CURRENT COST ACCOUNTING METHODS – CHALLENGE FOR ACCOUNTING PROFESSION

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Abstract / Abstrakt

In its existence, cost accounting, as main part of management accounting, is continuously changing. Economic realities have made it necessary for most companies to have organizational changes as well as cost reduction. Markets have become global with competitors offering high-quality, low-cost goods and services. Speed, accuracy as well as understanding and meeting consumers' needs come in front. The proliferation of products and services adds to the complexity of getting work done throughout an organization. This complexity is one of the chief causes of rising costs everywhere.

Although in these new circumstances some companies underrate the cost accounting systems' importance, we cannot put them aside. Cost accounting has to provide relevant cost information for corporate executives to make correct decisions.

Traditional cost techniques cannot model the really needed expenditures for producing a product well. Because of this, some techniques were developed, which measure the relation between costs and cost originators in more complex correlations and not just with a simple quantity-cost relations. Beside the traditional techniques (actual costing, standard costing, normal costing, etc.) new methods appear. Among the others, these are: Activity-Based Costing, Target costing, Process Cost System and Marginal Costing.

The aim of this paper is to present these cost methods' advantages and disadvantages, in order to find out, how the cost accounting profession can answer to the challenges of new business circumstances.

Keywords: *cost accounting, traditional methods, target costing, ABC method*

1 INTRODUCTION

Accounting, as business function, collects, organizes records and analyzes the data of business transactions of a company in order to present adequate information to internal and external stakeholders. Accounting can be divided into two groups: financial accounting and managerial accounting.

Financial accounting has external orientation; its aim is to meet the informational needs of external stakeholders. Financial accounting's subject of observation is company's cash-flow, and transactions' recording refers to the entire company. Near financial accounting, because of different information needs of internal stakeholders (owner, manager, and staff), a managerial accounting is developed which also collects, classifies and summarizes business-financial data as well as prepares and presents reports. Managerial accounting does it only for the managers.

Cost accounting, as central and the oldest part of managerial accounting is a set of principles, methods and procedures of defining cost, revenue and result information, and means providing these information for internal stakeholders. Cost accounting has internal orientation, thus it is in tune with management structure's requirements.

This work aim is to give a short description of costing systems, which are used by companies today. While there are new costing concepts, we have to mention the traditional ones also, because many business organizations still use only traditional costing system.

2 DEVELOPMENT OF COST-ACCOUNTING

Cost accounting as a part of accounting has relatively long past. It has existed since the first decade of 1800. During its life continuously has changed, and is changing nowadays also. In the beginning of its development companies had low technological equipment. Bookkeeping was characterized by "pencil-paper" method. This fact defined the costing systems too, which aim was to file the most important cost figures in the easiest way. In this period the management didn't deal with cost allocation, because there was a mass-production with homogenous products. The cost structure was simple, it contains mainly direct material costs and direct labor costs, while manufacturing and non-manufacturing overheads were not present significantly. In these circumstances direct-labor hours were suitable allocation-base for overhead. Thanks to technological development, companies became open for product diversity, managers spread the company's profile with new product lines, and mass-production was slowly changed by individual products and services. Markets have become global with competitors offering high-quality, low-cost goods and services. If a company wants to remain in the market, or wants to increase its market share, it has to focus on speed, accuracy as well as to satisfy the consumers' needs. This complexity of largely automated equipment, product diversity and requirements of global market caused the rising of overhead costs. In addition, because of automation, there are no longer an obvious correlation between direct labor and overhead costs. This concurrent environment forces the managers to use accurate information in their decision processes. Cost information gets a main role in decision making.

The traditional cost accounting systems can not meet the new information requirements, because its rigidity and simplicity. Managers need a "road map" to have successful navigation in a company with product and service diversity. It has to be recognized, that every company is special in some way, that means, every company have a special own map. According to this, a cost accounting system has to be established, that can paint a useful picture about the company's cost structure. This system has to be flexible, to be able to answer the new challenges of the market.

