ACTA UNIVERSITATIS LODZIENSIS
FOLIA OECONOMICA 257, 2011

Tomasz Wnuk-Pel[*]

INNOVATIONS IN MANAGEMENT ACCOUNTING AT THE TURN OF THE 20th AND 21st CENTURY

Abstract. Diffusion of innovative management accounting methods constitutes an incredibly interesting and a widely presented subject in literature all over the world. In the context of significance of innovative management accounting methods diffusion, the following objective of the article has been formulated – the article aims to analyze the concept of innovations in management accounting and analyze their significance and diffusion at the turn of the 20th and 21st century. In order to reach the aim, an analysis of the concept of management accounting innovations has been attempted; attention has been paid to the fact that the innovations are delayed when compared to technical innovations, the results of the delay have also been presented. Analysis of findings of the research on the use of innovative methods such as ABC/M, BSC, TQM and analysis of methods of company and individual employees' performance evaluation has been made.

Keywords: innovations in management accounting, diffusion in innovations, activity-based costing diffusion.

1. INTRODUCTION

In the last twenty years, companies all over the world have undergone extremely rapid changes. Asian companies, as well as American and European, implemented new methods of management which was a natural reaction to the increased access to information and growing technological progress and market globalization. In order to keep pace with changes, the companies took initiatives leading to realization of customer needs, modification of organizational structures and implementation of new technologies. Growing competition meant that companies were forced to manufacture diversified goods of good quality and of high added value, which had to be smoothly supplied to customers (Bromwich, Bhimani, 1994). The market, in which the companies operated at the turn of the 20th and 21st century, characterized of insecurity, constant and radical changes. In order to survive, the companies had to be able to identify new perspectives and be able to adjust to the still growing competition. Such conditions made

[*] University of Lodz.

companies to implement innovative production systems (total quality control – TQC, just in time – JIT or computer integrated manufacturing – CIM), advanced technologies and new organizational and management techniques. Technological changes brought alterations in the practice of company management including shift in the information systems of management accounting.

Increasing competition in the global market, rapid development of information technology and changes in company organization significantly influenced the transformation of extent and importance of management accounting – on the one hand they influenced the way traditional management accounting methods were used, and on the other hand, they had influence on the implementation of innovative solutions. Especially the latter i.e. spreading of innovative methods of management accounting is an extremely interesting subject of research which is extensively presented in literature in the world. In the context of significance of diffusion of management accounting innovative methods, the following aim of the article has been put forward – this paper aims to analyze the concept of management accounting innovations and analyze their significance and diffusion at the turn of the 20th and 21st century. In order to reach the aim of this article, it has been divided into three sections. The first part attempts to analyze the concept of innovation in management accounting, paying attention to the fact that the innovations are delayed when compared to technical innovations, the results of the delay have also been presented. The second part deals with analysis of research findings on the use of innovative methods such as ABC/M, BSC, TQM and analysis of methods of company and individual employees' performance evaluation. The paper ends with a short conclusion.

2. CONCEPT AND SIGNIFICANCE OF INNOVATION IN MANAGEMENT ACCOUNTING

To analyze innovation in management accounting it is necessary to define the notion of innovation. We can talk about innovation regardless of the length of time it has been known for (Rogers, 2003). Innovation should be looked at from the point of view the company which aims to implement it; it can be defined as "an idea, practice or thing which is perceived as new by the person or organization that wants to implement it" (Rogers, 2003, p. 5). To concede something as innovation, the concept should be a novelty for the user or potential user.

Innovations in organizations are usually divided into two categories – technical innovations and organizational/administrative innovations (Evan, 1966). Technical innovations involve implementation of new technologies, products or services, they are connected with the technical aspect of company operation and they apply to the basic processes taking place in the company. Administrative

innovations, on the other hand, involve implementation of new ideas in the area of e.g. resources allocation, staff recruitment, reward and authority system etc. Administrative innovations take place in the social system of an organization and they involve implementation of new rules, procedures, allocation of new roles in company or changes in the structures associated with communication and information exchange between people and the environment in which they operate. Due to the fact that accounting systems are a form of administrative control, innovations in management accounting are perceived as administrative innovations (Clarke et al., 1999) or they are regarded as practice (Rogers, 2003).

