

# AN OVERVIEW ON THE ADOPTION AND IMPLEMENTATION OF ACTIVITY - BASED COSTING IN PRACTICE

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**A***bstract: In recent years activity - based costing has attracted the interest of both academics and management accountants since its emergence. Researchers and academics believe that activity - based costing (ABC) is a new managerial accounting technique which could enhance the business orientation of managerial accounting and help business decisions and taking control in an increasingly sophisticated way (Jarvenpaa, 2007). Despite the great interest coming from researchers, companies seem to be reluctant to adopt ABC. A great number of surveys show that the dissemination of ABC has not been as intense as expected. The objective of this paper is to examine how ABC was adopted and implemented worldwide and within Romanian companies; what were the major challenges identified when adopting and implementing ABC; what are the main advantages and disadvantages of such a cost system. To achieve this objective we begin with the analysis of the existing literature in the field and previous studies made at international level, followed by a questionnaire - based empirical study and analysis of ABC implementation within Romanian companies.*

*Keywords: managerial accounting, activity - based costing, adoption and implementation, survey, Romania*

*JEL Classification: M41, M19*

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## 1. Introduction

Changes in the business environment such as globalization and technological change; new challenges in terms of products, services, quality, delivery terms are having significant influence on production processes, management, cost and managerial accounting systems. In today's competitive business environment, companies must identify and eliminate activities and processes which do not add value; they must become "customer driven"; they need relevant financial, non-financial, qualitative and quantitative information to shape their strategic decisions; customer satisfaction must become a top priority (Cardos et al., 2009).

Researchers and academics (Chenhall, 2003; Kellermanns&Islam, 2004; Askarany, 2007) consider that traditional cost systems do not provide detailed information to managers; they can lead to erroneous decision making by ignoring the fact that complex products consume more resources than simply structured products (Kellermanns&Islam, 2004); they are characterized by a lack of efficiency and capability in coping with the requirements of the changing environment (Askarany, 2007).

In response to these failures researchers turned to the study of managerial and cost accounting innovations. New management accounting techniques, like strategic management accounting, activity - based costing and management, strategic cost management, balanced scorecard, target costing or non-financial measures, were identified and suggested. Some of them, for example, activity - based costing gained a degree of popularity among researchers and practitioners (Jarvenpaa, 2007:100).

The originators of ABC recommended it for economic, normative, realistic and deterministic reasons (Hooper&Major, 2007); they considered that ABC aimed at helping business decisions and taking control in an increasingly sophisticated way (Jarvenpaa, 2007) and proved to be a flexible and up-to-date decision support system that could handle the problem of increasing overhead and simultaneously provide strategic information (Kellermanns&Islam, 2004). Finally, ABC was considered as promoting rationality, efficiency and, ultimately, profitability, which is why potential users show interest (Jones&Dugdale, 2002).

As we can see, activity - based costing (ABC) has aroused the interest of both researchers, academics and practitioners (management accountants) at a considerable extent in recent years, but despite the strong advocacy in favor of ABC the adoption rates are not overwhelming. Studies show that many companies and practitioners seem to be reluctant to adopt ABC.

Knowing these aspects the main objective of our paper is to examine, analyze and present how activity - based costing was adopted/received by companies and practitioners; what were the major challenges identified when adopting and implementing ABC; what are the main advantages and disadvantages of such sophisticated cost system like ABC.

The remainder of this paper is laid out as follows. The following section presents a short overview of activity - based costing, its advantages and disadvantages; followed by a brief review of the existing literature at international level. Our intention is to examine the theoretical and practical perspectives of activity - based costing all over the world. The main objective is to present a summary of the studies made, studies which examine the adoption or rejection of ABC within companies all over the world.

After the international literature review we try to identify how activity - based costing is perceived by Romanian researchers and practitioners based on the existing Romanian literature and a questionnaire - based survey made by us in 2010 among accounting professionals. In the end the conclusions are drawn in order to offer solutions to the gaps identified and to establish further research objectives and opportunities.