Although the former mentioned facts persuade us about the importance of a good costing system, in many company tax and financial accounting are emphasized. Financial accounting is external oriented. External stakeholders care only about the correctness of company's overall cost of goods sold and inventory valuation. Costing systems are turned to managers, who use their data in strategic and operational planning, budgeting, product and process cost control as well as decision making. By Douglas Hicks[1] the reasons of the fact that most cost systems are based on financial accounting's rules could be as follows:

First of all, still the experienced accountants have financial accounting backgrounds with external reporting orientation. They cannot imagine that financial accounting's cost data can be distorted.

The second reason refers to financial problems. External reporting requires the use of financial rules, so a cost system according to these rules must be in use in an organization. For successful decision making an implementation of suitable costing system would be optimal. This means, that there is a need for maintaining two cost systems parallel. Many managers aren't aware of the advantages of the second – alternative – cost system. They look at it as addition cost to the company.

Third reason could be technical. Till 1980's, computers did not exist. People got used to computational limits and didn't think about complex recording and computing systems.

The managers' task is to recognize the new costing concept's importance and to implement it in the organization according to the internal cultural, organizational and financial possibilities. "Some

[1] Douglas T. Hicks: Activity-Based Costing: Making It Work for Small and Mid-Sized Companies, John Wiley&Sons, Inc., 1999, p. 3.

rudimentary system must exist that will enable a company to comply with financial and tax requirements, but an organization's cost system should be designed to provide management with the cost information it needs to make sound business decisions."[2]

3 COST ACCOUNTING SYSTEMS

In professional literature there are some definitions of cost accounting systems. Basically, a cost system is a mechanism for computing unit costs. This mechanism has several components, which depend on its type. We have to look at costing systems as concepts with the aim to "report cost numbers that indicate the manner in which particular cost objects use the resources of an organization"[3]. A cost system is just one information source for managers in their everyday decision, but the most important one. Essential purpose of any costing system is to provide cost information with the aim to help managers to plan, control, coordinate, direct and make decisions.

Purposes of cost accounting systems are:

- to define unit cost of product or service, through assigning material, labor and overhead cost to products
- to measure inventory and cost of goods sold,
- to provide information for economic decisions (pricing, assortment),
- to control costs and financial result.

There are several classifications of costing systems. The most common classification distinguishes job and process costing. Job costing system is used when organization produces individual products and services, thus individual jobs are used to have different products. For example job costing is established in companies which profile is furniture manufacturing, shipbuilding, special-order painting or printing. Process costing is characterized in organizations that have like or similar units of products, which are mass produced. In this case, total costs are assigned to many identical units (unit cost = total manufacturing cost / total units produced). Production of bricks, paper and gasoline can be as an example.

Job costing and process costing are similar in one hand, but are different in the other hand. The existing similarity is that both systems have the same basic purpose, which is to define unit cost by assigning material, labor and overhead costs to products and services. The differences come from characteristics of the production. In job costing each job has different production requirements, so costs are accumulated by individual job. Because of this, the key document is the job cost sheet, and unit costs are calculated by job. Regarding the process costing we can say that products are identical and are produced continuously, their costs are accumulated not by job, but by department. As a result, the key document of process costing is the department production report, and unit costs are computed by department.

Some companies may have production, which doesn't fit exactly to job costing, or to process costing system. If the organization operates with batches of similar products, an operation costing method is the most appropriate. Operation costing[4], as a combination of the previous mentioned systems, is a hybrid-costing system. In this system each work order (batch) requires a product cost calculation. Direct materials are unique to different work orders, and they are treated as in job costing system. On the other hand, each unit passing through a given operation has the same conversion cost, because it uses identical amounts of that operation's resources, so it is treated as in process costing system, where a single average conversion cost per unit is calculated. This method can be useful in the manufacturing of clothes for example.

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[2] Douglas T. Hicks: Activity-Based Costing: Making It Work for Small and Mid-Sized Companies, John Wiley&Sons, Inc., 1999, p. 3

[3] Charles T. Horngren, Alnoor Bhimani, Srikant M. Datar, George Foster: Management and cost accounting, Prentice-Hall, Inc., 2005., p. 61.

