Application of the Activity Based Costing System to the Wood Industry

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Abstract

Traditional costing methods assign indirect costs evenly, according to resource consumption by a product, while this consumption actually takes place in an uneven manner. To avoid such errors, entities seek to ensure best possible appraisal of uneven resource consumption, and the ABC method is one way of achieving this goal. The ABC method starts from the observation that it's not products that consume resources but activities, and the entity's activities are used by products. Costing through this method requires taking the following steps: identification of activities, assessment of resources consumed by each activity, determination of cost drivers and calculation of unit costs for each driver, and allocation of activity costs for each cost object.

Key words: ABC method, activities, drivers, costs, expenses
JEL Classification: M41

1. Introduction

Accounting information used within production entities is subject to a process of permanent renewal. It should help establish a real production cost, based on allocation of indirect costs in an uneven manner, and modern costing methods make it possible. The ABC method is a modern method that focuses on the concept of "activity" and "cost driver". Through this method we achieve a quantitative measurement of costs, activity performance, resources and cost objects. The concept of activity highlights the causality between the resources consumed and the products obtained, and the cost driver highlights what causes the cost of a product.

Henri Bouquin, in his book *Contabilitate de gestiune [Management Accounting]*, says that "the ABC method places in the center of the costing issue the concept of activity. Activities are administered currently and directly like products. Starting from this premise, we get to the idea that it's not products that consume resources but activities, and the entity's various activities are used by products". (Bouquin, 2004, p.182)

2. Methodology

Our research aims to present the activity-based costing method as well as the calculation of costs according to this method.

As research methods and techniques, in our study we used theoretical documentation, comparison, synthesis and practical documentation. Theoretical documentation consisted in studying field literature. We used comparison when talking about allocation of indirect costs based on an even assignment according to the traditional method and an uneven allocation thereof according to the ABC method.

We used synthesis when presenting theoretical aspects, because the ABC method implies a vast field of study. We made use of practical documentation within the company when we collected data about its activity.

3. Theoretical aspects of the ABC method

The ABC method is a return to accounting sources. It emphasizes the need to reflect the real manufacturing and sale process and to adopt an assessment method authorizing the monitoring of costs along the way. It stresses the need to follow the movement of resources on the way relating to the different activities and cost objects of the company. The calculation of the full cost of a product is not useful unless it removes the laws of various cost categories that it integrates. (Tabără, 2004, p.63).

The construction of the costing model, according to the ABC method, requires taking the following steps:

- identification of activities;
- assessment of resources consumed by each activity;
- determination of cost drivers and calculation of unit costs for each driver;
- allocation of activity costs for each cost object (product).

In national and international field literature, due to the importance of the subject dealt with, we find a series of papers, books and articles. Thus, the ABC method is a widely debated topic in books such as: *Contabilitatea managerială [Managerial Accounting]* by Sorin Briciu; *Contabilitate managerială aprofundată [Advanced Managerial Accounting]* by Paul Deaconu, Stere Mihai, Nadia Albu and Cătălin Albu; *Contabilitate şi control de gestiune [Management Accounting and Control]* by Mihaul Epuran and Valeria Băbăiţă; *Contabilitate de gestiune [Management Accounting]* by Henri Bouquin.

In the book *Contabilitate managerială aprofundată [Advanced Managerial Accounting]*, the authors state that the ABC system was born do to criticism of the traditional costing model that used the allocation method. According to this method, the allocation bases did not reflect the actual way in which a product consumed resources. Although the method of determining the way in which activities consume resources is based on estimates, these are distinct from the arbitrariness of allocation. In addition, to obtain a relevant cost that is not too "expensive" to calculate, there is no need for very strict monitoring of the time spent by each employee, and estimates and approximations are sufficiently accurate.

4. Case study of the ABC method

We conducted our ABC case study on the activity of the company "Fely Lemn S.R.L.", which was set up in 2003 and has a total of four employees. The company's main business activity is the manufacture of joinery and carpentry items for buildings, and it can also carry out secondary activities such as manufacture of chairs, office and shop furniture, kitchen furniture and manufacture of other furniture.

To carry out its business activity, S.C. Fely Lemn S.R.L. uses the following materials: fiberboard, wood, and accessories such as: hinges, handles, edges, wood screws. It also uses various types of machinery: cutting machines, edgebanders, planers, slitting machines, polishing machines; and hand tools: screwdrivers, milling machines, drilling machines, hot-air blower. The company manufactures and sells three categories of products: fiberboard furniture, wood (oak, spruce, cherry) carpentry and joinery items. We know the following data concerning the making of the company's products:

Table no.1 Presentation of expenses incurred

Items	Fiberboard furniture	Wood carpentry	Joinery items	Total
Direct costs/expenses	13000	4500	3000	20500
Indirect production costs				8260
Administrative overheads				2000
Distribution costs				411
Quantity manufactured	12	15	300	327

Source: practical documentation

Analysis and grouping of activities are as follows:

