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Evaluation of process performance in companies operating in Slovakia

Zuzana Papulova^a, Faculty of Management, Comenius University in Bratislava, 10 Odbojarov, 820 05 Bratislava, Slovakia

Maros Slenker^{b*}, Faculty of Management, Comenius University in Bratislava, 10 Odbojarov, 820 05 Bratislava, Slovakia

Andrea Gazova^c, Faculty of Management, Comenius University in Bratislava, 10 Odbojarov, 820 05 Bratislava, Slovakia

Jan Papula^d, Faculty of Management, Comenius University in Bratislava, 10 Odbojarov, 820 05 Bratislava, Slovakia

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Abstract

One of the current approaches to performance management is based on examination of organisational performance through measurement and evaluation of the processes. Processes provide an excellent basis for the arrangement of a measurement system and performance management. The application of the process approach in performance management is based on the evaluation of processes rather than on the output results. Based on our research, we bring findings about approaches to process performance evaluation of companies operating in Slovakia. The aim of our research is to assess current approaches for evaluation of process performance in the context of application of process orientation in companies operating in Slovakia. We used questionnaires to collect data. Our sample consists of 137 companies from various sectors, sizes and age to obtain a broader overview. The results show the level of utilisation of process management and approaches to evaluation of process performance towards process improvement.

Keywords: Performance measurement, business processes, process performance;

* ADDRESS FOR CORRESPONDENCE: **Maros, Slenker**, Faculty of Management, Comenius University in Bratislava, 10 Odbojarov, 820 05 Bratislava, Slovakia.

E-mail address: maros.slenker@fm.uniba.sk / Tel.: +421-2-50-117-629

1. Introduction

In the current competitive environment, companies are forced to continually improve the quality of their products and services to stay ahead in the competition. The focus on processes inside the company can help to meet and to adapt faster to influences and trends outside of the company. The current environment is influenced by many challenging factors from globalisation, technological development and the rapid spread of new technologies and knowledge (Hvizdova et al., 2016). All external factors should be also continuously monitored and considered as they can influence the operation and performance of the company. However, the first concerns should be oriented inside the company and to its operation, processes and performance.

As we can see from the management history, companies have always been searching for new ways and new approaches to improve their performance, operation and the overall results. In recent years, the concept of a process-oriented company has received a lot of attention. Many researches (Glavan, 2011; Ladeira et al., 2016; Skrinjar, Vuksic & Stemberger, 2010; Vuksic, 2015; Weitlaner, 2012) suggest that process orientation leads to better performance of the company. In this context, evaluation of process performance is essential for understanding of the possibilities to improve performance of the company. In addition, evaluation of process performance provides opportunities to recognise problems and to take corrective actions before these problems escalate.

Therefore, the main purpose of our study is to search for possibilities of how to improve the performance of an organisation through business process management and process evaluation as a part of performance measurement. The aim of our research is to assess current approaches for evaluation of process performance in the context of application of business process management and process orientation in companies operating in Slovakia.

This paper is organised as follows. In the literature review, we discuss the history and development of performance measurement. Performance measurement is not a new topic, but has had an interesting aspect of development over the past years. We also connect the topic of performance measurement with process approach and business process management. In the third section, we describe the data and methodology of our research. The results of research and discussion are presented in the section four. The last section of the paper summarises and concludes our main findings and recommendations.

2. Literature Review

2.1. Evolution of performance measurement

In general, the evolution of performance measurement theory can be divided into three main periods. The first period can be tracked to the early 20th century. This period is characterised by the foundation of operational management as a discipline, which was based on the emerging ideas of movement towards scientific management (Radnor & Barnes, 2007). In this period, managers used operational measurement systems to find out how efficient their companies were. For a long time, the most popular measurement system was the DuPont scheme, which was introduced in 1919 by the DuPont Company. DuPont use a pyramid of financial ratios, which link financial ratios to return on investment and also link measures at different levels (Neely, 2002). Although later, the DuPont scheme had been heavily criticised for its cost focus providing historical view with little indication of performance improvement and short-term orientation (Bruns, 1998), or for the focus only on financial measures as they should be only part of performance measures (Kaplan & Norton, 1996); Du Pont is still widely recognised as the founder of financial performance measurement (Neely et al., 2000).

The second period can be followed from the post-Second World War years up to the mid-1980s. These years brought a gradual shift from the purely cost-based performance systems to performance

measurements involving other performance concerns like quality, flexibility, timeliness or innovation (Radnor & Barnes, 2007).

