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## Research on usage of the balanced scorecard in business practice of Czech and Slovak companies

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### Abstract

Nowadays, the balanced scorecard (BSC) concept is considered to be a strategic tool for measuring and managing the performance of a company. For this reason, this paper focuses on the presentation of selected research results related to usage of the BSC concept carried out in Czech and Slovak enterprises during the period 2006–2015. A theoretical part of the paper provides a detailed characterisation of the current state of affairs regarding the investigated BSC issue. The following part of the paper defines the basic research methodology and the expected contributions of the study. The fundamental part of the paper provides a presentation of the BSC usage results in Czech and Slovak enterprises. The aim of this paper is also to analyse and synthesise findings regarding the link between the BSC concept and the reward and remuneration system in the companies researched. In the final part of the paper, the survey results are introduced and confronted with those arising from professional studies carried out especially in Germany, Austria and the U.S.A.

Keywords: Balanced scorecard, performance management, performance measurement.

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## 1. Introduction

The world of business environments in modern economies and cities has changed dramatically the way of pursuing business and depends heavily nowadays on the performance in generating and utilising new knowledge, imagination, creativity, innovations and technologies. In order to stay competitive firms measure, monitor and analyse their performance (Kourtit & Nijkamp, 2011).

Measuring and managing of business performance is a complex and difficult process, which at the present time in the theory and corporate practice is passing through significant changes. The term performance measurement thus indicates methods for performance measurement and evaluation, which through the use of multidimensional scales help to assess the effectiveness and efficiency of performance and performance potentials of different objects in the enterprise (Zamecnik & Rajnoha, 2015).

Based on a critical literature review, we identified the following most frequently used methods and performance management and measurement tools (Zamecnik & Vystupova, 2012):

- Management accounting (based on the traditional absorption costing and alternative variable costing)
- Process management accounting method (including the concepts of ABM, Activity Based Costing (ABC), ABB)
- Controlling
- Classical financial performance indicators (especially indicators of the absolute value of earnings, cash flow and profitability indicators)
- Balanced scorecard (BSC)
- Total quality management (including the concepts of European Foundation for Quality Management (EFQM), Malcolm Baldrige National Quality Award, Six Sigma, Benchmarking)
- Value based management (VBM)
- Theory of constraints
- Business process reengineering
- Lean production (including JIT and Kanban concepts).

Recently, company managers utilise a number of concepts for the management of performance, including BSC, economic value added (EVA), benchmarking and many others (Chodur, Pavelkova & Knapkova, 2011). Mensik, Petera and Wagner (2012) deal with performance measurement and management systems with a focus on BSC, and they found statistically significant differences between BSC adopters and BSC non-adopters with regard to utilisation of activity-based management.

For this reason, this paper is oriented on the presentation of selected research results focused on one of the most popular performance measurement concepts mentioned in the professional literature – BSC and its usage in business practice.

## 2. Literature review

In the paper, 'Analysis of companies' performance (manufacturing of transportation machinery parts sector in the Czech Republic) with a focus on Japanese companies', Blahova and Palka (2013, p. 113) states the need for companies to transform management intentions into reality and align their performance measurement systems with their strategic goals, which is well documented in the literature (Kaplan, 1983; Eccles, 1991; Gregory, 1993 or Hudson, Smart and Bourne, 2001) mention. To address this, a number of frameworks and processes (approaches) for the development of performance measurement systems have emerged. Among the most popular of these is the BSC (Kaplan and Norton, 1992), which emphasises a balance between the use of financial and non-financial measures to achieve strategic alignment. The popularity of the BSC has acted as a catalyst for further

research into the characteristics of, and approaches for developing, strategic performance measurement systems (Bititci et al. 1997; Neely et al. 1996; Oliver & Palmer, 1998).

The BSC methodology has become popular since its introduction by Kaplan and Norton in 1992 (Rajnoha, Lesnikova & Koraus, 2016). It was proposed as a strategic approach and an organisational performance evaluation that can be used for strategy and policy implementation (Kaplan & Norton, 1996).