Administrative innovations, in the population of companies, may be delayed when compared to technical innovations. Although the delay of technical innovations in relation to organizational ones is possible, such situation is extremely rare (Evan, 1966). Usually, the delay relates to administrative innovations. Evan (1966) attempted to answer the question – why? According to his thesis, technical innovations are seen by managers as more tangible (concrete) and more closely related to the company objective (profitability) than administrative innovations. Contrary to technical innovations, Evan proved that benefits ensuing from implementation of administrative innovations are less reliable and less concrete, and secondly, more time is needed to generally evaluate their influence on company achievements.

Extending on Evan's works, Rogers and Shoemaker proved that there are specified features of innovation which influence its diffusion. They defined five key factors influencing diffusion of innovation (Rogers, Shoemaker, 1971):

– attractiveness – relative benefit ensuing from implementation of innovation when compared to the method which is being replaced (innovations that are seen as beneficial for the organization e.g. those which may improve its profitability, are implemented more eagerly);
– compliance – degree of compliance with the currently existing in the company system of values and personal experience (innovations which are not compliant with it will not be implemented as fast and effectively as those which are compliant);
– complexity – perceived difficulty in understanding innovation and its use in organization (less complex innovations are more likely to be implemented faster and more effectively);
– testability – degree in which the innovation can be tested on restricted scale before making final decision about its implementation in the whole organization (when the possibility of testing is high, the risk of implementation decreases);
– possibility of observation – degree in which results of implementation of innovation can be observed (measured) and communicated (innovations whose results are easily measured are implemented more eagerly).

Rogers and Shoemaker (1971) proved that attractiveness, compliance, testability and possibility of observation are positively correlated with diffusion of innovation; complexity is negatively correlated. Generally, technical innovations are regarded to be more profitable and testable and their results are seen as easier to measure than the results of administrative innovations. Administrative information is perceived as less profitable mainly due to the fact that its implementation process is more complex.

Reasons for the delay of administrative innovations in relation to technical innovations which were suggested by Evan (1966) and Rogers, Shoemaker (1971), undoubtedly relate to the specific problem of innovations in management accounting as those innovations fall in the area of administrative innovations. Therefore innovations in management accounting may be perceived as less profitable than technical innovations because it is difficult to measure, in a short period of time, economic benefits ensuing from the implementation process. Innovations in management accounting may also be regarded as relatively more complex, harder to measure and test in comparison to technical innovations. Bearing all that in mind, it is not surprising that companies often treat implementation of management accounting innovations with more reserve than technical innovations. The latter are seen as well-thought-of and regarded to be more concrete when compared to innovations in management accounting. Thus, it is possible to formulate a simple conclusion that the reasons underlying the delay of diffusion of management accounting innovations, in comparison to technical innovations, are the perceived features of management accounting innovations in relation to technical innovations.

It needs to be stressed that the delay in implementation of management accounting innovation constitutes a problem only when deterioration of company's performance would be a result of that delay, whereas elimination of the delay would lead to improvement in the performance. Indirect evidence of such way of thinking can be found in Damanpour and Evan's (1984) work, who proved that correlation between administrative innovations and technical innovations was much higher among companies which achieved better results than those which performed worse. Study results presented by those authors claim that company achievements were negatively correlated with the delay in administrative innovations implementation. It turned out from the research conducted by Domanpour and Evan that companies cannot gain full potential profits ensuing from implementation of technical innovations when it is not accompanied by implementation of relevant administrative innovations. There is thus a mutual relation between technical and administrative innovations; once a company gets to know the relation, understands it and makes use of it, than the company gets a key to effective implementation of innovation and, what is more, gets a key to improvement of company performance. Therefore, improvement of company performance, stemming from implementation of innovation, can be achieved when technical and

administrative innovations are implemented in cooperation. Preoccupation with implementation of innovations which improve productivity or product quality and preoccupation with implementation of the newest technologies seems inappropriate when it is not accompanied by implementation of administrative innovations e.g. innovations in management accounting. Mutual relation between technical and administrative innovations may cause a situation in which delay in implementation of administrative innovations may negatively influence diffusion of technical innovations, and acceleration in administrative innovations implementation may lead to faster spreading of technical innovations (Evan, 1966).

