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IMPLEMENTATION OF THE ABC MODEL IN A COMPANY DEALING WITH EXTRACTION OF RAW MATERIALS

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Abstract. ABC method is a new system for accurate product pricing, cost analysis of the causes of individual products and their optimization. The prices of products are accurately taken into account according to all relevant overhead costs in their actual context and relationships. Except of product costs, ABC method follows costs regarding customers, suppliers, distribution, transport, manufacturing, operational and security processes, management processes and other business activities. ABC method sees the company as a complex of interrelated activities and processes. ABC method represents more precise cost calculation for the product. The aim of the present article is to highlight the introduction of the ABC method to the enterprise and compare it with the traditional method. The result is to reduce costs by introducing ABC method to the enterprise.

Keywords: ABC method, costs, costs management, overheads, implementation of then ABC method in the company, controlling instrument.

JEL Classification: G32, G34, M11, M21.

1. Introduction

Activity Based Costing (ABC) method provides a wide range of information about costs, operations, activities, outputs and cost objects. It is used primarily to calculate the costs of a particular cost object. Due to its characteristics, it is an important tool for cost management serving to reduce costs and optimize them. It seeks to reveal the real causes of costs. For this method, it is characterized by the connection of cost and process perspective for running of the business, where in both cases, activity plays such a central element method. From the cost perspective to ABC, resources are assigned to the first phase of defined activities and then they are defined and assigned to cost objects. From a procedural point of view, activities play an important role. (Popesko 2009a; Bogdanoiu, Mirea 2013).

ABC is a system conferring concise information about the costs of individual products, services, customers, regions, distribution channels, and so on. It is a tool for ABM. ABC is not a modification or improvement of the traditional model of labor overhead costs. It's a fundamentally different view on the manner of costs. ABC is a methodology

that measures the costs and efficiency of cost objects, activities and resources. It uses causal relationships among cost objects and activities and among activities and resources (Staněk 2003; Bogdanoiu 2011a).

ABC method can be characterized by three innovations:

The first innovation: Assigning the costs to activities. Assignment is based on the measurement of resource consumption. Knowledge about the costs of activities are an important source for identifying assets with a high potential for cost reduction activities.

The second innovation: Assigning the costs to cost objects. This method assigns activity costs to cost objects based on media activities that accurately measure the consumption of these activities. Medium refers to the measurement of consumption activities to cost objects.

The third innovation: Improving information quality regarding the activities of non-expanding information about how activities are carried out. Factors that determine how much power range is required to carry out the activities are called carrier costs. Indicators of achievements are called performance indicators. In this way, ABC method combines non-financial and cost information for the benefit of the company management to improve business performance. (Bogdanoiu 2011b; Popesko, Tučková 2012).

These issues are also involved in these authors Antlová (2009); Castellacci *et al.* (2005); Kádárová *et al*. (2013); Popesko (2008, 2009b); Siničáková (2013); Spišáková (2010).

The basic structural elements of ABC method in terms of cost allocation are:
− sources,
− activities,
− activity centers,
− media sources,
− cost funds activities
− cost elements,
− cost objects (Foltínová 2007; Popesko 2010; Závadská *et al.* 2013).

ABC method focuses on indirect costs – overheads, and turns them into direct costs. The bottom line is that in the first step, direct costs are assigned to outputs and indirect costs are assigned to activities. In the second step, the activities assign to individual cost items according to the degree of difficulty for consumption activities necessary for their provision. The objective of the implementation of ABC method is to create a flexible business model of company operations. This model must be capable of using data from the accounts given accurate information about the need of business sources and their assignment to the right product. When implementing the method into a chosen company we follow generally defined steps of the implementation of this method:
− preparatory phase,
− specification of activities,
− aggregation activity to activities,

− identification of sources,
− first stage of allocation – costing of activities,
− production of cost flow structure,
− activity centres identification,
− specification of the products,
− second stage of allocation – costing of products,
− evaluation of the results (Pataky, Stašová 2005; Mihaila 2011; Dejnega 2011).

2. Methods of research

The use of the ABC method in business practice exists in two forms, either as a single model – e.g. the Strategic ABC Model or as an operating model for regular monthly or quarterly assessments, which are usually part of controlling.

