enterprises need a complete and pertinent costing system. Complete costs established by classical methods (global, phases based, commands based) have some disadvantages:

- Comprising irrelevant information in the decision making process – given the fact that complete costs methodology refers to allocating the entire mass of expenses over products (it is inevitable, so it includes some irrelevant elements), whereas in order to make correct decisions, irrelevant aspects should be excluded for decision making reasons;

- The need for repartition bases (criteria, keys) – given the fact that not all production expenses can be directly allocated to each product, and the lack of objectivity of the selected repartition bases leads to cost subventions, meaning some products increase or decrease their costs, in the disadvantage or advantage of other products due to activity diversity, expenses heterogeneity etc.;

- Opportunity – complete cost is information obtained at the end of the production process and therefore it cannot be available for decisions made earlier than that.

A solution for the information pertinence problem delivered by classic complete costs is the Activity Based Costing method.

The concept of the method is grounded on the ascertaining that not products are resources consuming, but activities, and various activities of the enterprise are used by products. That is why the enterprise should be divided into activities, and not into functions or products.

The distribution criteria are replaced by cost indicators which are elements starting

the activities and thus generating costs.

This measure answers to the needs of a systemic vision over the enterprise and to a global approach of productivity, closer to reality. It is grounded on the concept – value chain of Porter, the framework division of which (M. Porter – L' avantage compétitif, Paris 1986) is as it follows:

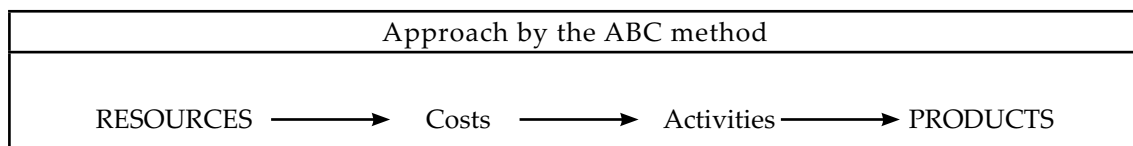
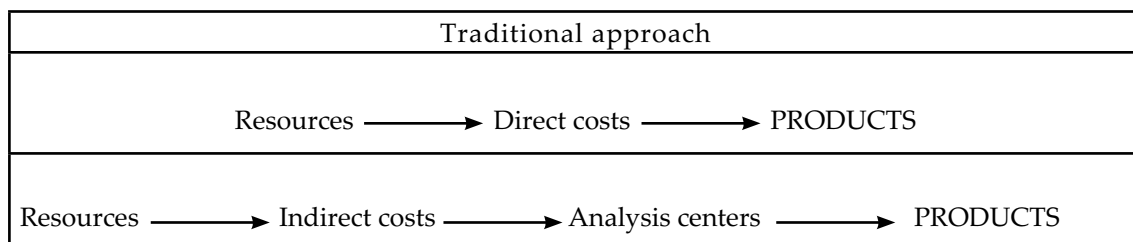
Support activities	Company infrastructure					Limits
	Human resources management					
	Technology development					
	Acquisitions					
Main activities	Internal logistics	Production	External logistics	Marketing and sale	Services	Limits

The ABC method emphasizes the need for identifying the activities that contribute to the production manufacturing and to the increase of the market share of a company's limits, representing competitive advantages defined and sustainable compared to other enterprises in the same sector.

Improving a company's performances is a matter of its capacity of producing value

for its clients by consuming in this way minimum volume of resources. The notions of costs and value are connected.

The basic principle of the ABC method consists in practicing an as realistic affecting as possible of the indirect costs compared to traditional methods, eliminating as much as possible conventionalism from cost allocating.



Explaining the ABC method implies approaching three analysis levels: operation, activity and process.

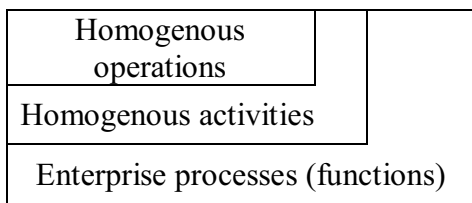
Operation is the first level in describing the labor process and it does not imply the calculation of any cost, being the part of the production process which is homogenous from a technological stand point and which represents the object of a work norm that must be performed during a given time interval, by an executive – either individual or collective – on a certain job, specifically equipped and fitted with tools.