In conclusion, it should be emphasized that delay in implementation of management accounting innovations is observed and its reduction may cause achievement of fuller benefits ensuing from implementation of technical innovations, and, what is more, it may have positive influence on improvement of company performance.

3. RESEARCH ON INNOVATION IN MANAGEMENT ACCOUNTING

In the research on innovation in management accounting, one analyzes decision about implementation (Malmi, 1999), the process of implementation (Krumwiede, 1998) or implementation success (Shields, 1995). Innovation is studied in case of a particular organization (e.g. innovations in Toyota, Boeing), in case of a particular line of business or sector (e.g. innovations in small service companies, innovations in health care units, innovations at universities), in case of domestic sectors (e.g. innovations in British companies, innovations in German-speaking countries, innovations in Scandinavian countries), in case of particular innovation (e.g. innovations in activity-based costing, balanced scorecard, benchmarking).

Research on innovations in management accounting is mirrored in publications discussing modern methods of management accounting. Division between conventional and modern (innovative) methods of management accounting is based on the fact that modern methods are orientated towards strategy and towards providing information both financial and non-financial (Chenhall et al., 1998). Chenhall (2008, p. 525) described innovations in management accounting as strategic management accounting "integrating strategy with value chain and activities with cost objects." According to Chenhall (2008), among some basic innovations in management accounting one could enumerate: benchmarking, activity-based costing, activity-based management, target costing, business process reorganization, theory of constraints, balanced scorecard, total quality management and value chain management. Key research areas and basic results of studies on innovations in ABC/M, BSC, TQM and innovations in measurement of organizational and staff performance are presented in Table 1.

Table 1. Key research on innovation in management accounting

Area of innovation	Research area	Key study results
1	2	3
ABC/M	factors deciding about ABC/M implementation	• institutional isomorphism (Malmi, 1999) • technical effectiveness of the system (Malmi, 1999; Baird, 2007) • company size (Krumwiede, 1998; Baird, 2007) • management support (Brown et al., 2004) • accessibility of information sources (Krumwiede, 1998)
	results of ABC/M implementation	• improvement of organization performance (Ittner, Larcker, 2002) • bigger management and staff satisfaction (McGowan, Klammer, 1997) • dependency on behavioral factors (Chenhall, Langfield-Smith, 1998)
	variables influencing number of companies in different countries which successfully implemented ABC/M	• management support (Krumwiede, 1998) • appropriate training (Shields, 1995; Krumwiede, 1998)
BSC	areas of balanced scorecard use	• effective strategy communication and management control • diagnosis and control (Tuomela, 2005) • implementation of strategy oriented towards stakeholders taking their interests into account and improvement of profitability and long-term growth at the same time (Joseph, 2008)
	benefits ensuing from balanced scorecard use	• improvement of financial achievements in companies which use BSC in comparison to organizations which did not implement BSC (Davis, Albright, 2004) • positive managers' reaction to measures used in balance scorecard which facilitated performance improvement measured by them
	factors correlated with decision about BSC implementation	• company size (Hoque, James, 2000) • early stage of product life cycle (Hoque, James, 2000) • no relation between decision about BSC implementation and market position of the company (Hoque, James, 2000)
TQM	changes in management accounting systems following TQM implementation	• increased decentralization of management accounting system (Hoque, Alam, 1999) • bigger orientation of management accounting system towards project management (Hoque, Alam, 1999)
	usefulness of total quality management	• quality improvement of products and processes (Dunk, 2002) • performance improvement (Ittner et all., 2002)

Table 1 (cont.)