The third period can be defined from the mid-1980s as a start of performance measurement revolution (Radnor & Barnes, 2007) based on criticism and on uncovering limits of traditional approaches. Many authors identified the need for better integrated performance measurement systems (e.g. Drucker, 1990; Kaplan & Norton, 1996; McNair & Masconi, 1987; Russell, 1992). There have been numerous publications highlighting the need for more relevant, integrated, balanced, strategic, improvement oriented and dynamic performance measurement systems, which resulted in the development of new frameworks, models, methodologies, tools and techniques (Bititci, Turner & Begemann, 2000). Approaches like quality awards, activity-based costing, self-assessments, benchmarking, capability maturity model, workflow-based monitoring or balanced scorecard were introduced in this period (Kueng & Krahn, 1999).

From the current views on performance, we can see there is a need for the concept of performance management incorporating long-term and strategic perspectives. Measurement should help managers to identify the strengths and weaknesses of their companies and help them to decide on future initiatives (Amaratunga & Baldry, 2002). Measurement should not be an end in itself, but rather a tool for more effective management and better results. The results indicate what happened in the company, but not why it happened, or what employees should do about it. If an organisation wants to make an effective use of its outcomes, it must be able to make the transition from measurement to management. Organisations without performance measurement and feedback tend to experience lower than expected performance improvements and higher dissatisfaction (Longenecker & Fink, 2001; Potkany & Stachova, 2015). A key weakness of the traditional performance measurement systems used by many firms is that they have adopted a narrow or uni-dimensional focus (Neely et al., 2000). Especially, the traditional approach to performance management based only on financial indicators has many limits. Financial indicators may encourage managers to short-term decisions affecting immediate efficiency without a clear link to financial indicators of long-term strategy (Papulova, Papula & Oborilova, 2014). Current approaches to performance management combine financial with non-financial aspects and performance results. Particularly, application of balanced scorecard made significant movement in performance management, as companies adopt a balanced set of measures and interconnect performance indicators with strategy and its implementation. Nowadays, there is also a movement in performance management towards process orientation and performance based on processes in the concept of process performance management (Blasini & Leist, 2013; Kohlbacher & Gruenwald, 2011; Muschick, 2011). In this case, performance management is based on performance evaluation of all processes in the organisation and on application of business process management.

2.2. Business processes and process performance evaluation

Processes provide an excellent basis for the arrangement of the performance measurement system. If a process is identified, designed, monitored, evaluated and controlled, all these activities will ensure good performance of the process. And vice versa, processes without control, or having a negative relation with other processes have inferior or poor performance. The basics of a process approach is in focusing on process measurement more than on results of the overall performance of the company (as was the case in previous performance management systems). Effectiveness of the organisation depends on the business processes (Siemieniuch & Sinclair, 2002; Stachova, Stacho & Pajtinkova Bartakova, 2015) and improvement of the process design is the key to improve the performance of an organisation (Hammer, 2007).

If the organisation wants to apply a process approach in the management, it should implement the following seven components of business process orientation (Kohlbacher & Gruenwald, 2011; Papulova et al., 2014):

- To design and document all processes in the organisation;
- Management has to have a commitment towards process orientation;
- A process ownership needs to be ensured (each process needs to have an owner, who is responsible for the results and improvement of the process);
- Process performance measurement (each process needs to have a set of measurable performance indicators);
- Corporate culture has to be in line with the process approach (culture should be supportive and based on teamwork, willingness to change, customer orientation and cooperative leadership style);
- Applications of continuous process improvement methodologies are necessary (process improvement should be a continuous process);
- There is a need for process-oriented organisational structure (the structure should follow processes).

A process model is a powerful tool for improvement of process performance. The existence of process design and documentation is a necessary condition for the definition of appropriate performance indicators or metrics. It is also important to connect the strategic goals and objectives with performance indicators and values for processes (Lepmets, McBride & Ras, 2012). Process evaluation provides us with information about how well the measured processes are performing, whether the organisation is pursuing strategic goals, whether customers are satisfied, and where to intervene if there is a need to correct the performance. Based on the process performance measurement, we can obtain verified performance information for each process. This information is especially important for process owners, who must continually monitor and improve these data. Thus, the performance management based on process orientation can bring various benefits for an organisation. The major benefits are the speed improvement of quality, reduction of cost and improvements of financial performance, increase of quality and customer satisfaction and enhancement of employee productivity (Hammer, 2007; Kohlbacher, 2010; Papulova et al., 2014). The more process oriented an organisation is, the better it performs both from an overall perspective as well as from the perspective of its employees (McCormack, Johnson & Walker, 2003).