Niven (2006) states that the Harvard Business Review magazine recently labelled BSC as one of the 75 most influencing ideas of the entrepreneurial sector of the 20th century. Enforcing new concepts, mostly criticising the traditional approach, is the continuation of such tasks. According to Niven (2006), the BSC importance is highlighted for the following reasons:

- Financial measures and their introduction – he claims that the financial measures are not in compliance with the actual business environment. Financial measures are excellent if using the past view and are inclined towards functional orientation. Financial measures miss the long-term view but they concentrate on the short-term view. Financial measures do not form a relationship within all the corporation levels.
- Growing importance of intangible assets – their share is growing and forms about 75% of the value resources, but they do not commonly show in accounting. They can be, for example, high-quality products and services, motivated and experienced employees, flexible and predictable internal processing, and satisfied and loyal customers.

Horvath (2002) added to the list with:

- Enforcing the strategy – in reality, it is a big problem to enforce the strategy, mainly with its sharing and communication.
- Necessity for clear reporting – most of the information is from the operation reporting only, lacking information about the strategy and long-term overview.

It can be used for strategy and policy implementation. BSC represents a translation of business strategy into a set of measures by defining the long-term strategy, objectives and the mechanism for achieving and obtaining feedback regarding the objectives (Thanaraksakul & Phruksaphanrat, 2009).

### **3. Research objectives and methodology**

This paper presents selected results and outcomes of three research studies oriented on mapping of the current situation related to the usage of BSC concept carried out in Czech and Slovak enterprises during the period 2006–2015.

Our first research study (2006–2008) was oriented on encouraging and determining responses to questions that characterise the situation extant in the field of evaluation of the quality of the performance of the controlling function in the enterprises we investigated.

The user database of the company – Controller-Institut, Contrast Consulting Praha, spol. s.r.o (Prague, Co. Ltd.) – was used for the purpose of identifying and selecting appropriate respondents. The actual subject of our first research study was therefore the 56 Czech and Slovak enterprises and organisations that filled in and returned our questionnaire and that were part of the Controller-Institut, Contrast Consulting Praha, spol. s.r.o. database.

Very similar research was performed during 2009–2012. At that time, one of the authors was a research team member of the Grant Project GACR 402/09/1739 (The Creation of a Model for Measurement and Management of Company Performance). Within the project an extensive questionnaire survey was carried out and it was attended by 402 companies from the entire Czech and Slovak Republic. The outcomes consist of the ways enterprises measure and manage their performance and of the level of their satisfaction with the concepts used for performance

measurement and management. The structure of the questionnaire was focused on the same objectives as in 2006–2008.

The achieved research results were further compared with the results of the following surveys carried out abroad, for example:

- ‘Management Tools and Trends’ studies by Bain & Company represent an overview of the management tools that are being used and the satisfaction of managers with these tools from 1993 to 2010. The survey is conducted regularly every year worldwide. The last questionnaire survey was carried out in 2010 (Rigby & Bilodeau, 2011) and reflects the behaviour of enterprises in 2010. Questionnaires were completed by managers of 1,230 firms from different sectors. They were focused on the use of 25 management tools.
- The study ‘Business Performance Management: Current State of the Art’ was prepared by Marr (2003), based on the results from the questionnaire survey that was performed in 2003. Within the survey, data from 780 large U.S. companies were obtained. This study responded to the fact that only a few reliable studies have documented the status, common practices and benefits of corporate performance measurement.
- The study ‘BSC in Indian Companies’ (Anand, Sahay & Saha, 2005) is aimed at research on using the BSC concept in private Indian companies. The research took place in 2002–2003, the authors built on the sample of 53 firms that responded to a questionnaire.

The main goal of the third stage of our research (2012–2015) was to analyse the utilisation rate of traditional and modern indicators, methods and models of an enterprise performance. A part of the research was to find dependencies between the BSC concept and the reward and remuneration system in the companies researched.