## **2. What is activity - based costing?**

Considered one of the most important innovations in cost calculation and managerial accounting, activity - based costing (ABC) has its origins in the USA and is the result of multiple theoretical and practical researches of American researchers. Robin Cooper and Robert Kaplan wrote several studies and articles about the design, implementation, advantages and disadvantages of ABC. Moreover, the development and promotion of ABC has been influenced significantly by the work of Cooper and Kaplan (Rezaie et al., 2008).

ABC was developed as an approach to address problems associated with traditional cost management systems tending to have the inability to accurately determine actual production and service costs, or provide useful information for operating decisions (Volkán, 2007). Moreover, Kaplan&Cooper (1998) considered that the percentages of overhead costs had risen, traditional techniques became increasingly inaccurate because the indirect costs were not equally caused by all the products. Consequently, when multiple products share common costs, there is a risk that one product subsidize another, and that is why managers were making decisions based on inaccurate data. But using ABC

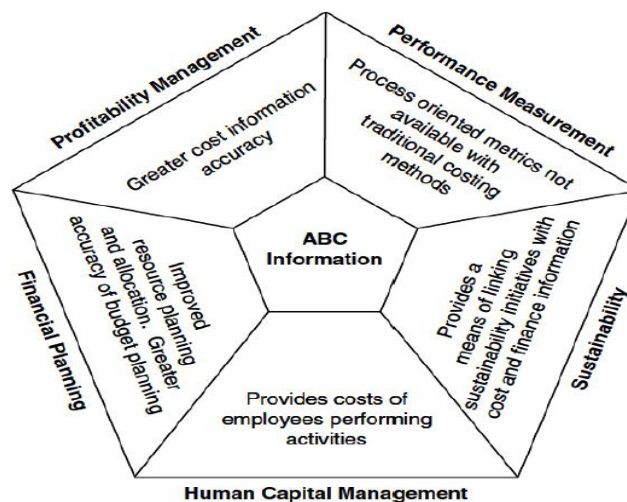
overhead allocation is much more sophisticated, ABC seeks to identify the cause and effect relationship to objectively assign costs (Lotfi & Mansourabad, 2012).

ABC is build up around the concept of activity and starts from the idea that activities consume resources not products and various activities are used in the production process. So, in a company the segmentation of activities becomes necessary and not the segmentation of products or functions. Once the costs of the activities have been identified, the cost of each activity is attributed to each product to the extent the products use the activity. In this way ABC often identifies areas of high overhead costs per unit and so directs attention to finding ways to reduce the costs or to charge more for costly products.

ABC focuses on the causes behind indirect costs, under ABC overhead costs are assigned to cost objects such as products in a two-step process (Narayanan&Sarkar, 2002). Indirect costs like rent, utilities, depreciation, indirect labor are first assigned to cost pools using resource drivers (for example, rent is assigned using floor space). After that costs are allocated from cost pools (departments, various activities) to cost objects using cost drivers (activity drivers like number of inspections, moves, setups). In this way, thanks to the activity analysis, cost distortion is prevented, waste is minimized and non-value-added activities are eliminated (Kim&Ballard, 2001).

Researchers (Cooper&Kaplan, 1998; Lere, 2000; Narayanan&Sarkar, 2002) consider that when an organization implements ABC there are at least two important benefits. First of all, ABC allows for a thorough and critical analysis of the entire activity and production processes. This analysis can result in process improvement, more efficient resource consumption, cost reduction, managerial performance, better-informed strategic decisions on pricing, product lines and market segments. Second of all, ABC allows companies to change the mix of products produced and customers served, allowing them to focus on the profitable products and profitable customers. Moreover, improved product costs lead to better estimates of job costs for pricing decisions, budgeting and planning. Besides accurate cost information, managers can get non-financial information in order to improve the decision making process: better product design decisions, better customer support decisions and fostering value enhancement projects (Lotfi&Mansourabad, 2012). The figure below reflects the benefits of ABC presented so far.