[4] in details: Charles T. Horngren, Alnoor Bhimani, Srikant M. Datar, George Foster: Management and cost accounting, Prentice-Hall, Inc., 2005., p. 122.

The development of cost accounting can be divided into two periods. In the first period the so-called, traditional cost systems were developed. The second period started in 1980's, when new costing concepts came to spread in management theory and practice.

Traditional cost systems are: actual-, normal- and standard costing. The common characteristic of these systems is that they trace direct costs to cost object and allocate indirect costs based on a single plant wide cost allocation base. The difference between traditional costing methods is that they use different prices (actual or standard) and different indirect rates (actual, budgeted or standard) in their calculations.

All these methods can be combined by stock-costing methods. Methods of costing stock are variable costing and absorption costing. Stock-costing methods have impact on balance sheet and income statement because of different treatment of production costs. Using variable costing, all variable manufacturing costs are included as inventory costs, and all fixed manufacturing costs are costs of the period in which they are incurred. At absorption costing, stock "absorbs" all the manufacturing costs. The following table (Table 1.) shows the combination of traditional costing systems with stock-costing methods.

Traditional costing systems' deficiencies:

- „there is no connection between costs and activities, which cause the costs,
- do not present the dynamics of cost forming,
- product cost information are not accurate or complete,
- lack of cost information that refers to the activities with costumers, services and other costs in the company,
- don't support relation between cost of investment and result of these investment, in the means of their effect to increase flexibility, quality, speed and willingness for innovation."[5]

Table 1.[6]

Stock-costing methods		Costs:	Actual costing	Normal costing	Standard costing
Absorption costing	Variable costing	Variable direct manufact. costs without direct materials costs	Actual prices * actual inputs	Actual prices * actual inputs	**Standard** prices * **standard** inputs
		Variable indirect manufact. costs	Actual variable indirect rates * actual inputs	**Budgeted** variable indirect rates * actual inputs	**Standard** variable indirect rates * **standard** inputs
		Fixed direct manufact. costs	Actual prices * actual inputs	Actual prices * actual inputs	**Standard** prices * **standard** inputs
		Fixed indirect manufact. costs	Actual fixed indirect rates * actual inputs	**Budgeted** fixed indirect rates * actual inputs	**Standard** fixed indirect rates * **standard** inputs

4 CURRENT COSTING SYSTEMS

Nowadays technological achievements, with barcoding and other forms of online information recording, make it possible the materials and time used on jobs are being recorded automatically and complex computer systems can be set up for reachable prices. In addition, the competition in the

[5] Györgyi Petkovics: Računovodstvo u funkciji strateškog menadžmenta troškova, Anali Ekonomskog fakulteta u Subotici, Subotica, 1999., no. 4, p. 378.

[6] Charles T. Horngren, Alnoor Bhimani, Srikant M. Datar, George Foster: Management and cost accounting, Prentice-Hall, Inc., 2005., p. 206.

global market is present with high-quality products combined with low prices. Managers can answer to the market challenges investing into computer system which focuses on costing system, supporting successful decision making.

The main cause of unit cost distortion of traditional costing lies in the incorrect way of thinking. Imagine a company, which produces 100.000 blue pens and 1.000 special pens in 900 variations. The production time of these pens can be the same, but every pen variation requires a product line tuning and special design process. By tradition systems, the allocation base could be direct machine or labor hours. 100.000 / 1.000.000 = 0,1. 1.000 / 1.000.000 = 0,001.

Interpretation of the results is that following the traditional methods, production of 100.000 blue pens requires 10% of the overhead, while production of 1.000 special pens requires 0.1% of the total overhead. Is it true, that every pen costs the same for the factory? No, because special pens need special design as well as production line mounting.

New costing systems try to find the appropriate allocation base for overhead costs defining different cost pools with different allocation bases by recognizing cause-effect correlation between cost and cost object. New costing systems and concepts are: Target costing, Department costing, Activity-Based costing, Variable costing (direct or marginal costing), and a new concept of management thinking is Balanced score card.