1	2	3
	positive and negative factors influencing adaptation of management accounting systems to changes caused by TQM implementation	• management's commitment, strong authority, customer orientation, education and training programs facilitate adaptation of management accounting systems in TQM environment (Gurd et al., 2002) • fear of changes delays adaptation of management accounting systems (Gurd et al., 2002)
company performance measurement	role of quality measurement in systems measuring performance	• use of quality measurements in management control systems influences quality, financial performance and customer satisfaction (Maiga, Jacobs, 2005) • quantitative and quality performances are mainly influenced by defining clear and easily measurable activity aims (Verbeteen, 2007)
	attributes of performance measures in production companies	• to ensure competitiveness of production companies it is necessary that the management accounting system supports new production methods; especially companies should use measures of quality, inventory costs, productivity and discounted cash flow (Kaplan, 1986) • companies which implemented JIT, TQM or team work, to boost motivation, they should report performance to the lowest level – production staff • companies using JIT, on higher scale than companies not using JIT, make use of non-financial measures and TQM tools (Hoque, Zawawi, 2009)
	influence of non-financial measures onto managers and staff behaviour	• using performance measurement system which is strategy-orientated fosters managers' commitment in realization of company aims (Webb, 2004) • using comprehensive reporting system which ties causes with effects makes managers pay more attention to non- financial measures (Ullrich, Tuttle, 2004) • integration of performance measures and higher financial rewards boost staff motivation and ensure compatibility of organizational and employees' aims (Bouwens, van Lent, 2006)
staff performance evaluation	determination of mechanisms resulting in positive outcome	• using non-financial measures in employee performance measurement results in improvement of company performance (Banker et al., 2000) • to improve innovativeness, it is better to use performance measurement system for whole teams and not individual employees • providing useful and adequate information in work fosters positive influence of performance measurement system on results (Burney, Widener, 2007)

Table 1 (cont.)

1	2	3
staff performance evaluation	selection of measures in performance measurement system	• performance measures should be controlled by the evaluated manager, they should also be accessible on time, relevant, comprehensible and their acquisition should not be expensive (Merchant, 2006) • ratio between financial and non-financial measures in performance measurement system should depend on the level of regulation and innovativeness • optimal proportion of measures in the system of performance measurement may lead to compatibility of agent's (manager) remuneration and company performance (Datar et al., 2001)

Source: own research.

Late 1980s and early 1990s of the 20th century are the beginning of research on diffusion of innovations in management accounting (Johnson, 1992; Kaplan, 1994a). Many publications about management accounting from that time dealt with the issues of development of certain management accounting methods, perceiving and implementation of innovations, determinants and trends in the area of their implementation as well as processes of change and analysis of management accounting systems. One of the most significant works in the field were two articles by Kaplan (1984, 1994b), which reviewed development of management accounting before and after 1984. In the first article, Kaplan (1984) claims that traditional systems of management accounting, which were used until 1984, were no longer appropriate for those new organizations operating in highly competitive business environment and using advanced methods of production. As a reaction to this conclusion, new concepts such as activity-based costing and balanced scorecard were developed; subsequently, they set a trend in the development of management accounting in the following years. In an article dating back to 1994, Kaplan (1994b) presented literature review documenting beginnings, development and diffusion of ABC and BSC. Björnenak and Olson (1999) also presented a literature review of management accounting, which aimed to comprehend and analyze changes in management accounting systems. The basic conclusion of the study was that contemporary management accounting systems undergo extremely serious changes, those systems are more user-oriented, they use both financial and non-financial information, they make use of both internal and external data, they provide information which is more disaggregated both *ex post* and *ex ante*.

Analysis of features distinguishing modern (innovative) and current (conventional) systems constitutes an interesting issue in the area of management accounting innovations. Examination of those differences is important in order to fully comprehend the structure and directions of development of innovative management accounting systems. Björnenak and Olson (1999) attempted to construct such

a study. They suggested analysis of innovation in management accounting from two perspectives: the extent (complexity) and dimension of the system.

