

APPLICATION OF THE INTEGRATED SYSTEM OF MEASURING THE PERFORMANCE OF BUSINESS SYSTEMS

Nataša Simić,

Faculty of business and law, MB University, Teodora Drajzera 27, Belgrade, Serbia
nsimic68@gmail.com

Abstract: *Contemporary performance measurement systems emerged as a consequence of the acknowledged weaknesses of the traditional measurement system. It is considered that the balanced scorecard is one of the most influential innovations contributing to the transformation of contemporary management accounting discourse and practice, and its occurrence is considered as the most important event for the development of contemporary performance measurement systems. Although, after the beginning euphoria, it was turned out that the design, implementation and development of contemporary systems in a dynamic and turbulent environment, that shape the current era, is not an easy task. The researches show that the companies have many problems during the design, implementation and development of the measurement system and this still fuels the academic debates about the relevance and validity of these systems. After the development of the Balancedscorecard concept, which not only evaluates organizational performance, but also relates it to the defined strategy, and the mass implementation of this system by renowned companies, a significant part of the scientific community assessed that it is one of the most important managerial techniques, and that the problem of performance measurement, in largely overcome. However, subsequent research has questioned the relevance of this system, and it has been shown that its implementation can even cause damage to the company. The paper indicates that judgment and great care is necessary during the design, implementation and development of an integrated system of measures, as well as that it is necessary to ensure a positive attitude of employees, as well as to be aware of the real scope of integrated systems of performance measures.*

Key words: *Balanced scorecard, contemporary performance measurement systems, performance measure*

1. INTRODUCTION

As a consequence of the perceived weaknesses of traditional performance measurement systems, which are based exclusively on financial (accounting) measures, an awareness of the need has developed inclusion of non-financial measures in measurement systems, which resulted in the so-called modern performance measurement systems. The development of the Balanced Scorecard concept in the early 1990s is considered a key event for the development of modern performance measurement systems, and the Balanced Scorecard itself has remained the most popular performance measurement framework to this day. Except for necessities diagnostics, modern performance measurement systems are also promoted as powerful strategic ones tool, which not only enables the translation of strategy into concrete activities, but is also used for just

defining the strategy, as well as for subsequent reviews of the adequacy of the adopted strategy. With a more massive application of modern performance measurement systems, especially the Balanced Scorecard, empirical research into the expediency of the implementation of these systems has been made possible. It turns out that the implementation of modern performance measurement systems often does not have the expected results effects, which encouraged research aimed at identifying problems in implementation and the application of modern performance measurement systems, but also a review of the theoretical validity of the framework i performance measurement methodology.

2. SEMANTIC CONTENT OF THE TERM „PERFORMANCE“

Performance measurement and management are the subject of numerous researches. This is the topic are engaged in by researchers from various scientific fields, and the most present among them are from the domain of management accounting, operational management, strategic management and operational research. This field, like hardly any other, is the subject of numerous special editions of the world's most prestigious scientific journals

magazines from the mentioned fields. Obsession with performance results in change multi-decade terminologies from the domain of management. Thus, at the end of the last century, it was stated that the term management control is sometimes considered outdated and is regularly replaced by the term "performance management". Development of strategic systems measurement, i.e. performance management, has led to this term being used today the meaning of organization management. Not only is the term "performance" used with different meanings, but, as they note French authors, this term, which is written equally in English and in French, is found in ova two languages different meaning. Emphasizing the complexity of the term "performance", Boutant and Verdier point out multidimensionality of this term. Referring to French literature, these authors point out that this the term benefits in three senses, primarily in the sense of an objective result, corresponding to ex post evaluation of achieved results; to also be seen as a realization process that integrates the engaged activities for achieving results; and finally, that the term "performance" refers to the subjective the result when it includes the intention of approaching the desired reality, subjective in nature, to express an opinion about the level of achievement or success. According to this last view, understanding performance requires judgment and interpretation and integrates as many dimensions as there are interested parties. Boutant and Verdier believe that there are four basic dimensions of performance, namely: (1) financial; (2) economic; (3) social; and (4) environmental dimension. The financial dimension refers to investor satisfaction and long-term goals companies (innovation and the company's ability to adapt to the environment, profitability of its own capital, competitiveness), the economic dimension refers to the maximization of the property's profitability with ensuring appropriate quality of products, ie services, social dimension, meeting the expectations of employees and the ecological dimension of environmental protection. It is interesting that all previously the exposed interpretations of the term performance differ from the meaning assigned

to this term in dictionaries. In our country, the question of the semantic content of this term is usually not even raised.