The single model is used to analyze a selected period, eventually a part of the company (processes, products, customers) to verify the necessary contextual relationships. A typical example is obtaining the final product calculations for the selected period. In case of a single model, it is not necessary to solve the ABC data links with the other data sources and a special purpose simplification is used that has no significant impact on the result. Single models are mainly used in the final calculations, What-if analyses, occasional optimization of processes and in strategic ABC models and strategic planning (Hunka 2013; Ivan *et al.* 2013; Zhou, Fan 2007; Vollmuth 2009; Anton, Constantin 2013).

Operational models for the monthly or quarterly assessment are suitable for companies with dynamically changing conditions (prices, discounts, quantity produced, costs of inputs). There, monthly calculations are usually required, therefore it is essential to systemically solve the ABC links with the primary registry in the IS modules. The created model must be detailed to take into account the specifics of cost occurence and their causes.

Monthly calculations take place via specialized software (e.g. MonetABC), which represents an extension of a transaction system, and is generally connected with the former by data export and import.

The implementation of the operational model takes longer, because of the usual effort to automatize the monthly calculations as much as it is possible.

These issues are also involved in these authors Janíková (2011), Krištofík, Kanderová (2009), Šoltés (2010), Szabo *et al.* (2013), Gavurová *et al.* (2014), Georgescu (2012), Popesko, Novak (2008).

The ABC operational models are used primarily in the monthly calculations, as a support of staff motivation in relation to the guarding of processual costs, as the permanent process optimization, of the product and customer portfolio as an aid to business negotiations.

The implementation of the ABC/M is divided into three stages.

Stage 1 (one month):

The analysis and establishment of a basic dynamic model connected to the accountants to the business processes and activities, products, orders and customers. Refilling the model with numerical values for the selected period and comparison with existing information. Draft proposal of new registers for the needs of calculations and controlling. Presentation of the company management solutions. Approval of the parameters of the target solution and further progress with the senior management.

Stage 2 (one to four months):

Incorporation of the comments into the system proposal. Detailed solution of the codebooks and registers. Methodology for systematic collection and asessment of data. User training into the operation of the system. The created model is ready for regular monthly calculation of the processes, products and customers. Draft of the reports for management and decision-making.

Stage 3 (one to two months/continuously):

Automation of periodic reports. Cooperation in monthly asessment, adjustment, respectively, update of the system. Maintenance of the system in case it is necessary. Integrating the created controlling system into management – optimization, motivation, economization of the management.

3. The introduction of ABC method into the company

SILO enterprise is an enterprise engaged in the extraction of raw materials. We decided to introduce this ABC method into its action. We will make ourselves clear how the current situation seems. We will select major accounting costs (see Table 1).

Table 1. The main accounting costs of SILO company in € (Source: own processing)

Cost type	Total
MATERIAL	509 500
ENERGY	45 750
REPAIR	34 000
SERVICES	175 000
PERSONAL EXPENSES	537 465
AMORTISATION	90 000
TOTAL	1 391 715

For the analysis of the composition of the cost and understanding of the current costing model and to verify the calculation of overhead rate, we divide the costs of this Table 1 into two groups.

Table 2. The first group of costs-direct costs for material and services of SILO company in € (Source: own processing)

Type of costs	Total
DIRECT COSTS	450 000
DIRECT SERVICES	125 000
TOTAL DIRECT COSTS	575 000

The first group consists of costs of direct materials and services (see Table 2) and the second group comprises other costs divided into production overheads and salaries and non-production costs (see Table. 3).

Table 3. The second group of costs-other costs of SILO company in € (Source: own processing)

Cost type	Production overheads
Material	52 500
Energy	45 750
Repair	34 000
Services	26 250
Personal expenses	408 021.75
Amortisation	90 000
Total	656 521.75

We can see that the total costs can be divided into direct costs of materials and services and other costs (personnel costs and overheads). Other costs are important for overhead rate.

Therefore, we will verify the calculation of two overhead surcharges. One surcharge is a manufacturing overhead rate which covers direct wages together with manufacturing overhead.