Figure 1: Benefits of ABC



Source: Lotfi & Mansourabad (2012).

Although ABC generates a lot of benefits, managers should be aware that the system has some limitations. Researchers (Lotfi&Mansourabad, 2012) consider that sometimes it could be difficult to clearly define activities, resource consumption or cost objects. Omission of some costs, associated with the product or service, is another problem that could occur. Costs of activities like marketing, advertising, research and development, product engineering are not included in the costs of products and services even though these types of cost are direct ones, can be traced to individual products or services.

The implementation of ABC requires higher costs, and difficulties could appear during the use of it because of various activities which can appear. ABC implementation is a collective process, it brings new cost calculation rules and supposes a change of attitude and behaviour. If the implementation process doesn't intend to change the way of thinking of the employees, the conceptions referring to customers and internal processes, then the result will only be a minor improvement of efficiency without any growth in competitiveadvantages of the organisation. Moreover, ABC needs quite a long asimilation period before the general use within the company (Volkan, 2007).

### **3. Activity - based costing in practice – an international review**

Activity - based costing (ABC) attracted both academic and practice research interest from the very beginning, the dynamism of the published papers underlies the durability of this topic. The journal literature on ABC is predominantly positive (Bjornenak & Falconer, 2002), the majority of the authors consider that ABC might be the solution for many companies and leads to improved business processes; it promotes rationality, efficiency and ultimate profitability (Carwin&Bouwman, 2002; Jones&Dugdale, 2002; Hooper & Major, 2007); others concluded that ABC has a value-enhancing effect on pricing decision and profit performance, allows better price differentiation among products, customers and markets; it filters out the less relevant competitor prices from the decision process (Maiga&Jacobs, 2003; Cardinaels et al, 2004) and there are authors who consider that ABC permits customer satisfaction, customer and business profitability analysis (Helgesen, 2007; Namazi 2009).

Despite the strong advocacy in favor of ABC, the adoption rate of the method within organizations is not overwhelming. Survey evidence suggests that, over the past decade, there has been a growing awareness of ABC, but the overall rate of implementation has been low.

In the 90's the implementation rate of ABC has been low both in the USA and Europe. Grott (1999) finds out that in the USA around 18% of the investigated companies adopted ABC while 58% were considering the possibility to implement the method. Later, in 2000, Horngren et al. concluded that 15% to 20% of the American companies adopted ABC and an equal number were considering adopting it.

In Europe the adoption rates were similar. Abdallah&Li (2008) showed that in 1994 in the UK 352 out of 544 largest companies were using ABC, whereas between 1994 and 1999 there were 177 ABC users out of 348 companies. So, although there was no significant increase, the adoption rates were high. In continental Europe evidence shows smaller adoption rates of ABC techniques. With the exception of France and Belgium, where adoption rates were around 20%, rates less than ten percent are common to many countries (Clarke et al., 2002). In Finland researchers (Agbejule, 2006) found out that from a sample of 490 Finnish industrial firms the ABC adoption rate had grown from zero in 1986 to 104 adoptions by 1995. The main reasons for adopting ABC in Finland were the lack of trust in the information from the old system in the new operating environment and the failure of the old system to meet current managerial needs (Agbejule, 2006).

Researchers (Bescos et al., 2001; Abdallah&Li, 2008) found out that the main reasons for implementing activity - based costing were: (1) cost modeling, cost reduction and cost management; (2) improving the internal production processes; (3) more accurate cost information about products and services; (4) more accurate allocation of indirect costs; (5) improving cost and management control; (6) improving customer profitability analysis and (7) modernization of cost accounting systems; (8) activity performance measurement and management.

In Asia the adoption rates of ABC were low. According to Sulaiman et al.(2004) in Singapore 13% of the surveyed companies (14 of the 106 companies) declared that they were using ABC. In Malaysia and China the adoption rates were even lower, 4% of the Malaysian companies and 2% of the Chinese companies were actively using ABC. The adoption rates of ABC were a little higher in India, 20% of the surveyed companies declared that they were using ABC. The primary reason for implementing ABC was that it helped companies to understand activities better and identify activities that drive costs.