Table no. 2 Presentation of activities

Activity	Cost	Cost driver
Raw material orders	1450	Number of orders released
Inventory management	1000	Number of types and sizes of raw materials
Preparation and release of manufacturing	1000	Number of batches released
Production	2400	Machine operating hours
Administration	2000	Costing hours
Distribution/sale	411	Number of products

Source: practical documentation

The following information is also available:

Table no. 3 Cost drivers

Drivers	Fiberboard furniture	Wood carpentry	Joinery items	Total
Number of orders released	12	3	10	25
Number of types and sizes of raw materials	2	3	1	6
Number of batches released	12	15	30	57
Machine operating hours	160	80	80	320
Costing hours	10	7	5	22
Number of products	12	15	300	327

Source: practical documentation

Allocation of activity costs to products:

Table no. 4 Allocation of activity costs

Activity	Cost	Fiberboard furniture drivers	Fiberboard furniture costs	Wood carpentry drivers	Wood carpentry costs	Joinery items drivers	Joinery items costs
Raw material orders	1450	12	696	3	174	10	580
Inventory management	1000	2	333	3	500	1	167
Preparation and release of manufacturing	1000	12	210	15	263	30	526
Production	2400	160	1200	80	600	80	600
Administration	2000	10	909	7	636	5	455
Distribution/sale	411	12	15	15	19	300	377

Source: practical documentation

Determination of production cost:
Fiberboard furniture: - direct costs/expenses: 13000 lei
- indirect production costs: 3363 lei
- production cost: 13000 + 3363 =16363 lei
- quantity: 12
- unit production cost: 16363 / 12 = 1364 lei.

Wood carpentry: - direct costs/expenses: 4500 RON
- indirect production costs: 2192 RON
- production cost: 4500 + 2192 =6692 RON
- quantity: 15
- unit production cost: 6692 / 15 = 446 RON.

Joinery items: - direct costs/expenses: 3000 RON
- indirect production costs: 2705 RON
- production cost: 3000 + 2705 = 5705 RON
- quantity: 300
- unit production cost: 5705 / 300 = 19 RON.

The records related to production are as follows:

- record of direct costs/expenses

921	=	901	20500
921 furniture			13000
921 carpentry			4500
921 joinery			3000

- record of indirect costs

923	=	901	8260
923 furniture			3363
923 carpentry			2192
923 joinery			2705

- record of administrative overheads

924	=	901	2000

- record of distribution costs

925	=	901	411

- record of allocation of indirect costs, administrative overheads and distribution costs

921	=	%	10671
		923	8260
		924	2000
		925	411

- calculation and settlement of actual costs relating to the finished products obtained

902	=	921	31171
902 furniture		921 furniture	17737
902 carpentry		921 carpentry	7253
902 joinery		921 joinery	6181

5. Conclusions

Activity-based costing is one of the latest achievements in the field of costing. The concept of this method starts from the observation that it's not products that consume resources but activities, and the company's various activities are used by products. Therefore, it is better to use the company's allocation for each activity and not for each function and product. Work units are replaced by cost drivers that are not necessarily quantitative criteria, but elements that trigger activities and thus generate costs.

The ABC calculation system was born due to criticism of the traditional costing model, which used the allocation method. According to this method, the allocation bases did not reflect the actual way in which a product consumed resources. The traditional cost management system was unable to cope with changes occurred in the economic environment. To continue using it would have meant leaving untracked about 70% of the entity's resources, which would certainly have led to failure in an extremely active competitive environment.

The ABC method helps entities identify significant opportunities to reduce cost and increase profit through repricing in unprofitable customer relationships, improve processes, decrease product design costs and streamline the list of products. Its widespread potential is a great opportunity for companies.

6. References:

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Application of Activity based Costing for Palm Oil Plantation. C W Zheng. M Y Abu. Electric and Electronic Industry in Malaysia. U K Essays. Integration of Mahalanobis-Taguchi System and activity based costing for remanufacturing decision. Article. Sep 2018.Â Economies of scale show cost/course decreasing with increasing department size, mainly related to the equipment cost and most prominent up to 3 linacs. The cost in HICs is two or three times as high as in U-MICs or LICs, respectively. Decreasing operating hours below 8h/day has a dramatic impact on the cost/course. Activity based costing systems are more accurate than traditional costing systems. This is because they provide a more precise breakdown of indirect costs. However, ABC systems are more complex and more costly to implement. The leap from traditional costing to activity based costing is difficult. Traditional Costing Advantages and Disadvantages. Traditional costing systems are simpler and easier to implement than ABC systems.Â look everyone, the activity based costing system is clearly the superior of the two. given my 88 years of experience in the biology field, I would know the correct answers to your questions. abc for the win. have a nice day! Reply. guong tron day da May 29, 2018 at 9:32 am #. Activity-based costing (ABC) is a costing method that identifies activities in an organization and assigns the cost of each activity to all products and services according to the actual consumption by each. This model assigns more indirect costs (overhead) into direct costs compared to conventional costing. CIMA, the Chartered Institute of Management Accountants defines ABC as an approach to the costing and monitoring of activities which involves tracing resource consumption and costing final outputs