This surcharge is calculated as the sum of direct wages and production overheads per worker's hour labor. Thus, classical overhead rate assuming the cause of creation and size of production overheads is direct labor. Calculation of overhead rate is shown in Table 4.

Table 4. Calculation of the traditional overhead rate – production (Source: own processing)

Direct wages and manufacturing overhead	656 521.75 €
Number of direct labor hours	31 000
Overhead rate in € / hour.	21.178 €

The second surcharge is non-productive overhead rate covering all other non-production overheads. This is calculated as a sum of the other non-manufacturing costs to € of total production costs. Total production costs are all costs of production without non-production costs (ie excluding the cost of direct materials, services, direct labor and manufacturing overhead). The calculation of this overcharge is shown in Table 5.

Table 5. Calculation of the traditional overhead rate-non-productive (Source: own processing)

Non-production costs	160 193.25 €
Total production costs	1 231 521.75 €
Overhead rate % to production costs	13%

Now we look at the order of the SILO company, comparing the results of traditional procedures with the result of introducing ABC method. Profitability is under traditional model as follows (see Table 6).

Table 6. Profitability of the order by the traditional method in the SILO company (Source: own processing)

Revenues	60 625.65 €
Direct material and cooperation	39 805.10 €
Number of direct labor hours	580
Direct wages with production overheads	12 283.25 €
Total production costs	52 088.35 €
Non-production overheads as % of manufacturing N	6 771.50 €
The total costs of the order	58 859.85 €
Profit of the order in € (3%)	1 765.80 €

In developing the model, sources, activities, cost objects and cost flow causes of consumption we will follow five stages.

1st Stage- update of accounting data

The analyzed company is divided into 8 Centers: Purchasing, Production, Extraction, Expedition, Production Planning, Human Resources Management, Facilities Management, Marketing and Resort Management company. The total costs, of course,

except of the costs of direct material, direct services and co-operation are listed in the following Table 7.

Table 7. Cost centers of SILO company according to accounting and kind in €
(Source: own processing)

Center	Material	Energy	Repairs	Services	Personal N	Amortization	Total
Purchase	1 500			5 000	27 500		34 000
Production	10 750	45 750	34 000		78 950	50 000	219 450
Extraction	25 000			2 500	110 800	5 500	143 800
Expedition	10 000			20 000	21 400	3 750	55 150
Production Planning	2 500			5 000	96 400		103 900
Human Resources Management	1 000			3 750	48 750		53 500
Facilities Management	1 000			8 750	21 750	30 750	62 250
Sales and Management	7 750			5 000	131 915		144 690
Total	59 500	45 750	34 000	50 000	537 465	90 000	816 715

2nd stage-design of activities and 3rd Stage-valuation of activities

The next step is to analyze the work, to define the activities which individual employees do. It turns out that the distribution of the main activities corresponds to about distribution centers. The theory is clear that some activities have a direct causal relationship to the cost items and some not.

Due to the decision to introduce ABC method into SILO company means that while the definition of business activities will be measured and then according to the results of their analyzes will be corrected. The steps will be done separately so that the whole process is simple and then understandable.

As supporting activities, we can define Facilities Management and Human Resource Management Center. Facilities Management is related to amortization and maintenance of corporate buildings, stores. Human Resources Management include s the costs for personnel management of subordinates in production and administration.

We assume that the organizational division of the company is responsible for the Center's main business activities. Because some activities take place at centers or more centers are involved in certain activities, we can abandon this assumption and can specify individual costs. But now, we divide costs of the two support centers (activities) to other centers (activities). The result of redistribution of costs outreach appears as follows: (see Table 8).

Table 8. Cost operations after cost division supporting business activities in SILO company in € (Source: own processing)

Center	Expenses before correction	Division of center buildings	Costs after corrections	Division of center Human Resources Management	Costs after corrections
Purchase	34 000	11 300	45 300	2 550	47 850
Production	219 450	18 250	237 700	13 375	251 075
Extraction	143 800	12 400	156 200	24 950	181 150
Expedition	55 150	9 550	64 700	4 750	69 450
Pre-production	103 900	6 250	110 150	2 500	112 650
Human Resource Management	53 500	1 475	54 975	–54 975	0
Building Management	62 250	–62 250	0		0
Sales and Management	144 665	3 025	147 690	6 850	154 540
Total Center	816 715	0	816 715	0	816 715

We can see that the total costs remain unchanged. The only thing that changes is a way of the flow of costs from resources to activities. Thereby, we will change the perspective from the particular cost types to ABC method. We will move from the perspective of the material, services, wages as a cost to activities. Costs of the supporting activities of the Human Resources Management Center and Buildings Management Center are all assigned to activities that are supported. There left no costs in these centers (activities). It may happen in some cases that one activity supports another one, or the activity supports each other altogether.