3. PERFORMANCE MEASUREMENT AND MANAGEMENT AS AN ACHIEVEMENT OF ACCOUNTING AND MANAGEMENT

Management accounting represents information support for decision-making by management.

The primary function of management accounting was to develop performance measures as an aid managers in business planning and control. For many years, the focus was on aggregates financial performance measures related to the organization as a whole, as well as to its segments. Johnson and Kaplan point out that the relevance of short-term financial a measure threatened by rapid changes in technology, shortened product life cycles and innovation in production operations. Reduction in the participation of direct labor and increased importance of intellectual capital i of other intangible resources have made reliance on traditional (financial) performance measures flawed and sometimes harmful. With that, they proposed the introduction of selected non-financial indicators, based on the organization's strategy, which include measures from production, marketing and research and development. The publication of the Balanced Scorecard by Kaplan and Norton in 1992 is considered a key event for development of modern models for performance measurement, and the Balanced scorecard is one of the most influential an innovation that contributed to changing the discourse of contemporary management accounting and practice. The last two and a half decades have been marked by an effort to develop appropriate performance measurement systems and numerous researches on realistic ranges and limitations of those systems. Most of the research on performance measurement systems comes from three different disciplines: management accounting, operational management and strategic accounting management. Developing the mentioned systems requires cooperation researchers from different scientific fields. Looking at accounting issues in isolation, exclusively reduced to the operational level, without simultaneously considering the strategic aspects of business, Robins he calls it myopia (short-sightedness), which can result in errors in formulation and implementation strategies. Today, most authors, and primarily those who deal with accounting and operational management, is focused on finding solutions, how to ensure connection of performance measurement system with strategy. Management requirements for a performance management system that would be helpful for evaluating effectiveness and efficiency in certain areas, such as production management, marketing and human resources management, led to the aspiration to be in all the mentioned functions develop performance measures. The last few years have seen a proliferation of measurement approaches performance in a range of disciplines, including management accounting, operational management, marketing, human resource management and strategic management. In some cases, researchers drew on the development of related disciplines. Often, the researchers knew which were parallel movements in related disciplines, but with very little cross-fertilization of ideas. Area of performance measurement is not, nor can it ever be, a separate field of academic study, as a consequence of diversity, stating that the most cited researchers in this field deal with different disciplines:

accounting, information systems, operational management, operational research, that they are directed to different research questions, that the research is based on different theoretical foundations and that apply different methodological approaches.

4. PERFORMANCE MEASUREMENT AND MANAGEMENT SYSTEMS OF BUSINESS SYSTEMS

Traditional systems for measuring the performance of organizations are usually based on ratings degree of achievement of short-term financial goals. It's been a long time it is known that business decisions cannot be made solely on the basis of financial information. Accordingly, no criticism of the traditional measurement system performances are not recent. It is emphasized that these systems can undermine production competitiveness by encouraging commitment to short-term goals. Besides moreover, it is pointed out the lack of strategic focus, on encouraging optimization on at the local level and the undermining of the continuous improvement system. Kaplan also emphasizes the irrelevance of information derived from the traditional of measurement systems for decision-making, and later with Johnson, and complete the irrelevance of this information for planning and control. Exploring the relationship between traditional performance measurement systems and career concerns of employees in non-profit organizations, recent research confirms that performance measurement has a critical impact on executive management, by potentially obstructing key investments in long-term infrastructure. Realization that traditional performance measures are not sufficient for performance management in modern conditions, as well as the realization of the importance of intangible assets for strategic realization is a consequence of the development of new approaches and models for measuring organizational performance, and in the past 30 years have seen a revolution in performance measurement and management. It is characteristic of these new models that, in addition to financial ones, they also contain non-financial ones performance indicators. It turns out, however, that it is extremely difficult to define and demarcate modern measurement systems performance. To begin with, it should be noted that these systems are mentioned in the literature under different names, which is not surprising since modern performance measurement systems are dealt with by researchers from different scientific fields.