Basic changes in terms of extent (complexity) in management accounting systems with respect to number of objects, number and type of allocation bases and time are presented in Table 2.

Table 2. Changes in terms of management accounting systems

Element	Traditional approach	Modern approach (innovations)	System*
number of objects	few	many	ABC, BSC
number of allocations bases	few	many	SMA
type of data	financial internal aggregated	non-financial external disaggregated	ABC, SMA ABC, AM, LS ABC, SMA
number of periods	one	many	ABC, LS
time-sharing	constant	variable	LS, LCC/TC
time perspective	mainly *ex post*	mainly *ex ante*	BS, LCC/TC

* Designation adopted by Björnenak and Olson (1999), apart from widely used ABC and BSC, there are the following: AM – *activity management*, LCC – *life cycle costing*, SMA – *strategic management accounting*, TC – *target costing* and LS – *local information system* (a system used in Scandinavian countries).

Source: Björnenak, Olson (1999, p. 333).

Another dimension of innovation, apart from complexity (extent) of the system, considered by Björnenak and Olson (1999) was the dimension of the system. In terms of that problem, the authors analyzed two features – time of use and users' commitment in creating the system. Account of some basic changes in the dimension of the system is presented in Table 3.

Table 3. Changes in dimension of management accounting system

Element	Traditional approach	Modern approach (innovations)	System
number of systems	one or a few	many	ABC, BSC, LCC/TC, AM, LS, SMA
time of use	limited	unlimited	ABC, LS
users' commitment	little	deep	AM, LS
information asymmetry	low	high	AM, LS

Source: Björnenak, Olson (1999, p. 335).

Presented consideration, in terms of research on innovation in management accounting, shows that modern management accounting becomes increasingly diversified. Numerous elements of modern methods were used before in different solutions e.g. activity-based costing – its elements might be found in both theory (Staubus, 1971) as well as in practice (Johnson, 1992). Innovations in the field of management accounting mirror significant changes which run in many different directions i.e. increasing the number and variety of cost objects and allocation bases, wider usage of non-financial and *ex ante* data, increase in the number of systems used and flexibility increase of report periods as well as widespread acceptance of information asymmetry and boost of users' commitment in the process of designing management accounting systems.

Innovative systems of management accounting are not always homogeneous e.g. ABM systems: they may be used for many years (unlimited time of use) but they also might be used only once to make one, particular decision, they may provide information for a period of one month, year or many years, they may simultaneously use *ex post* and *ex ante* data, they are able to use internal or external data on a bigger scale. Combination of different significant features of innovative management accounting systems may produce, and it produces, systems which are considerably varied. When researching the systems, one should not restrict to marking them as traditional or modern, ABC, BSC or TC. To get to know the systems, to comprehend their use, one should study causes and results of their use, their structure and complexity, but also ways of using information from those systems.

4. CONCLUSIONS

When analyzing the phenomenon of diffusion of innovation in management accounting, it is important to bear in mind two key factors – firstly, availability of knowledge is just a matter of time, and secondly diffusion of innovation is influenced by fashion and trends. With respect to the first of the above factors i.e. availability of knowledge, it needs to be stressed that the degree of diffusion of innovation depends on the availability of information about characteristics of the innovation and potential benefits, which the company may derive after implementation of those innovative methods. Diffusion of management accounting innovations is largely dependent on top management, who may not necessarily have detailed knowledge of analyzed phenomenon and thus, when considering implementation, needs to use help of consultants or use information available in publications. Accessibility to knowledge fosters intensive diffusion of innovation and makes the whole process more rational. With time, information about the innovation itself and about the effects becomes more available, therefore companies may make more conscious decisions about implementation,

and, in particular, they might quit the implementation when necessary information is not at hand. Availability of knowledge of given innovation would rationalize decisions made by companies and it would also limit incidents when organizations decide to implement innovation by "trial and error" i.e. when they do not have enough necessary information needed in the decision making process. In the course of time, when the knowledge of innovation grows, companies making decisions about implementation would be able to make more rational choices (Cinquini et al., 2008).