Now we divide supporting activities of the Buildings Management Center. Then we divide Human Resource Management Center so that Buildings Management Center in terms of this support is omitted. Support of Human Resource Management Center activities, which are provided by Facilities Management activities, is relatively insignificant.

We determine Shopping Center activities as the other supporting activities. From discussions with the staff of SILO company, we learned that other effort requires the purchase of equipment, purchase of other components, purchase of external services and cooperation and administrative facilities and purchase of equipment. Thus, we divided the costs of the Center according to the effort that was spent on each activity. Therefore, we defined new activities such as buying new material, components and services.

By the analysis of these activities, we found out that about 40% of the effort is spent on buying activity components. The reason is repeated searching of suppliers, negotiating with suppliers and resulting administration, own transport and access control. Only

an absolute majority is needed for buying material such as buying components because assortment plays a major role, and the range is not as wide as relationships among suppliers that have already been run.

In conclusion, we can say that there occur two distinct activities. Thus, we divided this center into two parts-the operation of machine setup and operation of own production.

The Centre Preparation of Production also supports other main activities. What is carried out, we can mention mainly maintenance, production planning, material transfers, components, products. By analysis of resource consumption to supporting activities, we- disjoin all the costs of the operation to supporting activities. Of course, also a part of the hidden activities in other modes in center Sales and other Management belongs to the supporting activities. We will keep the other costs in this activity and convert them into Sales and Administration.

Let us now look at the newly created and renamed activities and disjoined cost supporting activities (centers) to the activities supported (see Table 9).

Table 9. Costs for new and renamed activities in SILO company in €
(Source: own processing)

Activity / Center	Purchase	Production	Installation	Expedition	Pre-production	Management	Total
Material buying	10 000				8 200	15 450	33 650
Components buying	17 250				9 000	15 450	41 700
Services buying	13 000				9 750	15 450	38 200
Machine Setup		64 125			9 250	7 500	80 875
Own production	2 250	186 950			44 800	7 500	241 500
Extraction			181 150		13 725	7 500	202 375
Inspection, Packing and Shipping				69 450	1 450	1 125	72 025
Sales and Administration	5 350				16 475	84 565	106 390
Total in activities	47 850	251 075	181 150	69 450	112 650	154 540	86 715
Originally in Centers	47 850	251 075	181 150	69 450	112 650	154 540	86 715

4th stage-definition of cost objects

At this stage, we choose the cost objects. We use purchase as cost objects. We described these cost objects at the beginning. Then, we select business clients for cost objects.

5th Stage-valuation of cost objects

Valuation of defined cost objects is last and difficult step. For valuation, we need to find the causes that provoke consumption of activities to specific cost objects. We need to determine why the consumption of activities changes by cost objects.

For the first three activities, buying material, components and services, we decide for the cause-purchase price. Chosen cause for each purchase is known and it means we do not have to find any new information.

For Machine Setup activity, we choose number of settings as the main cause. We assume that each setting takes and costs approximately equally. Then, we consider the reasons (eg, short and long setting). In this case, we obtain much more concise cost as far as all the costs of adjustment are included in manufacturing overhead and relate just to the cause of direct labor hours. We get to know how much the overhead cost for each purchase separately is. For Own Production activities, we can not say that every purchase lasts equally. Therefore, we must consider the cause related to time. Because of the machines operating with periodically unattended and staff serve a different number of machines, we will decide for the cause The Time Handling Machine.

In contrast, extraction is mostly craftwork. Used tools are only a part of similar costs of production and therefore we keep direct labor hours as a cause of consumption.