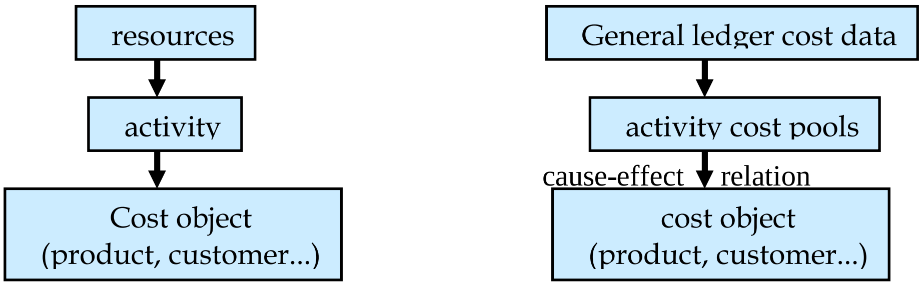
Target costing focuses on target cost per unit, which is the estimated unit cost of a product that, when sold at the target price[7], enables the organization to earn the target profit per unit. Managers have to distinguish cost incurrence from locked-in (designed-in) costs. Cost incurrence means a resource is used up. Locked-in costs are costs that have not yet been incurred but will be incurred in the future on the basis of past decisions. Locked-in costs are those costs that are already defined by designing a product. By new way of thinking we must keep in mind, that not just a direct production cause costs, but the preparation work also, and these preparation jobs order the most of the manufacturing and non-manufacturing costs. Managers also have to distinguish value-added and non-value added costs with the aim to be able to offer cheap but quality products and services.

Some companies, recognizing the incompleteness of traditional costing, use department costing. Department costing is a wider costing system, which instead of a single allocation base, uses separate indirect-cost rates for each department, because it supposes that each department has different allocation base.

Perhaps the most well-known modern costing concept is the activity-based costing. Searching the Internet, almost every article that deals with costs, mentions the ABC concept. ABC, as an expression, appeared the first time in Robert Kaplan and Robin Cooper's article. At that time, exactly in 1985, CAM-I[8] initiated a business project with the intent to develop improvements to cost management systems. By M. Ostrenga, T. Ozan, R. McIlhattan and M. Harwood's definition ABC is "a technique for calculating object costs, in the way that overhead, selling, general and administrative costs assigned to an object reflect the overhead services actually consumed by that object"[9]. Figure 1. presents the ABC logical and implementation model.

As the logical model shows, ABC method means that resources are scarified to make an activity. Every cost object requires a sequence of activity. So cost data, collected in general ledger must be grouped in activity cost pools, and from activity cost pools by cause-effect base traced to the cost object, which really used those activities and of course, resources.

[7] A target price is the price that potential customers will be willing to pay for a product or service.
[8] Computer-Aided Manufacturing – International
[9] The Ernst&Young: Guide to Total Cost Management, Co-Nex Könyvkiadó Kft., Budapest, 1997, p. 43.



ABC Logical model ABC implementation model

Figure 1

External reports must be made by traditional costing system's data. It means that the ABC system rather supplements, than replaces the existing costing system. The reason of it could be that ABC is not implemented in every company, so the external reports based on ABC could not be comparable among the companies. Another one reason is that external reports are less detailed than internal, and as we know, external reports don't report individual product costs. On external reports the products costs cancel each other if one is undercosted and other one overcosted. ABC is essential for internal decision making.

In activity-based costing "the objective is to understand overhead and the profitability of products and services"[10]. As it can be read at many articles, the activity-based concept is not an option for businesses to succeed in their future, but it is a requirement! That doesn't mean that every organization must implement a complex ABC system. It means that every company has to determine its true economic costs with understanding the costs relation to its products and services, in order to make an appropriate decision. Considering the business practice, the ABC is implemented mainly by big companies. Small businesses think that this concept's implementation would be very expenses for them, without enough benefits. It is incorrect. "Activity-based costing is a beautifully simple concept that can be adopted in a wide variety of ways."[11] We have to be aware, that small organizations are not just little big companies. They can have the same concepts and theory of management, but the methods used to put those theories into practice are different! With ABC method, companies are making a self-portrait. And a self-portrait can not be made using someone else as a model, because than the picture will be false. The ABC is the concept to adopt, not the system to install. Comparing the activity-based costing with traditional costing methods, we can state the following (see Table 2.):

Table 2.