3. Methodology

3.1. Research goal

The aim of our research is to assess current approaches to evaluation of process performance in the context of application of process orientation in companies operating in Slovakia.

Based on the literature review, we selected areas to examine approaches to performance and process orientation of the companies:

- Design and documentation of processes in the organisation;
- Approaches to evaluation of process performance;
- Application of process performance and process oriented methods and tools;
- Strategic alignment of business process management and performance management.

3.2. Data collection and sample identification

To collect data, we used questionnaires that contained questions regarding four areas mentioned in Section 3.1. The survey was conducted from February to September in 2016. Our sample consists of 137 companies. We selected companies from various sectors, sizes and age to obtain a broader overview (Table 1).

Table 1. Identification of the companies

Company size	Number	%	Sector	Number	%
Micro companies	22	16%	1. Manufacturing	24	18%
Small company	35	26%	2. Construction	6	4%
Medium-sized	44	32%	3. ICT	25	18%
Big companies	36	26%	4. Electricity, gas, steam and air con. supply	8	6%
Total	137	100%	5. Accommodation and food services	10	7%
Company age	Number	%	6. Financial and insurance services	13	9%
Less than 10 years	28	20%	7. Distributive trades	23	17%
10–15 years	27	20%	8. Professional, scientific and technical activities	22	16%
15–30 years	72	53%	9. Transportation and storage services	2	1%
More than 30 years	10	7%	10. Real estate activities	4	3%
Total	137	100%	Total	137	100%

4. Results

4.1. Design and documentation of processes in the organisation

In this first area of our research, we examined how well processes are documented and designed in the companies. We found that only 11% of the companies do not have identified and documented processes. These companies were mostly small companies from the sector of distributive trades focusing on online distribution of products (e-shops).

The rest of the companies (89%) stated that they had identified and documented a process. This is a really good result which shows that the majority of companies are aware of their processes or at least there is a start base for process orientation. Some companies (73%) stated that they design their process and use some sort of visualisation of process models or process maps.

In terms of methodology, 25% of companies, mostly big companies, use process design methods like Integrated Definition (IDEF) – IDEF1X, IDEF14, IDEF12, business process modeling notation, event-driven process chains standards. Quality standards and manuals were used by 15% of the companies, mostly in sectors of manufacturing and distributive trades. Quite a large number of companies (69%) stated that they were using mostly own standards, which means they were not fully respecting any design methods or quality standards and there was quite a big risk of not having documented and designed process in the right matter.

To provide effective visualisation and design of processes, it is recommended to use process software tools. Less than a half of the companies (44%) use software tools. The most popular applications are MS Visio (31%), ARIS (9%) and in a minority, there were other software used like Process Wizard, Mega suit, System Architect, Web Sphere Business Modeler or Work Flow Modeler.

4.2. Approaches to evaluation of process performance

In the second area, we were examining how companies evaluate their process performance, how often they measure processes and if there is base for continuous improvement of processes based on these measures.

We found that only 31% of the companies measure and evaluate their processes. It is a really small number compared to the fact that 89% of companies stated they identified and documented processes. This means that companies have some knowledge and information about their processes, but they do not monitor and evaluate their processes on a regular basis. In fact, they do not have the current information about the process. The processes are not static and therefore they should be continually analysed to be improved. Companies that do not evaluate processes lack information about how to improve the performance, not only of processes but of the whole company.

Companies with evaluation of the process performance were also examined on their approach to evaluation of process performance. In this group, 49% of companies stated that they defined the performance indicator for each process evaluation and 26% had almost all processes with a defined performance indicator. 53% of this group of companies set the time frequency of evaluation of their processes; others did not evaluate processes on a regular basis. More than half the companies (51%) use software to support the evaluation of process. 42% of the companies **always** take corrective action when there is difference in the achieved process performance compared to the set performance value and 33% of the companies only sometimes take corrective actions. The interesting result is that 16% of the companies never take corrective actions, so the evaluation results are not important for any actions. Only 40% of the companies that evaluate the performance of the processes use the results for the process improvement.

We also searched for the parameters (attributes) of processes that companies focus on the most, or see as most important for improving the process. The results are given in Table 2.

Table 2. The most important parameters of process

Parameters of processes	%
Customer satisfaction (better transmission of customer requirements, better satisfaction with results)	34%
Quality (elimination or reduction of errors)	32%
Productivity (more output produced with the same input or the same output with less inputs)	24%
Time (acceleration of the process/reduction of idle time)	23%
Documentation costs (reducing bureaucratic costs or other documentation costs)	12%

These results show that most companies do not use the potential of process performance evaluation and most do not even know the performance of their processes. The better approach to evaluation of performance and process improvement was shown by companies existing for more than 15 years and operating in sectors like ICT, financial and insurance services and manufacturing.