Thus, these systems meet under the names: "integrated measurement systems." performance" (integrated performance measurement), "comprehensive performance measurement" performance measurement), "business performance measurement systems" "strategic performance measurement systems" (strategic performance measurement - SPM). On the other hand, more and more often researchers talk about management systems performance, and some mention measuring systems and performance management (Performance Measurement and Management Systems - PMM). These systems are as stated by these researchers, consists of two components, the performance measurement system and the system for performance management. However, we are not talking about some different, or new systems compared to modern performance measurement systems, but only in to the question of separating the characteristics into two systems that the authors of the previous expressions assign to the system for

performance measurement. A far bigger problem is that there is no agreement on which systems are considered modern performance measurement systems, as well as whether individual performance measurement systems are operationalized by certain performance measurement techniques or are, what some authors are considered to be techniques, in fact independent systems or concepts, there is no agreement as to what constitutes techniques the content of which system/concept, nor is there agreement on the very definition of individual ones techniques/systems/concepts. The aforementioned controversial issues are not without importance, since they are conclusions about the role and importance of the measurement system performance, that is, about the advantages of their introduction and the potential negative consequences that these systems can cause directly conditioned by the content of individual systems. The need to clarify what is meant by modern performance measurement systems has not gone unnoticed in the literature. The mentioned problem, apart from creating confusion, makes it impossible to compare the results of numerous studies and drawing conclusions. Most scientists define these systems in the context of their characteristics, and the most important is the use of both financial and non-financial ones indicators, while other authors, apart from the characteristics, point out their role or main processes, with an emphasis on identifying the strategy that has the greatest potential of translating the strategy into concrete activities and the role of evaluating to what extent it is the company achieved the set goals. In the literature, one can even come across the view that the complex nature of modern performance measurement systems cannot be express with one definition. To make the problem worse, not only is it not entirely clear what is meant by modern measurement systems performance implies, but there are even different points of view on what is meant by certain systems (techniques) implies. So, for example, in business practice, and thus also in professional literature, it rules confusion about what Balanced scorecard actually means, i.e. what are the characteristics of Balanced scorecard concept. This problem is mentioned by Kaplan and Norton pointing out that many companies falsely declare that they apply the Balanced Scorecard simply because they use a mix of financial and non-financial indicators. True, the fact that the Balanced scorecard has undergone several modifications, namely that Kaplan and Norton permanently expanded this concept, and the users themselves, once the system was implemented step by step step forward, thereby expanding its scope, makes clearly defining this concept difficult achievable. Systems of multi-criteria main performance indicators in relation to other measurement systems performance also seems highly contested. Nevertheless, the vaguely defined content of modern performance measurement systems does not make the results questionable the largest number of researches, since the subject of research is most often related to the application of Balanced scorecard, or, far more rarely, the Performance Prism. It is widely believed that there are numerous advantages to the introduction of modern measurement systems performance, especially the Balanced scorecard. Emphasizing the importance of modern measurement systems, some the authors point out that this system for the company is a counterpart to the human nervous system. In general, it is considered that of the appropriate performance measurement systems, organizations can benefit in:

- Strategy formulation, implementation and review;
- Communication of achieved results to stakeholders (interested persons), thus strengthening corporate brand and reputation;
- Motivating employees at all organizational levels, promoting a culture of improvement performance, and encouraging organizational learning.

