

THE ACTIVITY BASED COSTING METHOD APPLIED TO THE ANALYSIS OF THE CLIENTS' PROFITABILITY

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Abstract: *The paper presents the Activity Based Costing (ABC) method and its application in analysing the clients' profitability. The case study is outlined using the data of an accounting services company, and it aims at investigating the profitability of the clients and to group them according to the contribution to profit. Compared to traditional methods, the results obtained by applying the ABC method are more nuanced and less subjective and contribute to the decision-making process by the company's management, as the allocation of overheads to the cost of the product is more thorough.*

Key words: *Activity Based Costing Method, activities, processes, cost inducers, profitability.*

1. Introduction

The Activity Based Costing (ABC) method is a calculation model by which activities or cost centres are identified in order to assign costs to products and services based on the number of events or transactions involved in the process of obtaining the product or service (<http://www.valuebasedmanagement.net/ABC>).

The attestation of the origin of the method dates back to 1985, in *The Hidden Factory*, published by Jeffrey Miller and Thomas Vollmann. Critical thinking of common spending centres leads to the idea that efficient management is achieved by controlling the overheads. In 1987, Robert S. Kaplan, Robin Cooper, and Thomas H. Jonson laid the foundations for a computational model, which was fixed and developed in 1989 (Germany) in the book *Calculating Costs by Process* (P. Horvath and R. Mayer) (Bătcă-Dumitru, et al., 2019).

The ABC system improves the decision-making process of the interested user and directs actions to support the business environment in the global competition. This creates a more sustainable source of competitive advantage. Moreover, it identifies the products that record low costs and the excessive costs of a company (Altawati, et al., 2018).

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ABC is a cost system that uses activities to allocate the cost of resources to products or services (Oker and Ozyapici, 2013).

The activity with the meaning of an operation specific to a place of costs can be defined by the economic content of the operation related to the process of obtaining the product or service (Bâtcă-Dumitru, et. Al., 2019). Chaining several activities to get a result represents **a process**. Therefore, the ABC method is based on the idea that activities consume resources and products consume activities (Briciu, et al., 2010). The ABC method respects the point of view of the usefulness of information for the decision-making by the management and therefore has a more rigorous approach to the distribution of the overheads to the cost of the final product (Pavlyuchenko, et al., 2020). It also helps to analyse the effectiveness of management decisions for the distribution of resources in the company (Ungureanu, 2015).

The advantages of applying the ABC method are:

- ✓ The distribution of the overheads on products compared to the actual participation in the company's activities;
- ✓ determining the total production costs, starting from the premise that, in the long run, all costs vary;
- ✓ support for long-term managerial decisions.

The calculation of process costs takes place in the following steps (Bâtcă-Dumitru, et al., 2019):

- *Establishing valuable activities and removing the indifferent ones.*

The factors influencing the determination of the number of activities to obtain the product are:

- The complexity of operations;
- The degree of product diversity;

Yet, there is the four-step model established by Horvath and Mayer that includes: 1. Developing hypotheses for the main processes; 2. Analysing activities to determine partial processes; 3. Allocating capacity and costs through detailed planning of partial process costs (by comparative analysis with data from the previous year or based on budgeting); 4. Grouping partial processes into main processes.

- *Determining the cost inducers for each activity* (Bâtcă-Dumitru, et al., 2020)

The features of the cost inducers:

- ✓ easiness of identification, use and measurement;
- ✓ the basis for changing resource consumption;
- ✓ the ability to anticipate or explain the consumption of resources in the respective activity;
- ✓ are based on the capacity of a resource to support an activity;
- ✓ indifference to staff behaviour.

The cost drivers are

- transition inducers;
- duration inducers;
- intensity inducers.

- *Determining the regrouping centres;*

- *Calculation of the cost of products' parts and subassemblies;*

- *Calculation of production cost;*
- *Full cost calculation.*

Various studies have shown interest in applying the ABC method to obtain the most accurate information on costs and pricing, the analysis of profitability by products, clients, production processes, improvement of performance indicators, etc.

Yet, the application of the ABC method encounters difficulties in establishing activities and cost determinants (cost inducers) (Horngren, et al., 2006).

Although the ABC method was originally applied in production, it is successfully represented in all other functions of the company's value chain. Therefore, its applicability in the services sector is based on a breakdown of costs and activities.