Besides accessibility of knowledge, fashion and trends are yet another factor influencing diffusion of innovations in management accounting (Abrahamson, 1991). The effect of fashion and trends has the greatest influence on the process of diffusion especially in its early stage. At this stage, when the knowledge of the innovation is scant, consulting companies, schools of business or different business gurus have major influence on the diffusion. Role of those groups in the process of diffusion was emphasized by Malmi (1999), who "in waves". The author also stated that, in the early phases of diffusion, the process is not strictly related to the real need of companies for innovational solutions in management accounting but is a result of fashion and trends.

To sum up, it should be noted that because of fashion and trends, the first stage of diffusion of innovations in management accounting is usually chaotic (trial and error effect). Yet, this stage allows to accumulate necessary knowledge about ways of implementation, ways of use and prospect benefits ensuing from implementation of innovative methods. Managers, at this stage of diffusion, are able to acquire knowledge which enables making rational decision about implementation of innovation. Having the knowledge, they do not succumb to current fashion and trends but take into consideration real needs of the company.

REFERENCES

Abrahamson E. (1991), "Managerial fads and fashions: the diffusion and rejections of innovations", *Academy of Management Review*, No. 16 (3), p. 586-612.

Baird K. (2007), "Adoption of activity management practices in public sector organizations", *Accounting & Finance*, No. 47 (4), p. 551-569.

Banker R. D., Potter G., Srinivasan D. (2000), "An empirical investigation of an incentive plan that includes nonfinancial performance measures", *The Accounting Review*, No. 75 (1), p. 65-92.

Björnenak T., Olson O. (1999), "Unbundling management accounting innovations", *Management Accounting Research*, No. 10, p. 325-338.

Bouwens J., van Lent L. (2006), "Performance measure properties and the effect of incentive contracts", *Journal of Management Accounting Research*, No. 18 (1), p. 21-54.

Bromwich M., Bhimani A. (1994), *Management accounting: pathways to progress*, London: Chartered Institute of Management Accountants.

Brown D. A., Booth P., Giacobbe F. (2004), "Technological and organizational influences on the adoption of activity-based costing in Australia", *Accounting and Finance*, No. 44, p. 329-356.

Burney L., Widener S. (2007), "Strategic performance measurement systems, job-relevant information, and managerial behavioral responses – role stress and performance", *Behavioral Research in Accounting*, No. 19, p. 1-21.

Chenhall R. (2008), "Accounting for the horizontal organization: a review essay", *Accounting, Organizations and Society*, No. 33, p. 517-550.

Chenhall R., Langfield-Smith K. (1998), "Adoption and benefits of management accounting practices: an Australian study", *Management Accounting Research*, No. 9 (1), p. 1-19.

Cinquini L., Collini P., Marelli A., Tenucci A. (2008), "An exploration of the factors affecting the diffusion of advanced costing techniques: a comparative analysis of two surveys (1996-2005)", Paper presented at the European Accounting Association Conference, Rotterdam.

Clarke P. J., Hill N. T., Stevens K. (1999), "Activity-based costing in Ireland: barriers to, and opportunities for, change", *Critical Perspectives in Accounting*, No. 10, p. 443-468.

Damanpour F., Evan W. M. (1984), "Organizational innovation and performance: the problem of 'Organizational Lag'", *Administrative Science Quarterly*, No. 29 (3), p. 1-19.

Datar S., Kulp S. C., Lambert R. A. (2001), "Balancing performance measures", *Journal of Accounting Research*, No. 39 (1), p. 75-92.

Davis S., Albright T. (2004), "An investigation of the effect of balanced scorecard implementation on financial performance", *Management Accounting Research*, No. 15, p. 135-153.

Dunk A. S. (2002), "Product quality, environmental accounting and quality performance", *Accounting, Auditing and Accountability Journal*, No. 15 (5), p. 719-732.