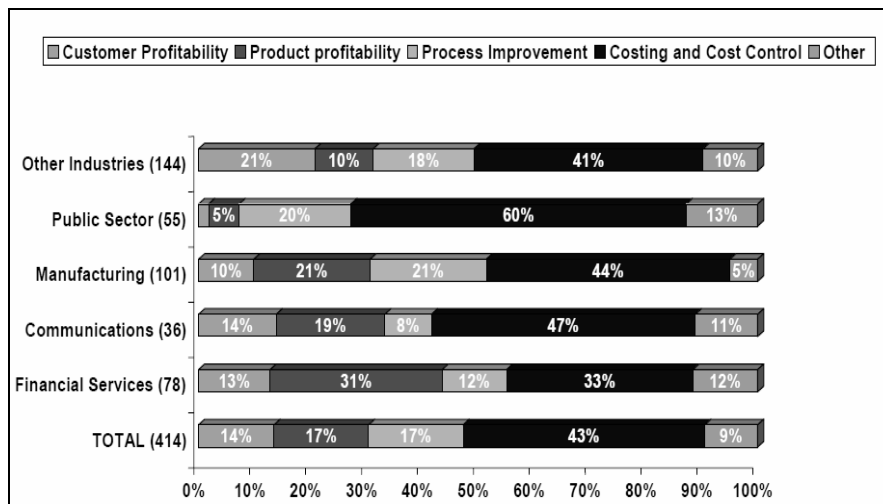
In 2005 Better Management – a dedicated team of professionals with business management experience in fields like business and performance management, financial management, business intelligence or IT - conducted a study among its members to determine the state of ABC. In this way an online survey was completed by 528 participants from companies from all over the world, from various industries, of different sizes, geographies and job levels. Industries like manufacturing, communication, financial services, health care, consulting or IT participated in the study.

According to Better Management Report (2005) the implementation of ABC varies by industry. Companies coming from the communication or financial services sector declared that they are active users of ABC or they have implementation programs in place. Meanwhile companies from the manufacturing industry have equal proportions in pilot phase and active phase of ABC. The public sector does not consider to implement and use activity based costing.

The respondents considered that the main reasons for implementing ABC were: (1) cost and cost control – 43%; (2) process improvement – 17%; (3) product profitability – 17%; and (4) customer profitability – 14%. Costing and cost control were mentioned by more respondents irrespective of the company revenue and company size, midsized businesses cited product profitability as the primary use, and smaller businesses cited process improvement as the primary use of ABC.

The reasons for implementing ABC differ widely by industry. In the financial services industry and communication the main reasons for implementing ABC are costing and cost control and product profitability. In manufacturing firms costing and cost control is the primary use of ABC but process improvement and product profitability are considered the main aspects by equal numbers of firms. In the public sector the key focus is costing and cost control but they don't emphasize profitability (Figure 2). The study made in 2005 shows that managers rely on information from ABC to make business decisions. The CEO or COO is the primary user of this information, followed by the CFO and CMO.

Figure 2: Reasons for using ABC in various industries



Source: Better Management Report (2005).

Although the majority of the respondents reported that they were actively using ABC or in a pilot they also reported challenges in implementing the method. 30% of the respondents considered that designing and building the model represents the main challenge; 22% considered that gathering data; 18% considers that updating and maintaining the model; 11% considered that integrating and loading data; 10% considered that reporting and disseminating outputs represents the main challenges when implementing activity - based costing.

The Better Management Report presents a mixed picture regarding the adoption and implementation of ABC all over the world. The generally accepted idea is



that ABC was “called” to provide a more accurate picture of cost information and to enhance competitiveness.