2. Research Methodology

The aim of the paper is to summarize the use of the ABC method to analyse customer profitability. For an accurate presentation of the study, we determine the following working methodology:

- ✓ Identifying the activities, their cost and cost determinants;
- ✓ Determining the unit cost of cost inducers;
- ✓ Determining the result per client;
- ✓ Analysing the result by client and their grouping by analysis areas (adjacent method of analysis ABC-Pareto diagram);
- ✓ Graphic rendering of client grouping areas based on their contribution to the result.

In order to achieve the objectives, we resort to the study of the specialized literature, the synthesis, the analysis and the case study. The research methods are situated in an architecture based on analysis and critical thinking (Andone et al., 2013).

3. Research Results

The study is exemplified using the clients-beneficiaries of a company providing financial-accounting services.

General information on the clients of the accounting services company Table 1

No.	Explanation	Client A	Client B	Client C	Client D
1	Monthly turnover (lei)	7200	6000	2400	3600
2	Cost of the invoiced services / month	332.07	332.07	332.07	332.07
3	Contract term (months)	12	10	4	6
4	Number of visits at the client	12	12	6	4
5	Number of driven kilometres for a visit (Km)	5	3	10	2

In the next table, we present the cost of the activities and the cost determinants for:

Cost of the activities and the cost determinants

Table 2

No.	Activities	Cost of the activity (lei)	Cost inducers
1	Number of visits at the clients	800	Number of visits at the client
2	Transport using their own means	1200	Number of driven kilometres

Calculation of the unit cost per cost inducer:

Unit cost of the cost inducer

Table 3

No.	Activities	Cost of the activity (lei)	Cost inducers	Unitary cost/ cost inducer (lei)
1	Number of visits at the client	800	Number of visits at the client	$800/(12+12+6+4)=23.52$
2	Transport using their own means	1200	Transport using their own means	$1200/(5+3+10+2)=60$

Determining the results per client

Table 4

No.	Explanation	Client A	Client B	Client C	Client D
1	Monthly turnover (lei)	7200	6000	2400	3600
2	Cost of the monthly invoiced services (lei/month)	3320.7	3320.7	3320.7	3320.7
3	Number of visits at the client	282.25	282.25	141.15	94.35
4	Number of driven kilometres for a visit (Km)	300	180	600	120
5	Result per client (lei)	3297.05	2217.05	(1661.85)	64.95

The ABC method (Pareto diagram) can be used to investigate the structure of profitability per client category. The analysis assumes the existence of three subgroups with specific characteristics (Niculescu, 2003):

- ✓ 10-15% of the clients contribute by 60-70% to the company's profit (zone A).

This subgroup includes a small number of clients, but who obtain a large share of the company's profit;

- ✓ 25-30% of the number of clients contribute by 25-30% to the company's profit (zone B);

✓ 65-70% of the number of clients contribute by 10-15% to the company's profit (zone C), so, two subgroups give less than half of the profit, but concentrate the majority of the clients.

Clients' grouping according to participation in the company's results Table 5

No.	Client	Client	Result (lei)	Decreasing order	Cumulated result	Simple relative frequency	Cumulated relative frequency	
1	A	E	3297.05	10011	10011	22.22	22.22	Zone A (66.87%)
2	B	H	2217.05	7950	17961	17.65	39.87	
3	C	I	(1661.85)	6520	24481	14.47	54.34	
4	D	F	64.95	5645	30126	12.53	66.87	
5	E	G	10011	4250	34376	9.43	76.30	Zone B (25.29%)
6	F	J	5645	3850	38226	8.54	84.84	
7	G	A	4250	3297.05	41523.05	7.32	92.16	Zone C (7.84%)
8	H	B	7950	2217.05	43740.10	4.92	97.08	
9	I	K	6520	1250	44990.10	2.77	99.85	
10	J	D	3850	64.95	45055.05	0.15	100	
11	K (5 clients)		1250	45055.05		100		
		C		(1661.85)				100
				43393.20				

The graphical rendering of the ABC zones in the figure below:

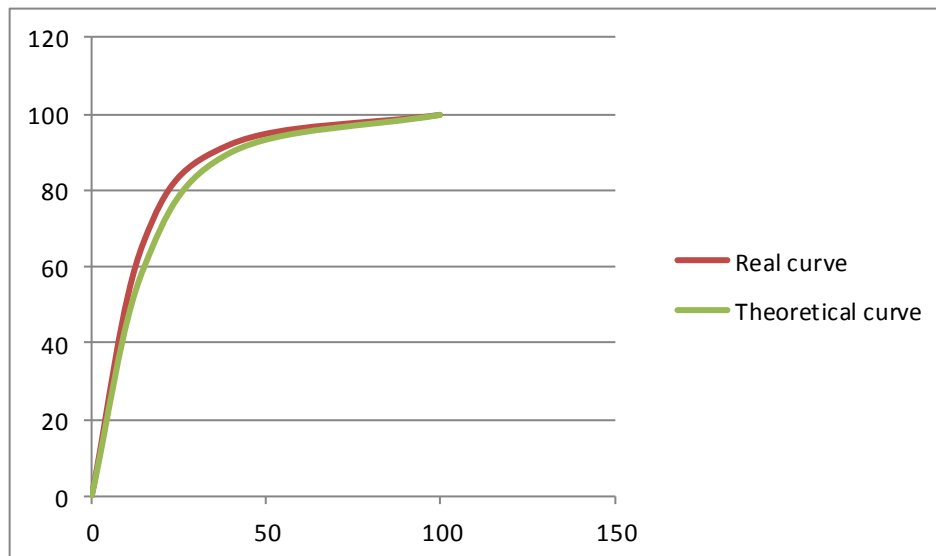


Fig. 1. *Graphical representation of the client's grouping depending on the contribution to the obtained result*

This method is also used to establish the structure of the result by client categories. Grouping the clients according to the contribution to the result enables the determination of two main categories:

- homogeneous clientele - which includes clients with approximately equal contributions to the result of the analysed company;
- heterogeneous clientele - which includes clients with substantially differentiated contributions in the result. In this category, we encounter strong, medium and small clients.

Considering the above grouping, accounting companies may develop commercial strategies tailored to the client category.

In the analysed situation, we observed that four clients from *Zone A* contribute to the achievement of 68% of the result, and the real curve is above the theoretical curve. The lower the number of customers in zone A, the higher the risk of the company. Moreover, the bargaining power of the company is reduced, being in a position to accept the conditions imposed by the partner to the detriment of profit. Depending on a small number of partners creates a sensitive relationship with them.

Zone B is the one that ensures a high degree of stability. For this reason, the company's commercial actions must be directed to the clients in this area by providing facilities for loyalty.

Zone C includes a large number of clients who need to be boosted by beneficial measures so that they can develop and move to zone B.

3. Conclusion

The cost calculation system based on the Activity Based Costing (ABC) method is based on three basic ideas (Horngrén, et al., 2006):

- ✓ the ABC method considers several costs as direct costs;
- ✓ the method homogeneously groups indirect costs related to various activities;
- ✓ for each group of indirect costs by activities, the ABC method identifies a basis for costs distribution. The distribution base has a cause-and-effect relationship with the overheads grouped in the respective batch.

The information provided to the management using the ABC method gives confidence that the distribution of the overheads and the choice of distribution bases in correlation with the costs ranking express as closely as possible the reality of consumption. The main benefit of this method is to provide more accurate information to substantiate the economic decision.

Thus, the method can be used to make decisions related to pricing, product range structure and cost reduction. The hypothesis of applying this method is the analysis of activities that can lead to lower execution time. Managers can set cost reduction goals in different business fields.

The analysis of the activities and the factors that determine the occurrence of costs (cost drivers, cost determinants) reveals numerous opportunities to improve the way of carrying out the activities. On the grounds of the performed analysis, managers can determine the reduction or even renunciation of certain activities. For each activity, the cost determinants represent non-financial variables (number of assembly-adjustment hours, number of orders etc.).

The ABC method enables the planning and management of activities. At this stage, when the focus is on the development of working procedures, the application of the ABC method can lead to finer results that meet the information needs of the management.

The difficulties in implementing and maintaining *traditional* ABC systems prevented activity-based costing systems from being efficient and responding to the management needs in due time.

In response to the limitations of the ABC method, the Time-Driven Activity-Based Costing method has been established, as developed and treated by Robert S. Kaplan and Steven R. Anderson in 2003-2004.

The time-based ABC approach provides the managers with a methodology that has the following positive characteristics:

- It is easy and quick to implement;
- Integrates well with available data of ERP and CRM operating systems;
- It is cheap and quick to maintain and update;
- It has the ability to develop models at company level;
- It is easy to incorporate with specific features for certain orders, processes, suppliers and clients;
- It provides more transparency in process efficiency and capacity use;
- It has the ability to forecast future resource demands based on the order and complexity of activities.

These features allow the activity-based costing method to move from a complex and expensive tool to a tool that provides information quickly and cheaply for managers.

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