For the purpose of research, and due to the goals set, we decided to collect the data and information needed through an extensive online research questionnaire. In total, more than 1,500 enterprises and organisations were addressed via e-mail or phone communication and, above all, by means of a directive interview. In the end, 164 enterprises and organisations filled in the questionnaires that were subsequently examined.

Whereas for the data collection and completion of research questionnaires from businesses we used the online web form, after the conclusion of the two-round data collection, it was possible to automatically generate a database of all data collected in the form of an MS Excel, which was then imported to the software Statistica 10 CZ and Statistica 10 data mining for further mathematical and statistical processing of obtained data in the form of secondary research. For statistical analysis of the impact of selected parameters on the performance of the company, respectively, the statistical methods of correlation and linear regression were used (Rajnoha, Stefko, Merkova, & Dobrovic, 2016).

Data from three questionnaire surveys were analysed in the research in order to get better and more accurate results and because of a need to compare the evolution of the researched indicators. Table 1 shows the structure of the statistics file.

**Table 1. Structure of the researched enterprises (source: own)**

Year/enterprise category	Total	Relative
2006–2008		
Micro	5	8.93%
Small	16	28.57%
Medium	17	30.36%
Large	18	32.14%
2009–2012		
Micro	40	9.95%
Small	109	27.11%
Medium	144	35.83%
Large	109	27.11%
2012–2015		
Micro	36	21.95%
Small	85	51.83%
Medium	21	12.80%
Large	22	13.42%

#### 4. Results and discussion

This section contains the selected results and outcomes from all the three research phases mentioned above. The particular aim of the first research period (2006–2008) was to clarify which systems for measuring and evaluating company performance levels are used most frequently in the everyday practices of Czech and Slovak enterprises. It is composed of nine sub-questions in total, which represent a particular company process performance level measurement and evaluation methods (a – i, see below). The results and outcomes of the analysis of this part of the questionnaire are shown in Table 2.

**Table 2. Relative frequency of responses – methods for measuring and evaluating company performance levels (source: own)**

Performance Measurement Methods	Size:				Overall average:
	1	2	3	4	
The ABC method	0.40	0.13	0.24	0.33	0.25
The BSC method	0.00	0.25	0.09	0.39	0.22
The benchmarking method	0.00	0.25	0.47	0.56	0.39
The EFQM method	0.00	0.06	0.12	0.11	0.09
The performance pyramid method	0.00	0.00	0.00	0.00	0.00
The six sigma method	0.00	0.00	0.06	0.11	0.05
The Du Pont system of indices	0.20	0.13	0.15	0.17	0.15
The VBM	0.00	0.06	0.06	0.11	0.07
Others	0.00	0.06	0.24	0.33	0.20

The BSC method surprisingly ranked third in its level of use in the enterprises and organisations that we investigated, to the conclusion of our evaluation. It is used by only 22% of enterprises and organisations to measure and evaluate their process performance levels. These results however, roughly correspond to the outcomes of the research that was conducted by the Controller-Institut, Contrast Consulting Praha, spol. s r.o. company in 2002. This study was in the form of a questionnaire-based investigation and was targeted on respondents in managerial positions. A total of 384 enterprises and organisations were randomly selected from its database, of which 56 enterprises or organisations responded, which represents a return (response) rate of not quite 15%. A positive fact is that 83% of the respondents knew the term BSC.

The research conducted in 2009–2012 concentrated on usage of performance measurement concepts with a focus on the BSC concept. Furthermore, the results regarding the usage of the BSC concept were compared with those used abroad.

To clarify the vision, objectives and strategy of the company and their shift into concrete actions, to planning and communication, the application of the BSC concept is used, identified by the Harvard Business Review magazine as one of the 75 most influential business ideas of the 20th century. The use of the BSC concept in the world is illustrated in Figure 1, based on the results of research conducted by Bain & Company. According to the research results, satisfaction with application of the BSC concept reaches a value of 3.63 on a five-point scale (1 – dissatisfaction, 5 – highest satisfaction) (Rigby & Bilodeau, 2011). Research in the U.S.A. (Maar, 2003) showed that more than 35% of companies in the sample use the BSC concept. According to a study by Indian authors, the BSC concept is applied to 45% of the sample firms (Anand, Sahay, Saha, 2005). Previous surveys confirm similar use at 44% (Rigby & Bilodeau, 2009) and 40% (Joshi, 2001).