In 2009 Pavlatos&Paggios conducted a survey among 146 leading Greek hotel enterprises. The respondents were asked to indicate whether they were using traditional or new and contemporary managerial accounting systems. Moreover, they were asked to present the benefits gained over the years. Their findings show that the majority of Greek hotels are still using traditional managerial accounting techniques like standard costing or variable costing. ABC is implemented by only 23% of the Greek hotel sector. They divided the respondents into two categories: ABC adopters and ABC non-adopters. Moreover, the authors concluded that the use of ABC is very satisfactory and there are hotels intending to put more emphasis on the ABC in the future.

In time ABC was implemented and applied in various industries such as manufacturing, electronics, automotive, aerospace, airplane manufacturing, ship building, telecommunication (Rezaie et al., 2008), banking and other financial services (Abdallah&Li, 2008), hospitality industry (Pavlatos&Paggios, 2009), health care and insurance.

As we can see the literature is contradictory, the results of the surveys and studies made present various pictures of ABC adoption. The generally accepted idea is that activity - based costing provides an accurate picture of costing and cost control, improves internal business processes, helps companies to gain management facilitating benefits such as customer profitability analysis. Despite these advantages and benefits ABC is often accompanied by problems which make the adoption process a complex and difficult one.

#### **4. Activity - based costing in practice – a Romanian review**

In Romania there are only a few studies which examine the evolution of managerial accounting in Romania; the managerial accounting practices, tools and techniques used within Romanian companies; the relevance, quality and utility of managerial accounting information in the decision making process.

In 2010 Jinga et al. conducted a questionnaire - based empirical study among Romanian general and financial managers. They tried to establish the attitude of managers of Romanian companies towards the information generated by managerial accounting and to identify the specific calculation and reporting instruments used for collecting and analyzing managerial accounting information. The respondents to the study came from production (17%), services (39%), distribution (37%) or other activity domains (7%). Analyzing the data collected

they found out that 20.51% of the respondents applied the global absorption method; 25.64% applied job costing; 7.69% applied direct costing; 12.82% of the respondents implemented ABC; 5.13% implemented target costing and 17.95% of the respondents did not know the name of the method or did not use any method for cost calculation.

The main conclusion formulated by Jinga et al. (2010) was that managerial accounting information is useful for Romanian managers for business development; for monitoring and lowering costs; for setting the selling prices of products and services or to increase the quality of products and services but they still used traditional managerial accounting practices, tools, techniques and cost systems to “produce” this type of information.

Continuing the study made by Jinga et al. (2010) we tried to identify the role and function of managerial and cost accounting; how managerial accounting practices and cost systems changed over the years within Romanian companies.

#### **4.1. Research methodology**

A questionnaire was developed and launched among professional accountants/chief accountants, members of The Body of Expert and Licensed Accountants of Romania (CECCAR). In the survey respondents were asked to indicate whether their businesses adopted traditional or contemporary managerial and cost accounting practices, tools and techniques; what was the role of managerial accounting and cost systems within their businesses; to what extent they relied on information about managerial and cost accounting in their decision making process. A covering letter explained the purpose of the study and assured confidentiality of the information provided. An instruction set needed to fill the questionnaire correctly was also sent to the respondents.

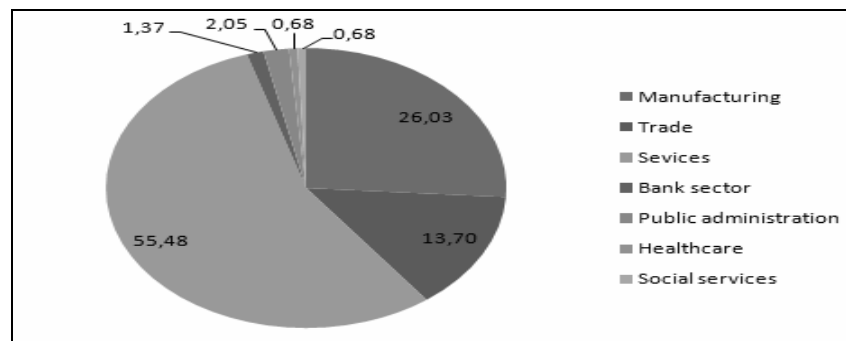
Our questionnaire was sent to a number of 1871 professional accountants. The mailing efforts resulted in 178 responses, generating a response rate of 9.52%. Of 178 responses we eliminated 32 answers, finally remaining 146 usable responses. The data collected was processed using SPSS version 16 and was analyzed with the help of descriptive statistics.