Activity is a set of ordinate and connected operations for the purpose of achieving a certain objective.

Process is a set of organized activities aiming towards the achievement of a common objective and it has three characteristics:

- It is organized in a transversal manner compared to hierarchical organization and to the main functional structures of the enterprise (production, marketing, sales, financial, planning, purchase etc.)
- Each process has an output (finality)
- It has an internal or external client.

The relationship between the operations, activities and processes in an enterprise is as it follows:

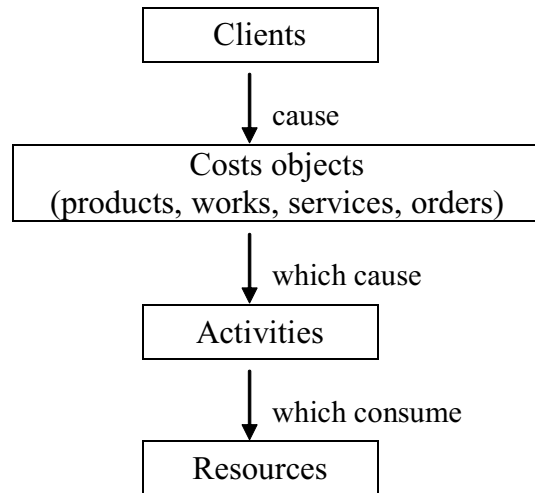


The transfer is made from the hierarchical and functional approach of the enterprise towards a transversal one, as the enterprise is considered an organization, namely a set of activities of decentralized responsibilities.

The ABC method is not only a calcula-

tion system for products costs, but also a resources consume system, because by this system the transfer is made from traditional logic in costing, according to which “products consume resources” towards an undertaking in which “products consume activities, which in their turn consume resources”.

Therefore, according to the ABC method, clients are those generating the existence of calculation objects (products, works, services, commands) which in their turn generate the creation of resources consuming activities: material, human, financial, information.

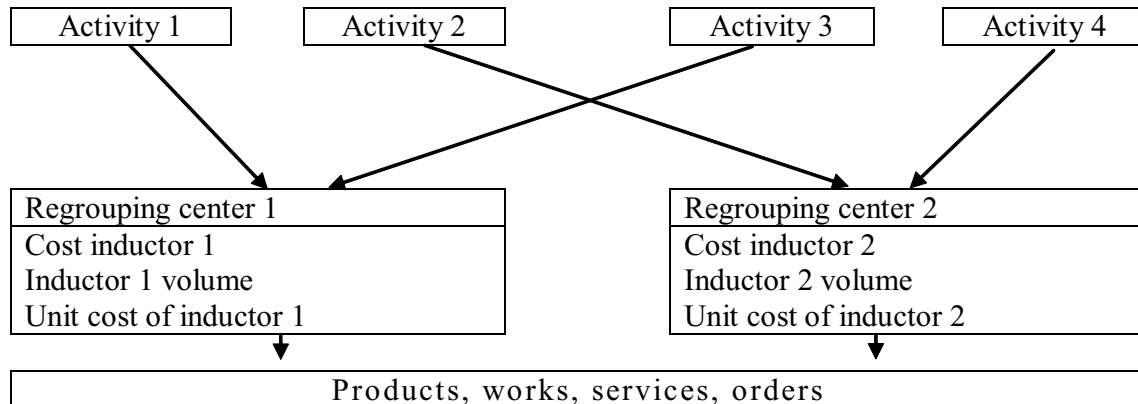


In order to establish and manage the activities based costing, each activity must be associated to an explanatory factor for the cost variation, named cost inductor.

Cost inductor is a repartition (allocation, imposing) basis for indirect expenses over the activities and calculation objects: products, works, services, orders. Each cost inductor should express a cause-effect relation with the indirect expenses, meaning it is the cause-effect factor generating indirect costs. The cost inductor measures the renderings delivered by the products’ respective activity. Depending on the type of performance

it influences, the inductor can be: cost related, quality related and execution term.