According to the research carried out by Tomas Bata University in Zlin, on average only 17% of companies use this concept. In terms of size, it is rather preferred by medium and large firms (in the sample, the concept is applied to 2.5% of micro firms, 11% of small firms, 19% of medium and 27% of large firms). Regarding the focus, the BSC concept is applied in 19% of firms dealing with manufacturing, 19% specialising in services and 14% aimed at trade. BSC is used more often by older enterprises: enterprises established before 1990 use it in 22%, enterprises found in the period 1990–2000 in 18%; enterprises set up after year 2000 use it only in 10%. Pursuant to a five-point scale, the evaluation of satisfaction with the application of the BSC concept is in comparison with the world lower, at a value of 3.63.

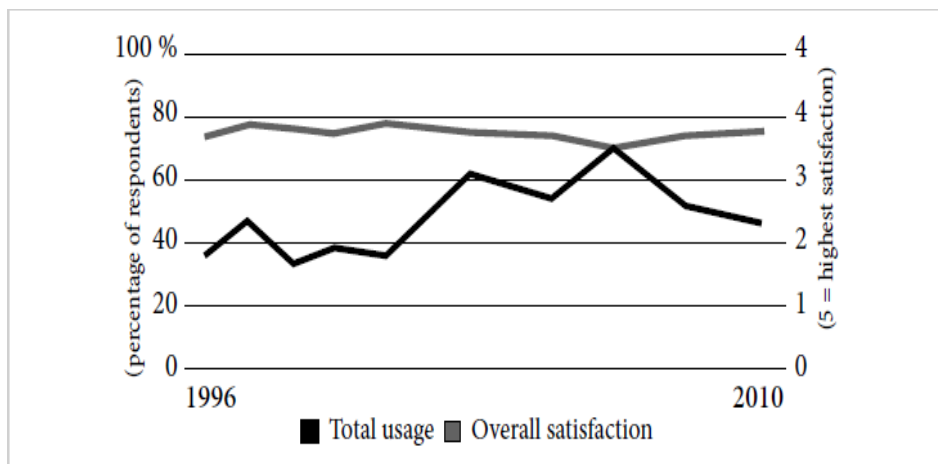


Figure 1. Overview of the application of the BSC concept in the world and satisfaction with its use during 1996–2010 (source: own)

Based on the results of research conducted by Kolarik and Pavelkova (2007), 5% of the companies had implemented the concept by 2006, while 20% planned its implementation and 17% of managers of enterprises were not aware of this concept in the sample at all. From the sample examined by Siska (2007), 19% of enterprises applied the BSC in their management practices; the same result is indicated by Horova and Hrdy (2007). Svobodova, Hynek and Janecek (2010) state the use of BSC in 24% of companies.

In the third stage of our research (2012–2015), we present the selected results regarding the link between the BSC concept and the reward and remuneration system in the companies researched.

An important discovery was that 80% of the enterprises and organisations that were approached perceived the BSC method as underpinning and supporting the measurement and evaluation of

process performance levels, and 56% of them also saw a link with the reward and remuneration system. We analyse this phenomenon more deeply in various industries in Slovakia, along with other select tools and concepts of strategic business performance management from the quantitative point of view, analysing the frequency of their use in the firms. The analysis of the frequency of use of the concepts, methods and tools for strategic management of business performance is based mostly on the data given in Table 3. The analysis shows that in the long term, companies most often use data mainly from financial accounting (as many as 86% of enterprises). The data taken from managerial accounting (47%) and quality management systems (45%) are also used quite intensely for more than 5 years. The concept of controlling is also relatively popular, as about 39% of companies reviewed use it and an additional 9% of companies plan to use it in the future. Other concepts and tools are used in very limited numbers.