For activities Inspection, Packing and Shipping, we came to analogous conclusion to that of activity Setting. The differences in the time required for final inspection, packing and shipping for each order are not significant. Thus, we decide to establish activity the number of expeditions as the cause of the consumption. Arguments why the obtained information is more concise than overhead rate is described in activities Settings.

The biggest problem occurred in the last activity Sales and Administration. We were able to reduce costs of the original center Sales and Management but this activity continued to include many diverse activities. After consideration, we came to the conclusion that all the activities related to the amount of purchase in terms of internal costs for the construction purchase. They are related to all internal functions involved in purchase work. Thus, compared with the current method for allocating non-production overheads, our cause is created by total internal costs without external direct costs of material, services and cooperation.

Let us now summarize valued activities and causes of these activities in Table 10.

Table 10. Valuation of activities and calculation of costs to the causes of SILO company in € (Source: own processing)

	Activities of companies	Costs €	Consumption cause	Number od causes	Price to one cause €
1	Material buying	33 650	The purchase price of the material	10 mil.	0.003365
2	Components buying	41 700	The purchase price components	6 mil.	0.00695
3	Services buying	38 200	The purchase price of services	4 mil.	0.00955
4	Machine Setup	80 875	Number of settings	400	202.1875
5	Own production	241 500	Number of machine hours	8 000	30.1875
6	Extraction	202 375	Number of direct labor hours	15 000	13.49
7	Inspection, packing and shipping	72 025	Number of expeditions	1 200	60.02
8	Sales and management	106 390	Total internal N	26 659 071	0.00399
	Total	816 715			

Instead of two original price overhead surcharges we will use the activity element and concise reasons for their consumption. Instead of surcharge which covers all manufacturing overheads according to the number of paid hours of direct labor and surcharges according to the total production costs, we will use the the causes of these production and non-production overheads. 6 causes of consumption activities were chosen: purchase price, number of machine sets, number of machine hours, direct labor hours, the total the number of expeditions and total internal costs.

Now consider the purchase of an analyzed company (see Table 11).

Table 11. Total costs of a company on order by ABC model in € (Source: own processing)

	Activity of a company	Number of causes	Price to one cause €	ABC costs €
1	Material buying	50 000	0.003365	168.25
2	Components buying	10 000	0.00695	69.50
3	Services buying	0	0.00955	0
4	Machine Setup	4	202.1875	808.75
5	Own production	80	30.1875	2415
6	Extraction	50	13.49	674.50
7	Inspection, packing and shipping	20	60.02	1 200.40
8	Sales and Management	299 700	0.00399	1 195.80
	Total			6 532.20
	Direct material and services			39 805.10
	Total costs			46 337.30

From the Table above, we can see that ABC costs are lower than in the traditional method. Results comparing the total costs are summarized in the following Table 12.

Table 12. Comparison of order differences in both traditional and ABC model (Source: own processing)

Purchace of the company	Traditional model	ABC model
Revenues €	60 625.65	60 625.65
The total costs €	58 859.85	46 337.30
Order's profit in €	1 765.80	14 288.35
Order's profit in% of revenues	3%	23.75%

It follows that the SILO company has greater profitability calculated by ABC model. This means that ABC model is to define the costs and causes of activities accurately.

4. Results and discussion

Summarizing the theoretical knowledge of research problems, based on expert consultations and knowledge and skills gained studying the available literature in this area, drawing on practical applications, we can put a proposal methodological procedure:

1. ***analysis of financial data according to centers*** – *analysis of a book account, analysis of the resulting cost accounts,*
2. ***analysis of activities, their definition, processing expense by groups*** – *naming and description of the main activities and processes of the organization which actually our company makes, who performs that activities, which major and key processes are, which ancillary processes are, what activities these processes consist of,*
3. ***Valuation of assets*** – *how much our company spends for each of the defined activities, how much of our resources all activities include – the result is how much each activity costs,*
4. ***definition of cost objects*** – *why our company performs these activities as defined,*
5. ***valuation of cost objects*** – *how much our company spends on each customer, product or other cost object, how many activities are consumed just by the customer, for this product, at this vendor, etc..,*
6. ***realization of the process,***
7. ***monitoring, evaluation and improvement of the proces*** (Antošová *et al.* 2014; Dolejšová 2008).