5. LINKAGES OF PERFORMANCE MEASUREMENT SYSTEMS AND BUSINESS STRATEGIES

Enterprise management is generally defined in literature and practice through three dimensions. They are formulating a strategy, adapting and/or creating an organization and determining a system of measures performance. Problems in practice arise in the implementation of all dimensions, and are especially pronounced in clearly determining the strategy and its fitting into the appropriate performance system. Performance measures should provide a systemic approach translating the strategy into clearly predictable measurable goals, as well as supporting the goal setting itself. It is believed that modern performance measurement systems can be useful in implementation strategies since they help in the formulation of strategic assumptions and in the identification of potential ones problems related to the defined strategy. In the literature in the field of strategic management, modern performance measurement systems are most often used are called strategic performance measurement systems (strategic performance measurement - SPM), which emphasizes their importance for strategic management. It has already been noted that there is considerable confusion around the very definition of modern performance measurement systems. Therefore, it is impossible to a precise way to talk about the relationship of these systems with the company's strategy. It seems far more correct talk about the relationship between concrete systems and strategy. In the literature, it is often (mostly weak argued) points out that for the purposes of strategic management, the Balanced scorecard represents the most adequate and complete system. Before developing Balanced scorecard, managers lacked a framework for describing strategy, according to Kaplan and Norton, and managers could not implement something they could not describe well. Therefore, simple the act of describing the strategy using strategy maps in the Balanced Scorecard is an outstanding contribution. The strategic map, which forms a set of hypotheses with causal effects, represents a tool for detailing strategies. It's important here point out that the Balanced Scorecard has evolved significantly over time, and that the importance of the Balanced Scorecard for strategic management is not always the same. Namely, Balanced scorecard (BSC type I) is designed as a multidimensional framework for strategic performance measurement in which financial and non financial indicators, subsequently this system was improved by describing the strategy establishing cause-and-effect relationships (BSC type II), in order to present itself today as a means for implementation of the strategy, bringing it into relation with the defined goals, action plans, results and incentives (BSC type III). It is important to point out that the aforementioned opinion on the Balanced scorecard, as the most adequate and complete system, which is prevalent in the literature and often contested. The number of companies that have introduced

performance measurement systems in recent years has made it possible conducting more research. The results of certain researches suggest that the existence modern performance measurement system improves the management's discussion about strategy and it helps focus their attention on what really matters to the organization. Numerous researchers believe that modern measurement systems performance effective mechanisms for (a) involving managers in the formulation and review process strategies (b) facilitating the implementation of the strategy, facilitating its operationalization, that is translating the strategy into concrete actions; (v) encouraging managers to strategize the organization accept as a continuous process; (g) directing actions towards achieving strategic goals. However, the extent to which modern performance measurement systems can influence strategic processes is conditioned by the way in which it is the system designed, developed and how it is used, as well as the cognitive limitations of management. The results of several studies indicate that modern performance measurement systems increase strategic capabilities of the organization, especially in the area of encouraging innovation (new ideas, products and ways of doing work) and organizational learning. Results of research by Bisbe and Otley (2004) indicates that performance measurement systems favor innovative capabilities exclusively in companies with a low rate of innovation, while reducing the innovation of companies with a high rate innovation. Therefore, there is a link between performance measurement systems and management, but the positive or negative nature of this relationship is uncertain and determined by a number of factors. However, a number of researchers dispute the strategic nature of the Balanced Scorecard framework. Weber and Schaffer (2000) is of the opinion that the Balanced Scorecard can only be viewed as a system for diagnosing performance, ie only as one step towards active management performance. Given the multitude of measures, managers who would use the Balanced Scorecard as one interactive system, would be overloaded, while strategic supervision of the original premises cannot be taken into account in an adequate way. Exploring the relationship between the Balanced scorecard and strategy on the example of Finnish companies, Malmi (2001) concludes that there is not significant attempts to connect the Balanced scorecard and budgeting, and concludes that the Balanced scorecard it is used more as an information system than as a strategic management system. However, it is indicated that the redefinition of strategies, as a consequence of constant structural change in the environment, not accompanied by a redefinition of the performance measurement system. While in theory points out that the establishment of a performance measurement system is a key lever for formulating a strategy, its realization as well as subsequent control, and that the measurement system is correctly designed performance one in which performance measures are integrated with strategy, practice indicates a large gap between performance measurement systems and strategy. The strategic dimension of the Balanced Scorecard framework is disputed by all researchers who dispute the theoretical dimension the basis of this concept.