Evan W. M. (1966), "Organizational lag", *Human Organizations*, No. 25 (1), p. 1-20.

Gurd B., Smith M., Swaffer A. (2002), "Factors impacting on accounting lag: an exploratory study of responding to TQM", *British Accounting Review*, No. 34 (3), p. 205-221.

Hoque Z., Alam M. (1999), "TQM adoption, institutionalism and changes in management accounting systems: a case study", *Accounting and Business Research*, No. 29 (3), p. 199-210.

Hoque Z., James W. (2000), "Linking balanced scorecard measures to size and market factors: impact on organizational performance", *Journal of Management Accounting Research*, No. 12, p. 1-17.

Hoque Z., Zawawi N. H. M. (2009), "Research in management accounting innovations: an overview of its recent development", Paper presented at the European Accounting Association Conference, Tampere.

Ittner C. D., Lanen W. N., Larcker D. F. (2002), "The association between activity-based costing and manufacturing performance", *Journal of Accounting Research*, No. 40, p. 711-726.

Johnson H. T. (1992), *Relevance Regained*, New York: Free Press.

Joseph G. (2008), "A rationale for stakeholder-based management in developing nations", *Journal of Accounting and Organizational Change*, No. 4 (2), p. 136-161.

Kaplan R. S. (1984), "The role of empirical research in management accounting", *Accounting, Organization and Society*, No. 11 (415), p. 429-452.

Kaplan R. S. (1986), "The evolution of management accounting", *The Accounting Review*, No. 7, p. 390-418.

Kaplan R. S. (1994a), "Flexible budgeting in activity based costing framework", *Accounting Horizons*, No. 6, p. 104-109.

Kaplan R. S. (1994b), "Management accounting (1984-1994): development of new practice and theory", *Management Accounting Research*, No. 5 (3-4), p. 247-260.

Krumwiede K. R. (1998), "The implementation stages of activity-based costing and the impact of contextual and organizational factors", *Journal of Management Accounting Research*, No. 10, p. 239-277.

Maiga A. S., Jacobs F.A. (2005), "Antecedents and consequences of quality performance", *Behavioral Research in Accounting*, No. 17, p. 1-17.

Malmi T. (1999), "Activity-based costing diffusion across organizations: an exploratory empirical analysis of Finnish firms", *Accounting, Organizations and Society*, No. 24 (8), p. 649-672.

McGowan A. S., Klammer T. P. (1997), "Satisfaction with activity-based costing cost management implementation", *Management Accounting Research*, No. 9, p. 217-237.

Merchant K. A. (2006), "Measuring general managers' performances: market, accounting and combination-of-measures systems", *Accounting, Auditing and Accountability Journal*, No. 19 (6), p. 893-917.

Rogers E. (2003), *Diffusion of Innovation*, 5th edition, New York: Free Press.

Rogers E. M., Shoemaker F. F. (1971), *Communications of innovations: a cross-cultural approach*, 2nd edition, New York: Free Press.

Shields M. D. (1995), "An empirical analysis of firms' implementation experiences with activity--based costing", *Journal of Management Accounting Research*, No. 7, p. 148-166.

Staubus G. J. (1971), *The dark ages of cost accounting*, Boston: Irwin.

Tuomela T. (2005), "The interplay of different levers of control: a case study of introducing a new performance measurement system", *Management Accounting Research*, No. 16 (3), p. 269-292.

Ullrich M. J., Tuttle B. M. (2004), "The effects of comprehensive information reporting systems and economic incentives on managers' time-planning decisions", *Behavioral Research in Accounting*, No. 16, p. 1-17.

Verbeteen F. H. M. (2007), "Performance management practices in public sector organizations: impact on performance", *Accounting, Auditing and Accountability Journal*, No. 21 (3), p. 427-454.

Webb R. A. (2004), "Managers' commitment to the goals contained in a strategic performance measurement system", *Contemporary Accounting Research*, No. 21 (4), p. 3-23.