Below we present only those results which refer to (1) the use of traditional managerial and cost accounting tools and techniques; and (2) the implementation, use or abandon of modern cost systems such as activity - based costing. Moreover, we intend to present the benefits and the main challenges identified in the implementation process.

#### 4.2. Findings – the use of traditional managerial and cost accounting tools and techniques

The participants in the study came from various industries. Services had the highest representation, 53.4%, followed by the manufacturing industry, 26%, and trading, 13.7%. Other activity sectors like public and local administration, banking, social services, health care represented 6.8% of the respondents (Figure 3).

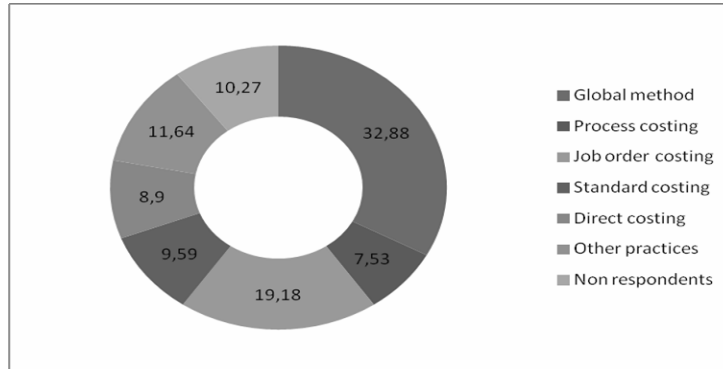
Figure 3: Participants to the study



Source: Author's projection based on the data collected.

Processing the data obtained we found that Romanian organizations seemed to recognize the importance and necessity of managerial accounting and cost calculation, as they were implementing managerial accounting systems. However, in implementing managerial accounting, organizations do not rely on current regulations and the proposed scheme, rather preferring to develop their own methods and techniques. Moreover, Romanian organizations' focus on cost calculation; they associate managerial accounting with cost calculation, the calculation of production costs. Only a few consider that managerial accounting improves production processes and internal activities; or to identify and eliminate redundant activities. Because of these aspects traditional managerial and cost accounting techniques, like process costing, job order costing or standard costing, were found to be more widely adopted than recently developed and contemporary tools (Figure 4).

**Figure 4: The use of traditional managerial and cost accounting tools and techniques**

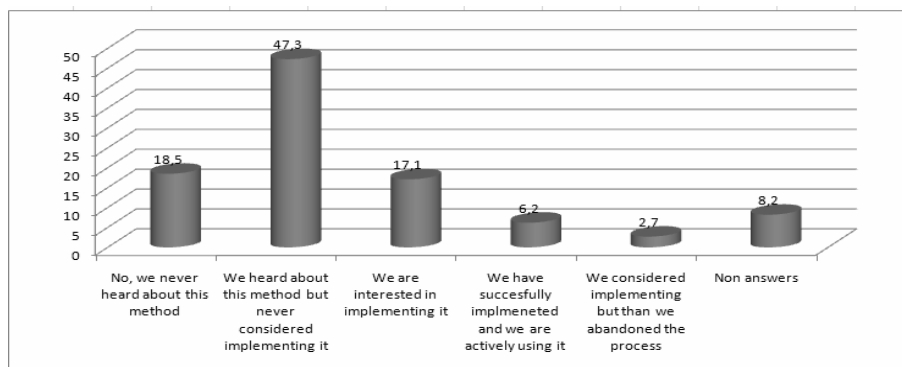


Source: Author's projection based on the data collected.

