A Performance Management Software Integrating the Concept of Visibility of Performance

Tim Pidun, Technical University Dresden, Dresden, Germany
Oliver Croenertz, Leipzig University of Applied Sciences, Leipzig, Germany

ABSTRACT

Applying Performance Management Systems (PMS) in an enterprise often is a cumbersome endeavor. Reasons are missing software structures and the lack of an intuitive visualization of important information. The theory of Visibility of Performance defines the goodness of use of a given PMS and can also be applied to a PMS software. In this context, the authors evaluate a novel software prototype that deals with the problem of lacking information transfer and visualization with the result that it is most suitable to generate and transport visible performance information. Moreover, this investigation is a formal verification of the used theory.

KEYWORDS
Annotations, Cluster, Context, Domain Knowledge, Indicators, Performance, Performance Management Systems, Visibility, Visualization, Success Factors, Treemap, Weak Signals

INTRODUCTION

Performance Measurement Systems (PMS) as instruments of choice for enterprise controlling and Management Accounting are still discussed extensively in literature and practice, despite systems like the Balanced Scorecard (BSC) were developed already about 25 years ago (Kaplan and Norton, 1992). Their usefulness is undoubted, as they are designed to supply the right information about the status of the enterprise to the right people the right time (Bitici et al., 2004; Bosilj-Vuksic, 2008; Myles, 2008 and Nudurupati et al., 2011) as well as to reduce uncertainties and to support appropriate decisions (Power, 1997 and Bose, 2006). They serve the measurement and control of multidimensional and interdependent strategic and operational aspects of entrepreneurial success (in this context: the performance) and its measured variables (Baum et al., 2007) and foster the development, review and execution of strategies (Bullinger et al., 2009).

Thus, PMS are discussed mainly in the context of Business Administration.

The combination of strategic planning with operational control is one of the top future topics of Management Accounting (Schaeffer and Weber, 2012) with a growing emphasis on the handling of strategic management questions (2CG, 2016). Literature also constantly demands to transform number crunching Management Systems into adequate Information Systems (e.g. Bititci et al., 2002;
Garengo et al., 2007; Nudurupati et al., 2011) that are also able to depict relations, links and strategic contexts - which are integral parts of the BSC since its beginning.

In contrast to that, many empirical studies constantly document that PMS - especially the BSC and their indicators - are predominantly transported in the programming shell of numeric-based spreadsheet applications, in particular of market leader Microsoft Excel (2CG, 2016). Diffusion rates of spreadsheet applications in PMS operation vary from 45% (Marr 2004), 42% (Horvarth & Partners, 2008), 31%-42% depending on the regarded process (BARC, 2009) up to 61% (Marr, 2013). Undoubtedly, specialized PMS software at present is underrepresented on the market.

Hence, they are also of interest for a consideration in the discipline of Information Science. Its mission is to create useful, comprehensible, innovative artifacts that are applicable to a class of technical problems (Oesterle et al., 2010), in this case the class of PMS.

Apart from the BSC as dominating system, there are quite a lot of alternative PMS. They mostly remain purely numeric and money-related (Pidun and Felden, 2011), as “performance” usually is connected with the generation of entrepreneurial success in the form of countable money (Eberlein, 2010). Some concepts propose the consideration of alternative information, e.g. the assessment of the social environment (Kueng and Krahn, 1999) or the competitive environment of the enterprise (Neely et al., 2002), immaterial goods (Loennqvist, 2004), the expansion from numeric values to indicators that can be discrete or continuous, quantitative or qualitative (Popova and Sharpanskykh, 2010) or the usage of verbal expressions to assess the success of Enablers and Results in the EFQM Model (European Foundation for Quality Management, DGQ, 2013).

In summary, a modern PMS is supposed to be specifically software-supported, useful by the combination of comprehensive data sources and various sorts of information as well as usable by providing intuitive graphical connections, links and illustrations that clarify currently unattended strategic relations and their significance. In this context, we evaluate a specific PMS software.

The remainder of this paper is as follows: The following Background Section contains the fundamental problem description, the Investigation section contains the Examination framework and results, Conclusions complete the contribution.

BACKGROUND

The management instrument PMS can be considered as relatively mature, their problems and pitfalls are well known. Their application is widespread and still advisable; 80% of the enterprises evaluated in BARC (2009) consequently affirm their need to improve performance processes. In contrast, Horvarth & Partners (2008) claim that 54% of all enterprises use their BSC “not very intensively”, and name a “missing seizable benefit” as main reason why 80% of them drop their BSC again. DeWaal and Counet (2009) state in their evaluation that 56% of all performance related projects fail in general. Deloitte (2007) gives more reasons: 53% of all enterprises critizise the PMS’ inability to reveal future developments, 21% even deny their ability to express the current condition of the enterprise. In an earlier study (Deloitte, 2004) half of the interviewees describe their PMS as not at all helpful to analyze their enterprises’ performance. Recent investigations attenuate this pessimistic view a bit; 2GC (2016) finds that still about 50% find their BSC “very useful”, but with a shift from being “extremely” to “somewhat” useful over the last three years. So all in all, it seems that the enterprises actually have accepted to bite the bullet and keep on using rather unsuitable tools. But what are the factors that make the application of a PMS successful?

Gruening (2002) finds that the integration of employees and adequate communication about the PMS are main success fators. Davenport and Marchand (2000) as well as Bititic et al. (2002b) identify the way that stakeholders handle their information as critical. Gruening (2002) in particular proved that the motivational use of information affects the total quality of a PMS. Other sources claim the performance information itself as crucial (Eccles, 1991; Davenport and Prusak, 1997; Pralahad and Krishnan, 2002).
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