4.3. Application of process performance and process-oriented methods and tools

In the third area of our research, we focus on application of process performance and process-oriented methods and tools. There are several methods and tools based on process approach like Activity-based Costing (ABC), Activity-based Management (ABM), Corporate Performance Management (CPM), Business Process Improvement (BPI), Balanced Scorecard (BSC), Supply Chain management (SCM), lean manufacturing and quality management systems (ISO, EFQM, Six Sigma). The application of the methods is shown in Table 3.

Table 3. Application of methods and tools

Tools and methods	%	Dominated sectors
ISO	61%	ICT, Manufacturing, Distributive trades, Professional, scientific and technical activities
CPM	26%	ICT, Distributive trades
ABC	22%	More sectors
Six Sigma	21%	ICT, Financial and insurance services, Manufacturing
TQM	20%	More sectors
LEAN	19%	More sectors
BPI	18%	ICT, Financial and insurance services, Distributive Trades
BSC	17%	ICT, Distributive trades, Professional, scientific and technical activities
SCM	12%	ICT, Distributive trades
EFQM	4%	ICT, Manufacturing
CAF	1%	ICT

We can see that in the sectors of ICT, distributive trades and manufacturing are more companies that apply tools and methods based on processes or quality management. If we look at the tools and methods connected to performance management, we can see that CPM is used only by 26% of the companies and BSC only by 17% of the companies.

4.4. Strategic alignment of the performance

The last area of our research was devoted to examination of strategic alignment of process evaluation or performance management of the company towards implantation of strategy and fulfillment of strategic goals of the company. As we stated in the literature review, it is also important to connect the strategic goals and objectives with performance indicators and values for processes.

We found that only in 16% of the companies was there a strategic alignment and interconnection between strategy and performance management. It was even lesser than companies using BSC (17%), although BSC uses the same principle. We also studied problems and limits that cause this situation, especially in comparison to components for successful implementation of process orientation as a basis for process performance evaluation. The most identified problems and limits are shown in Table 4.

Table 4. Problem areas

Problem areas	%
Lack of specialists for process management	22%
Lack of funds and finances (expensive)	20%
Negative attitude to change	18%
Corporate culture	15%
Insufficient qualification for process management	11%
Not considered as necessary (do not see great benefits)	11%
Insufficient support and commitment from managers	10%
Disapproval of top management	9%
Unclear or incorrect defined objectives (do not know to identify areas of improvement)	5%

5. Conclusion

The success of organisations largely depends on the ability of managers to adapt to the ongoing changes in the environment through monitoring and implementation of new approaches into their management. One of the dominating characteristics of current management theory is the movement

from functional to process orientation in management. This movement is also reflected in the area of performance management, in which one of the current trends is process performance management, which is based on process orientation and process performance evaluation.

Process management with the focus on processes brings new insight into the management of an organisation. Its application brings companies various advantages like increase of flexibility, cost reduction, acceleration of process time, better involvement of employees and more quality outcomes. For companies, it should be essential to know their processes and to know the performance of their processes. Processes are not static, but rather dynamic and thus they have to be constantly monitored, measured, analysed and improved. This means managers should strive for continuous improvement of processes and thus increase the overall performance.

Based on the results of our research, we can say that there is still a huge gap between these recommendations and the praxis of companies. Our goal was to assess current approaches to evaluation of process performance in the context of application of process orientation in companies operating in Slovakia. We examined 137 companies from different aspects to understand the level of application of business process management and their approaches to evaluation of process performance. We found some interesting results, however, wherein the research also showed several weaknesses and low application of process management principles. Although the results at first showed high managers' awareness of their processes (89% of all companies), on the other hand we could see low application of process standards and methodology (only 25% of companies used process methodology to design process maps and process models). In the area of process performance evaluation, only 31% of companies measure and evaluate process performance and yet not all of these companies have set KPI for all the process, monitor and evaluate their processes on regular basis or use the results for the continues processes improvement. This means that the rest of the companies do not evaluate their process and thus do not have the actual information on the performance of their processes. There is still great unused potential of many process tools and methods that companies can use to improve the application of process management and improve their process performance.

We also searched for reasons for low application of process tools and performance evaluation systems. The companies mostly lacked specialists and knowledge in this area or do not have sufficient financial resources to implement process approach in the company. The positive aspect of managers' attitudes was shown in the detection of parameters for process improvements: customer satisfaction, quality and productivity.

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