**Table 3. Frequency response: The use of selected concepts and tools for strategic business performance management (source: own)**

Selected concepts and tools for strategic business performance management		We do not use it	We do not use it but we plan to	We have used it for < 2 year	We have used it for 2–5 years	We have used it for > 5 years
1	Financial indicators based on	17	6	20	20	101
%	data from financial accounting	10.37	3.66	12.20	12.20	61.59
2	The outputs from managerial	73	14	14	10	53
%	accounting	44.51	8.54	8.54	6.10	32.32
3	Controlling	85	15	16	13	35
%		51.83	9.15	9.76	7.93	21.34
4	BSC	142	7	3	6	6
%		86.59	4.27	1.83	3.66	3.66
5	EVA	123	7	12	8	14
%		75.00	4.27	7.32	4.88	8.54
6	ABC costing	116	11	6	7	24
%		70.73	6.71	3.66	4.27	14.63
7	Knowledge information system	134	18	3	4	5
%	type business intelligence	81.71	10.98	1.83	2.44	3.05
8	Quality management system	78	12	9	18	47
%		47.56	7.32	5.49	10.98	28.66
9	Lean and Kaizen management	144	4	6	5	5
%		87.80	2.44	3.66	3.05	3.05
10	The concept of CRM	142	8	5	4	5
%		86.59	4.88	3.05	2.44	3.05
11	The key performance indicators	129	7	4	12	12
%		78.66	4.27	2.44	7.32	7.32

The BSC methodology has a demonstrable impact on the company's performance (Table 4). The residue levels (Table 5) show that by using this methodology the firm can reach above-average levels of ROE over 7%. The firms that do not use the BSC methodology only achieve average or below-average results (ROE below 7%) (Rajnoha et al. 2016).

**Table 4. Pivot: set 1; BSC methodology x performance – statistics (source: own)**

Statistics	Chi-squared	sv	p
Pearson's chi-square	12.78406	df = 2	p = .00167
ML chi-square	10.11521	df = 2	p = .00636
Contingency coefficient	0.2689137		
Cramer's V	0.2791981		

**Table 5. Pivot: set 1; BSC methodology x performance – Frequency (source: own)**

BSC methodology	Group 1 poor performance (ROE < 0, 0–2%)	Group 2 medium performance (ROE 2–4%, 4–7%)	Group 3 high performance (ROE 7–10%, above 10%)	Row totals
The observed frequency				
BSC is not used	68	58	23	149
BSC is used	4	3	8	15
Total	72	61	31	164
Expected frequency				
BSC is not used	65.41463	55.42073	28.16463	149.0000
BSC is used	6.58537	5.57927	2.83537	15.0000
Total	72.00000	61.00000	31.00000	164.0000
Observed minus the expected frequencies (residue)				
BSC is not used	2.58537	2.57927	–5.16463	0.00
BSC is used	–2.58537	–2.57927	5.16463	0.00
Total	0.00000	0.00000	0.00000	0.00

## Conclusion

Comparison of results of different field surveys has its advantages in comparing different researches and enriching discussion of results of individual researches. On the other hand, there are very serious limits and difficulties arising from different samples of enterprises (their specialisation, size, 'age', etc.) within each survey. Another problem lies in different approaches to understanding the performance of companies, not only from the theoretical conception but also from the perception of the business managers themselves.

The outcomes of research focused on performance measurement and management of enterprises in the Czech and Slovak Republic and their comparison with research studies in the world confirm that although firms in the CR and SR have been gradually accepting a number of concepts and tools to measure and manage performance, are more familiar with them and apply them as well, a great majority of their usage is still limited in comparison to the rest of the world. An important tool for the performance measurement and management in most companies are financial indicators. A number of especially large firms use outputs from the management accounting and controlling; a high utilisation rate is also evident in quality management tools. The results also confirmed the uniqueness of the BSC concept as being a very important strategic tool of measurement and management of the company performance.

Another part of our research (2016–2017) is aimed at identifying synergetic effects between the individual concepts of performance measurement and management that were identified in the previous phase of the research.

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