Traditional costing	*Activity-based costing*
Only manufacturing costs are assigned to products.	Manufacturing as well as non-manufacturing costs can be assigned to products (some manufacturing costs may be excluded from product costs).
Selling, general and administrative expenses are period expenses.	Selling, general and administrative expenses can be assigned to products if there is a cost-effect relation between them.
A single overhead rate is used for the entire factory: direct labor- or machine-hours.	A number of overhead cost pools exist, with different allocation bases.
Costs of unused capacity are assigned to products too.	Costs of idle capacity are not assigned to products (only the costs of capacity they use).

[10] Ray H. Garrison, Eric W. Noreen: Managerial Accounting, Irwin McGraw-Hill, 2000, p. 322.
[11] Douglas T. Hicks: Activity-based costing: Making it work for small and mid-sized companies, John Wiley&Sons, Inc., 1999, ISBN: 0-471-24959-9, p. 5.

Negotiating about the current costing systems, we have to mention the Balanced Scorecard concept too. This concept was developed by Robert Kaplan and David Norton. Management accounting plays a main role in decision making as well as in the implementation of the company's strategy. The balanced scorecard translates an organization's strategy into a comprehensive set of performance measures. It consists of four key perspectives: financial, customer, internal business process and learning and growth. "The basic idea is that learning is necessary to improve internal business processes, improving business processes is necessary to improve customer satisfaction, and improving customer satisfaction is necessary to improve financial results."[12] Consequently, it tries to balance financial and non-financial performance measures in a single report. By balancing the above mentioned performance measures, the balanced scorecard focuses managers' attention to those short-run and long-run performances which contribute to implement the desired strategy. The balanced scorecard helps to communicate the organization's strategy to all company members by translating the strategy into a linked set of measurable targets.

5 CONCLUSION

Cost accounting is changing continuously, trying to be able to answer the managers' every day questions. Global market, international business processes, customers' growing needs for high quality with low price focus managers' attention to cost management. The accounting profession, analyzing the costs behavior, attempts to improve the traditional costing systems, that is, to answer the new challenges. Idle capacity, cost pools, activity-based concept, sunk cost, value added, non-value added costs, target pricing, relevant costs, locked-in costs are just a few examples of new expressions that occur in nowadays cost accounting. Unfortunately some companies have an aversion to new concept's implementation, not recognizing their positive effect on organization's profit. The reasons vary from cultural, through institutional, political, and behavioral to educational reasons.

REFERENCES / POUŽITÁ LITERATÚRA

[1] Douglas T. Hicks: *Activity-Based Costing: Making It Work for Small and Mid-Sized Companies*, 2nd ed., John Wiley&Sons, Inc., 1999, ISBN: 0-471-24959-9

[2] Charles T. Horngren, Alnoor Bhimani, Srikant M. Datar, George Foster: *Management and cost accounting*, 3rd ed., Prentice-Hall, Inc., 2005, ISBN: 0 -273- 68751-4

[3] Györgyi Petkovics: *Računovodstvo u funkciji strateškog menadžmenta troškova*, Anali Ekonomskog fakulteta u Subotici, Subotica, 1999., no. 4, p. 375-381.

[4] The Ernst&Young: *Guide to Total Cost Management*, Co-Nex Könyvkiadó Kft., Budapest, 1997, ISBN: 963-8401-19-2

[5] Ray H. Garrison, Eric W. Noreen: *Managerial Accounting*, 9th ed., Irwin McGraw-Hill, 2000, ISBN: 0-07-239785-3

[6] Nikola Stevanović, Dejan Malinić, Vlade Milićević: *Upravljačko računovodstvo*, Centar za izdavačku delatnost Ekonomskog fakulteta u Beogradu, Beograd, 2006. ISBN: 86-403-0724-5

[7] http://blog.accountingcoach.com (September, 2008.)

[12] Ray H. Garrison, Eric W. Noreen: Managerial Accounting, Irwin McGraw-Hill, 2000, p. 464.