#### 4.3. Findings – the use of activity based costing within Romanian companies

As for the implementation of new and modern cost systems our results show that only 6.5% of the respondents have heard and successfully implemented activity based costing, 2.7% of the respondents reported that they have implemented ABC but later abandoned it; while 65.8% of the participants either have heard about but never considered adopting it or they have not heard of ABC at all.

**Figure 5: The status of ABC within Romanian companies**



Source: Author's projection based on the data collected.

The respondents were asked to indicate the main reasons for implementing ABC, while those who had not implemented it or had not heard about ABC were asked to indicate their reasons against activity - based costing. The table below shows the respondents' answers and options.

**Table 1: Reasons for implementing and major challenges identified in the process of ABC**

<b>Reasons for implementing ABC</b>
<ul style="list-style-type: none"> <li>• Improvement of cost control and cost management</li> <li>• Obtaining more precise information on production costs</li> <li>• Improvement of performance indicators</li> <li>• Reducing costs and developing pricing strategies</li> <li>• More accurate allocation of indirect costs</li> <li>• Accurate analysis of customer profitability</li> <li>• As required by management</li> <li>• Improvement of the existing cost systems</li> </ul>
<b>Major challenges identified</b>
<ul style="list-style-type: none"> <li>• Satisfaction with the existing cost systems</li> <li>• High implementation and maintenance costs</li> <li>• Implementing the model requires high workload</li> <li>• Model design, data collection and work processes are too complicated</li> <li>• Lack of management's and employees' support or interest</li> </ul>

**Source:** Author's projection based on the data collected

Our results show low adoption rates of ABC within Romanian companies. Romanian companies still prefer traditional cost systems; but it seems that globalization, the emergence of multinational companies wanting obtain more precise information on costs, financial and non-financial performances are factors that generate the use of modern and developed costing tools and techniques. It is true that Romanian organizations are in an early stage of the use of developed cost systems like ABC, but the fact that organizations have heard and are familiar with ABC make us believe that ABC has a future within Romanian companies.

## 5. Conclusions

As we mentioned at the beginning, the main objective of our study was to present how activity - based costing was adopted and implemented in

companies all over the world. Analyzing the existing literature in the field and the previous studies made by researchers the main conclusion is that although ABC was “called upon to provide a more accurate picture of cost information and to enhance competitiveness” (Cohen et al., 2005:995), over the years it has, more or less, helped companies to satisfy these needs. Moreover, ABC gained other benefits and advantages like product and customer profitability analysis; improvement of internal business processes.

However, the adoption and implementation of ABC is “accompanied by problems” (Cohen et al., 2005:995) which makes the adoption not so intense as expected. Conceptual, technical and methodological doubts about the definition, concepts, methodology and processes of ABC exist and vary, but tailored to the unique strategies, organizational structures, capabilities and needs of the companies ABC could become an active partner of managers when creating value to the shareholders; shaping management information systems and when taking managerial decisions.

After the international review of the literature our focus turned to the national level. Our objective was to present how activity - based costing was received by Romanian companies and practitioners; what the major challenges identified in the adoption and implementation process of ABC were. Our results indicate that ABC (and other contemporary managerial accounting tools and techniques) is in an early stage within Romanian companies. Romanian practitioners seem to continue to operate in a traditional way; they seem to be pleased with the traditional managerial accounting practices, tools and techniques despite of the changes in the economic environment; they still prefer job order costing or process costing instead of activity - based costing because they have little or no other alternatives; or because there is no interest or support coming from managers or employees. We believe that managers do not have to settle mediocre results; they must be open to change especially when there is a possibility to optimize resource consumption and to improve products and internal business process efficiency.

It is known that the adoption and implementation of ABC varies from country to country; from industry to industry and does not look the same in every company. Moreover, it presents both advantages and disadvantages.

However, we consider that in the era of globalization and technological change intensive competition will turn Romanian companies towards the adoption of ABC in order to improve cost measurement accuracy; to resolve to real problems and to gain organizational benefits at a multidimensional level.

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