The graphic representation of the activities based costing model (Epuran and collaborators) is depicted as it follows:



## 2. Working phases

The practical application of the method implies the perusal of the following phases:

a. Identifying the activities in the enterprise – each working center in the enterprise is associated to a process, which is then decomposed into elementary activities. The identification of the activities is made grounded on their justification in the value creation process in the enterprises grounded on detailed study of the accountancy documents; each working center's cost is cumulated per activities. For each activity its characteristics will be aimed: the activity's production, namely its output, specific performance indicators, the connection with other activities ahead and behind, the nature of consumed resources in order to assess its resources consume;

b. Identifying explanatory factors – of the resources consume: cost inductors – for each individual activity an explanatory factor for the resources consume will be aimed, called cost inductor which is that activity's cause;

c. Re-grouping the activities depending on a cost inductor – all activities of the same cost inductor are re-grouped in a re-grouping center. For each re-grouping center only one cost inductor (activity inductor) is maintained;

d. Calculating the unit cost of the cost indicators

Unit cost of cost inductors = Expenses reunited in the re-grouping center / Total volume of the cost inductor

e. Imputing inductors costs over the products, works and services. The complete cost of the sold product can be obtained by adding to the cost of the materials and direct works cost the indirect expenses of the re-grouping centers afferent to a sold lot of products.

## 3. Case study

„VADMAR“ enterprise produces and sells two products, M and N knowing that:

Explanations	Product M	Product N
Direct expenses (unit)	2400	1600
Produced and sold quantity (pieces)	2000	800
Unit sale price (unit)	2.5	3.5

The entity is structured into three responsibility centers and the indirect expenses afferent to such have been individualized per characteristic activities, according to the following situation:

Responsibility center	Total indirect expenses	Activities	Activity related expenses
Production	1000 u.	Equipment maintenance	1000 u.
Sales	960 u.	Delivery quality control	320 u. 640 u.
Administration	351 u.	General administration	351 u.

The cost inductors specific to each activity are as it follows:

Activity	Activity cost	Cost inductor	Cost inductor volume	Unit cost of the cost inductor
1	2	3	4	5=2/4
Equipments maintenance	1000 u.	Working hours	250, out of which 180 for M	4 u./hour
Quality control	320 u.	Control time, in hours	100, out of which 70 for M	3,2 u./hour
Delivery	640 u.	Ballots number	80, out of which 60 for M	8 u./hour
General administration	351 u.	Turnover	7800 u.	0.045

In the general administration the calculation is made of the unit complete cost and of the analytic result, as in the following:

Explanations	Product M	Product N	Total
Direct expenses (1)	2400	1600	4000
Activity cost:			
*Equipment maintenance (2)	180x4=720	70x4=280	1000
*Quality control (3)	70x3,2=224	30x3,2=96	320
*Delivery (4)	60x8=480	20x8=160	640
I Global production cost (1+2+3+4)	3824	2130	5960
II Unit production cost	3824:2000 pieces =1,902 u./pieces	2136:800pieces =2,67 u./pieces	-
*General administration (5)	5000u.x0,045=225	2800u.x0,045=126	351
III Global complete cost (I+5)	4049u.	2262u.	6311
IV Unit complete cost	4049:2000pieces =2,0245 u./pieces	2262:800pieces =2,8275 u./pieces	-
V Unit sale price	2,5 u./pieces	3,5 u./pieces	-
VI Analytic result (V - IV)	0,4755 u./pieces	0,6725 u./pieces	-

The activities based costing, as well as any other information regarding costs is not an exact measurement of the resources consumers, yet it represents a more precise assessment of such, because it performs a more detailed analysis of indirect expenses the share of which has increased in the total cost. Representing the enterprise as a network of activities creates the possibility to perform simultaneous analyses both to the resources consummation process, and to the value

creation process, thus shaping a new system for managing the enterprise: the activity based management (ABM). By ABM the manager takes into account the costs generating processes before attaching such costs to a calculation object. Therefore, the activity based management focuses on the causes of resources consume, as much as possible even from the moment of the consume, in order to operatively intervene over the costs of the activities delimited in the company.

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