We can also conclude that the use of ABC method with so-called Pareto analysis is relatively simple, but very effective method for use in management practice. ABC analysis is historically based on the conclusions of a political scientist Vilfredo Pareto that could be defined as follows:

− 20% of the population consumes 80% of national income,
− 20% of workers makes 80% of the work,

– 20% of newspaper contains 80% of information,
– 20% of the effort produces 80% effect,
– 20% of the time taken enables to reach 80% of the results.

For practical use of Pareto analysis, elements of the research object may be divided into two groups (A, B), in three groups (A, B, C) or into four groups (A, B, C, D). Distribution of frequency and significance when divided into two groups is obviously not accurate 20:80, as mentioned above, but there was a clear tendency towards the achievement of that relationship. The breakdown of the population into three groups may occur for example ratios of 15:65, 20:20 and 65:15.

Analysis and Cost Control belong to important tasks of management. Correctly performed analysis allows to determine the current level of costs by cost types and according to other aspects, to compare benchmarking to competing products and then apply eg. value analysis to reduce costs in the key items. Using the Pareto principle allows to determine critical items at cost analysis that have the greatest impact on the total amount of costs. Result of this principle is to identify elements that are in a given system or process critical. By concentrating the efforts on the elements or processes better system functionality, improving performance, cost reduction can be achieved.

These issues are also involved in these authors Jurásková, Macurová (2013), Michalik *et al.* (2013), Nedomová *et al*. (2014), Tuček *et al.* (2013), Rajnoha, Dobrovič (2011), Gál, Kresta (2014), Gavurová (2012), Popesko (2011).

The ABC system can be beneficial for all sizes of companies and sectors of their business. In the following, we present the most common reasons for introducing the ABC method:

– *companies from rapidly changing industrial branches such as food processing, applied household chemistry, etc* – they need operative final calculations, price modeling in relation to the quantities being taken and to the delivery terms and conditions, monthly profitability asessment of the customers and networks, motivating the salesmen not baccording to sales, but according to the profit they bring,
– *big successful companies with a broad portfolio of products, respectively customers, which are capable of dynamic development* – optimizing the range of the product and customer portfolio, as a too broad portfolio can reduce economic efficiency and it is not always true that large volumes bring big profits,
– *companies that reduce costs and overheads* – they want to clarify the eligibility of costs in the processes, reveal inefficient and unprofitable activities, to achieve changes in the business and properly motivate the employees,
– *branches of foreign companies in Slovakia* – need controlling not only to report to the parent company, but especially managerial process controlling for their home management, so that the Slovak branch would be managed demonstrably effectively and thus would have its long-term future guaranteed,

– *holding structures* – the owners want to have a unified methodology of monitoring the economic efficiency of the owned firms, they want to have access to the analysis of corporate activities, products and customers and have a tool for modeling the contribution of currencies, actively, and thus have a guaranteed long-term future,
– *companies with powerful information systems* – they need a flexible and affordable tool for modeling and rapid surveys for managers, but with more comfort within the routine processing, as provided by MS Excel.

5. Conclusions

ABC method is a partial controlling instrument. In literature, it sometimes refers to a method of controlling overhead costs. An effective system of cost management is an inevitable condition for ensuring effective corporate governance. The system of cost management is an integral part of the controlling hand in all three areas of its activities (planning, accounting, computer science).

ABC system is becoming the basis for reassessment products and business activities. Based on the analysis conducted and the definition of the kind of problems we concluded that the proportion of overhead costs to total costs is an important factor that should be considered when undertaking any use of scheduling techniques in building costing activity-based (ABC). The higher the proportion of overhead costs to total costs in a company is, the greater uncertainty of allocating costs with the help of allocation base in the enterprise is. Companies can determine the cost of products more accurately than with conventional methods by implementation of the proposed ABC model.

ABC method can be considered as a very important tool for cost management. It allows to allocate costs to activities and thereby based on the following inspection to assess the validity of a causal relationship to costs during the manufacturing process. The aim of introducing ABC method is to increase profit, reduce costs, outsourcing, motivation, improving the market position of the company and ultimately improve prices.