6. LIMITATIONS OF MEASURING AND MANAGING THE PERFORMANCE OF BUSINESS SYSTEMS

After the initial euphoria, and even emphasizing the necessity of introducing modern measurement systems performance, and especially the Balanced scorecard, an increasing number of researchers point out that there are no convincing ones evidence of the benefits of introducing this system, especially taking into account the costs of introduction and maintenance. They state that innovations in performance measurement are the result "innovations and trends", and that measurement systems are adopted because organizations support one the other and want to look modern. It turns out, however, that research that proves success applications of this concept should not always be taken for granted. So some effort was made to demonstrate the impact of Balanced scorecard, but their approach was largely anecdotal in nature. Speckbacher et al., on the other parties note that many studies suffer from methodological flaws, such as bias in sample selection, low response rate to questionnaires or unreliable assumptions, while Franco-Santos et al., state that the results of certain researches that confirm satisfaction with the performance measurement system should be taken with great caution, since they respondents were mostly people employed in accounting and finance, which are by nature of things biased, since it is from these services that the introduction and development of the measurement system is promoted performance. The absence of the expected positive effect is seen in different ways. While one group of authors highlights practical problems in the implementation and application of performance measurement systems, or more correctly in other words, certain systems, most often the Balanced Scorecard, and lists various abuses or side effects resulting from an inadequately designed and/or implemented measurement system, no disputing the theoretical validity of the concepts, another group of authors is disputing the theoretical validity itself framework and methodology, that is, they dispute the reality of the very assumptions on which the system is based established.

7. PROBLEMS IN THE IMPLEMENTATION AND APPLICATION OF THE SYSTEM

In the literature, it is often pointed out that companies inadequately implement the performance measurement system. In practice, it often happens that the management is not clear about what they are key performance indicators, resulting in the establishment of a measurement system with inappropriate indicators. Ittner and Larcker (2003) state that only 23% of companies from of the examined sample consistently built and tested the causal models that support the measurement system performance. Ittner and Larcker (2003) state that a frequent problem is that companies do not identify i analyze the relevant non-financial measures and that they do not implement appropriate actions, and especially that focus on non-financial measures that are not related to the chosen strategy. According to these authors, the most common mistakes in constituting the system of non-financial measures performances are:

- not connecting the measure with the strategy;
- not checking assumptions about the nature of the link between measures and strategy;
- incorrect establishment of target performance;
- wrong measurement.

Problems related to the implementation of the Balanced Scorecard are often highlighted in the literature. Kasurinen (2002) notes that the Balanced Scorecard is a good populist concept, and that it represents a theoretical reference framework but that Kaplan and Norton did not provide any help in overcoming the difficulties in the implementation. This is in agreement with Tayler's (2010) view that the implementation is Balanced The scorecard concept is under-researched. Stating different types of identified obstacles in the implementation process of the Balanced scorecard, Kasurinen (2002) highlights the lack of time and resources as a potential problem, since not everyone is in the organization ready to invest enough time and funds to implement the project. In addition, he states that resistance can also arise due to the perception of individuals that the Balanced Scorecard threatens their interests. Implementation problems Balanced scorecard concepts faced by Scandinavian companies, Madsen and Stenheim are classified into four groups: (a) conceptual problems; (b) technical problems; (c) social problems; and (g) problems of a political nature.

Table 1. Four categories of problems in the implementation of the Balanced scorecard concept

Problem Type	Problem	Explanation
Conceptual problems	Contextualization	Balanced scorecard represents a "general model" that can be difficult to adapt
	Causality	Organizations have difficulty understanding and testing causal relationships
	Strategic maps	Organizations have difficulty understanding how to implement strategy maps
Technical problems	Technical aspects	Organizations have problems with data collection and automation
Social problems	Organizational culture	Balanced scorecard may be incompatible with organizational culture, for example not accepting measurement
	Participation	Employees may be passive or block the implementation process
	Commitment	Lack of commitment from central participants in the organization, such as top management or the project group

Problems of a political nature	Time and resources	Implementation. A balanced scorecard requires significant time and resources
	Responsible person	The organization does not have a person who implements the implementation project
	Continuity	Continuity of the project may be threatened due to changes in the scope of work
	Resistance	Employees are resisting the implementation of the Balanced Scorecard

Source: Madsen and Stenheim, 2014, pp. 123-124

In the literature, it is emphasized that the problems related to the implementation and use of modern systems can reduce by involving employees in the design and development of the system, by establishing challenging set but achievable measures of performance and goals and meaningful introduction of rewards (bonuses) in connection with them, as well as by supporting an effective communication mechanism, which encourages feedback information, dialogue and employee participation. They are in the literature identified and certain circumstances, which adversely affect the success of the adequate implementation and use of performance measurement systems, such as organizational culture dominated by engineers or direct management of the organization from by his/her owners. The cultural characteristics of the nation, as well as the organizational culture which has a significant impact on the acceptance and development of the Balanced Scorecard framework.