Direct allocation of the cost of products or services does not reflect the true cost of business flow. Most of the costs are to be assigned to products based on the allocation base which do not reflect the real causes of cost. The results are distorted, which adversely affect the decisions of directors. From practical experience, just Activity Based Costing method appears to be the most effective tool of controlling. It improves the transparency of cost processes, activities and actions as they help to create a "process costing" products. Knowledge of information about cost activities and processes also supports process-oriented management.

References

Antlová, K. 2009. Motivation and barriers of ICT adoption in small and medium – sized enterprises, *E&M Economie and Management* 12: 140–155. ISSN 1212-3609.

Anton, C.; Constantin, C. 2013. The accounting – taxation relationship in the financial – accounting services providers, *Journal of Applied Economic Sciences* VIII(2): 133–140. ISSN 1843-6110.

Antošová, M.; Mihalčová, B.; Csikosová, A. 2014. Assessement of the balanced scorecard system functionality in Slovak companies, *Journal of Applied Economic Sciences* IX(2): 15–25. ISSN 1843-6110.

Bogdanoiu, C.; Mirea, C. G. 2013. Management accounting from theory to practice, *Journal of Applied Economic Sciences* VIII(1): 22–28. ISSN 1843-6110.

Bogdanoiu, C. 2011a. Place and role of management accounting and cost calculation in food industry of manufacturing dairy products, *Journal of Applied Economic Sciences* VI(4): 282–285. ISSN 1843-6110.

Bogdanoiu, C. 2011b. Bases for managerial accounting and cost calculation, *Journal of Applied Economic Sciences* VI(3): 211–221. ISSN 1843-6110.

Castellacci, F.; Grodal, S.; Mendonca, S.; Wibe, M. 2005. Advances and challenges in inovation, *Journal of Economic Issues* 39: 91–121. ISSN 0021-3624.

Dejnega, O. 2011. Method time driven activity based costing – literature review, *Journal of Applied Economic Sciences* VI. ISSN 1843-6110.

Dolejšová, M. 2008. Control procedures in accounting, *E&M Economie and Management* 1: 69–73. ISSN 1212-3609.

Foltínová, A. 2007. *Nákladový controlling.* Sprint – vfra Bratislava. ISBN 978-80-89085-70-5.

Gál, M.; Kresta, J. 2014. Indebtedness of municipalities and its influence on financing of sport: case study of Slovakia, *Journal of Applied Economic Sciences* IX(1): 47–56. ISSN 1843-6110.

Gavurová, B. 2012. Source identification of potential malfunction of balanced scorecard system and its influence on system function, *E&M Ekonomie and Management* 3: 76–90. ISSN 1212-3609.

Gavurová, B.; Šoltés, M.; Balloni, A. J. 2014. Ekonomický význam využívania informačno-komunikačných technológií v systéme zdravotníctva, *Ekonomický časopis* 1: 83–104. ISSN 0013-3035.

Georgescu, F. 2012. The active management of the company's treasury a solution for avoiding the crisis situations, *Journal of Applied Economic Sciences* VII(3): 209–227. ISSN 1843-6110.

Hunka, F. 2013. Power types in business process modeling, *Journal of Applied Economic Sciences* VIII(1): 52–62. ISSN 1843-6110.

Ivan, J.; Sedlář J.; Zaytsev, A. A.; Zaytsev, A. V. 2013. Principles of creating a cost-cutting strategy at an enterprise by means of the lean production concept, *E&M Economie and Management* 1: 75–84. ISSN 1212-3609.

Janíková, D. 2011. Draving up a budget using the activity based budgeting methodology through the simulation of processes, *Quality, Innovation, Prosperity* 2. ISSN 1335-1745.

Jurásková, K.; Macurová, P. 2013. The study of logistic parks in the Czech Republic, *Journal of Applied Economics* 8: 299–310. ISSN 1843-6110.

Kádárová, J.; Mihok, J.; Turisová, R. 2013. Proposal of performance assessment by integration of two management tools, *Quality, Innovation, Prosperity* 1: 88–102. ISSN 1335-1745.

Krištofík, P; Kanderová, M. 2009. The impact of financial reform on Slovak firms'corporate capital structure, *Ekonomický časopis* 9: 891–902. ISSN 0013-3035.

Michalik, P.; Štofa, J.; Zolotová, I. 2013. The use of BPMN for modelling the MES level in information and control systems, *Quality, Innovation, Prosperity* 1. ISSN 1335-1745.

Mihaila, M. 2011. Costs management – impact in decision making, *Journal of Applied Economic Sciences* VI: 304–307. ISSN 1843-6110.

Nedomová, L.; Maryska, M.; Doucek, P. 2014. The enterprise architect role – and its mission in corporate information and communication technology – a Czech study, *Journal of Applied Economic Sciences* IX: 88–100. ISSN 1843-6110.

Pataky, J.; Stašová, L. 2005. *Kalkulácie nákladov metódou ABC v podmienkach controllingu*, Slovenská poľnohospodárska univerzita v Nitre. ISBN 80-8069-622-5.

Popesko, B. 2009a. *Moderní metody řízení nákladu. Jak dosáhnout efektívního vynakládání nákladu a jejich snížení.* Grada Publishing. ISBN 978-80-247-2974-9.

Popesko, B. 2010. Metodika aplikace kalkulace Activity-Based Costing v průmyslových firmách, *E&M Economie and Management* 1: 103–114. ISSN 1212-3609.

Popesko, B. 2009b. *How to manage the costs of service departments using Activity Based Costing,* International Review of Business Research Papers, World Business Institute Melbourne, Australia. ISSN 1832-9543.

Popesko, B. 2011. Activity Based Costing applications in the plastics industry – case study, form issues in global research in business and economics. FIZJA International, Orlando, USA. ISSN 1940-5391.

Popesko, B.; Tučková, Z. 2012. Application of advanced cost management techniques in hospital management-Czech perspective, in *Proceedings of the 18th International Business Information Management Association*, vols 1–5. Istanbul: International Business Information Management Association, 799–808. ISBN 978-0-9821489-7-6.

Popesko, B.; Novak, P. 2008. Activity based costing applications in the Czech Republic, *Lex et Scientia International Journal* XV. Nicolaue Tulescu University, Bucharest. ISSN 1583-039X.

Rajnoha, R.; Dobrovič, J. 2011. Simultánne riadenie ekonomiky a procesov znalosťou pridanej hodnoty, *E&M Economie and Management* 1: 53–69. ISSN 1212-3609.

Siničáková, M. 2013. Transmission of inflation and economic growth in the euro area in the respect to a single monetary rule, *Journal of Applied Economic Sciences* 8: 499–509. ISSN 1843-6110.

Spišáková, E. 2010. Analysis of innovation activity of Slovak and Czech enterprises, *Quality, Innovation, Prosperity* 1–2. ISSN 1335-1745.

Staněk, V. 2003. *Zvyšování výkonností procesním řízením nákladu*. Grada Publishing. ISBN 80-247-0456-0.

Szabo, Z. K.; Šoltés, M.; Herman, E. 2013. Innovative capacity and performance of transition economies: comparative study at the level of enterprises, *E&M Economie and Management* 16: 52–68. ISSN 1212-3609.

Šoltés, M. 2010. Vzťah speed certifikátov a inverznej vertical ratio call back spread opčnej stratégie, *E+M Ekonomie and Management* 2: 119–124. ISSN 1212-3609.

Tuček, D.; Hájková, M.; Tučková, Z. 2013. Utilization level of business process management in Czech enterprises – objectives and factors, *E&M Economie and Management* 2: 81–98. ISSN 1212-3609.

Vollmuth, H. J. 2009. *Controlling. Nový nástroj řízení*. Profess Consulting. ISBN 80-85235-54-4.

Závadská, Z.; Závadský, J.; Sirotiaková, M. 2013. Process model and its real application in the selected management areas, *E&M Economie and Management* 16: 113–127. ISSN 1212-3609.

Zhou, P.; Fan, L. 2007. A note on multi-criteria ABC inventory classification using weighted linear optimization, *European Journal of Operational Research* 182(3): 1488–1491. Elsevier. http://dx.doi.org/10.1016/j.ejor.2006.08.052

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