8. CONCLUSION

As a consequence of observing the shortcomings of the traditional performance measurement system based on exclusively on financial measures of performance and identifying the negative impacts of such application system, several measurement systems have been developed which, in addition to financial ones, also include non-financial measures. These systems, and especially the Balanced Scorecard, have been attracting the attention of researchers for more than two decades as well as practitioners. Unlike the traditional model of performance measurement, which is primarily oriented towards performance diagnostics, modern performance measurement models, and especially the Balanced Scorecard as the most polar framework, are promoted as powerful strategic tools that facilitate processes (re)defining and realizing the strategy, providing a systematic approach to translating the strategy into a clear one predictable measurable goals. Wide application of modern performance measurement systems in practice, a above all, the Balanced Scorecard, enabled numerous empirical studies of the impact of these systems on performance, and especially testing the expediency of introducing these systems for strategic

purposes management. It turned out, however, that the introduction of non-financial performance measures is not always beneficial a consequence of the expected benefits, and occasionally even negative consequences are manifested. Inconsistent conclusions about the impact of the application of modern performance measurement systems have been imposed researchers, not only the need to identify problems, i.e. limitations in implementation and application of modern performance measurement systems, but also the need to review the theoretical validity framework and methodology for performance measurement. Despite numerous well-argued criticisms of the Balanced Scorecard, it's hard to disagree stating that the importance and impact of the Balanced Scorecard framework should not be underestimated. As a framework and concept, the Balanced Scorecard has inspired a generation of practitioners and members academic community. The current challenge is to improve this framework. If in that fails, we are in danger of falling into the trap of applying solutions in the present proposed to solve the problems of the past.

LITERATURE:

1. Bisbe, J., Otley, D. (2004): *The effects of the interactive use of management control systems on product innovation*, Accounting, Organizations & Society, 29: 709-737
2. Boutant, J., Verdier M-A, *Les stratégies de communication sur la performance: le cas des sociétés françaises en difficulté*, Comptabilité sans Frontières, The French Connection, May 2013, Canada. pp.cd-rom < <https://hal.archives-ouvertes.fr/hal-00991974>>
3. Franco-Santos, M., Lucianetti, L., Bourne, M. (2012): *Contemporary performance measurement systems: A review of their consequences and a framework for research*, Management Accounting Research 23, 79– 119
4. Ittner, C., Larcker, D., Madhav, R. (1997): *The choice of performance measures in annual bonus contracts*, Accounting Review, 72(2), 231-255
5. Kaplan, R. (2012): *The Balanced scorecard : comments on Balanced scorecard commentaries*, Journal of Accounting & Organizational Change, 8(4), 539-545
6. Kaplan, R., Norton, D. (1992): *The Balanced scorecard -measures that drive performance*, Harvard Business Review, 70(1), 71–79
7. Madsen, D. Ø., Stenheim, T. (2014): *Perceived problems associated with the implementation of the balanced scorecard: evidence from Scandinavia*, Problems and Perspectives in Management, 12(1), 121-131
8. Pavlović, V. (2007): *Značaj i međuzavisnost finansijskih i nefinansijskih informacija za poslovno odlučivanje*, Računovodstvo, 51(11/12), 74-93
9. Robins, J. et al. – Ed.(2010): *New editor announcement and introduction to special issue*, Long Range Planning 43, 463-464
10. Speckbacher, G., Bischof, J., Pfeiffer, T. (2003): *A descriptive analysis on the implementation of Balanced scorecard s in German speaking countries*, Management Accounting Research 14(4), 361–388