



## Evolution of the performance measurement system in the Logistics Department of a broadcasting company: An action research



Debora M. Gutierrez<sup>a,1</sup>, Luiz F. Scavarda<sup>a,\*,1</sup>, Luiza Fiorencio<sup>a,1</sup>, Roberto A. Martins<sup>b,2</sup>

<sup>a</sup> Center of Excellence in Optimization Solutions (NExO), Industrial Engineering Department, Pontifícia Universidade Católica do Rio de Janeiro, Rua Marquês de São Vicente, 225 sala: 950L, 22453-900 Gávea, Rio de Janeiro (RJ), Brazil

<sup>b</sup> Industrial Engineering Department, Federal University of São Carlos, Rodovia Washington Luis, Km 235, 13565-905 São Carlos (SP), Brazil

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### ABSTRACT

This paper aims to present the empirical findings and lessons learnt from an action research on the evolution of the performance measurement system (PMS) for the Logistics Department of a broadcasting company. The development covers the procedure rather than the structure of PMS offering a conceptual procedural framework with information and insights on how to design, implement, use and assess a PMS, addressing an important gap identified in the literature. The entire research effort lasted almost two and a half years, involving researchers from academia and practitioners from the company. In the end, the main findings are (i) the critical, important and different roles played by top managers during the change; (ii) the critical and important role also played by employees; (iii) the trade-off between the pace of implementing new performance measures and data quality in terms of reliability and availability; and (iv) the use and review of the new PMS has led to improvements in people's behaviour, development of organisational capabilities and increased performance results. While the second and fourth findings are not a surprise and corroborate the literature, the first and third findings shine new light on previous research findings, broadening the understanding of the role of top managers and the importance of data reliability in implementing new performance measures. Moreover, the proposed conceptual procedural framework with a life cycle approach contributes to filling an academic literature gap and can provide guidance for practitioners in similar undertakings.

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### 1. Introduction

Performance measurement systems (PMSs) have become a relevant issue for scholars and practitioners since the end of the 1980s. Despite the great volume of research on PMSs, research gaps still exist, offering many opportunities for future research (Bititci et al., 2012; Taylor and Taylor, 2013).

During recent decades, the field of performance measurement has been studied through different perspectives (Bititci et al., 2004; Gosselin, 2005; Nudurupati et al., 2011; Bititci et al., 2012; Taylor and Taylor, 2013). The traditional approaches are derived from costing and accounting systems, with great emphasis on financial performance measures (Bourne et al., 2000; Nudurupati et al., 2011). In the late 1980s and early 1990s, the scope of the research on PMSs began to broaden and led to the recognition of

performance measurement as a multidimensional domain. Since then, a large number of frameworks for PMSs have emerged (Bourne et al., 2000; De Toni and Tonchia, 2001; Gosselin, 2005; Nudurupati et al., 2011; Bititci et al., 2012). The Balanced Scorecard is the largest or most visible achievement of the performance measurement revolution foreseen by Sink (1991), Eccles (1991) and Neely (1999) during the 1990s. Most frameworks and models focus on structure rather than procedure to develop/update new PMSs (Folan and Browne, 2005).

The literature offers an increased focus on real-life studies (Franco-Santos et al., 2012). However, great attention has been toward designing PMSs rather than implementing, using and reviewing. Research with focus on other phases of a PMS life cycle is still limited (Braz et al., 2011; Nudurupati et al., 2011; Najmi et al., 2012; Taylor and Taylor, 2013).

Furthermore, there is little empirical research on the evolution of an organisation's PMS focusing on the entire PMS life cycle in a holistic approach covering the initial design, through implementation and use/review as Bourne et al. (2000), Bititci and Nudurupati (2002), Nudurupati et al. (2011) and van Helden et al. (2012) suggest. This lack of research reinforces the need for longitudinal empirical studies that explore and explain the PMS evolution

\* Corresponding author. Tel.: +55 21 3527 1285x1286; fax: +55 21 3527 1288.

E-mail addresses: [debora.gutierrez@gmail.com](mailto:debora.gutierrez@gmail.com) (D.M. Gutierrez), [lf.scavarda@puc-rio.br](mailto:lf.scavarda@puc-rio.br) (L.F. Scavarda), [luiza.fiorencio@labnexo.com](mailto:luiza.fiorencio@labnexo.com) (L. Fiorencio), [ram@dep.ufscar.br](mailto:ram@dep.ufscar.br) (R.A. Martins).

<sup>1</sup> Tel.: +55 21 3527 1285x1286; fax: +55 21 3527 1288.

<sup>2</sup> Tel.: +55 16 3351 9531x8237.

within organisations (Henri, 2010; Nudurupati et al., 2011; Franco-Santos et al., 2012; Bititci et al., 2012; Korhonen et al., 2013). These studies can contribute by reporting the factors that influence success and failure of such initiatives and by providing new insights into PMS evolution. At last, performance measurement is a topic that needs to be validated in different contexts (Neely et al., 1995; Franco-Santos et al., 2012; Rompho and Boon-Itt, 2012).

According to this context, the following research question has emerged: How should a company successfully manage the evolution of its PMS, considering the entire PMS life cycle from design through implementation and use/review? This article presents the empirical findings of a longitudinal study applying the action research method to the evolution of the PMS in the Logistics Department of a large broadcasting company, with emphasis on the life cycle approach. The research focuses on the procedure rather than structure of PMS offering a conceptual procedural framework that provides information and insights on how to design, implement, use and assess a PMS, as preconised in Folan and Browne (2005). The process approach proposed and discussed in Platts and Gregory (1990) and Platts (1993, 1994) to manufacturing strategy development was applied to develop the research design. The action research team was composed of the authors of this paper, the Supply Chain Director, the Logistics Department's Manager, his two coordinators and two planners.

The broadcasting company studied has been facing increased complexity of its operations, resulting in the growth of its Logistics Department's importance. Thus, performance measurement of the logistics activities has become critical to the company. Therefore, this study presents the main lessons learnt in a real-life setting and contributes to filling the identified gap in the PMS literature.

This article is structured into the following sections: PMS theoretical foundations, research design, analysis of the PMS evolution, discussions and conclusions.

## 2. PMS theoretical foundations

According to Neely et al. (1995), performance measurement is the process of quantifying the efficiency and effectiveness of actions. The performance measure is a metric used to quantify the efficiency and/or effectiveness of past actions, compared to a pattern or target (Neely et al., 1995). The measures capture the essence of organisational performance and are the foundation of measuring performance (Gunasekaran et al., 2004). The definition of these targets should undergo gradual changes. Once a target is achieved, a new goal more challenging yet realistic should be set (Fortuin, 1988; Braz et al., 2011).

However, a performance measure involves more than just a complex formula and targets (Braz et al., 2011). Attributes such as the objective of the measure, the scope, the frequency of measurement and review, the source of the data and those responsible for each activity should also be considered (Neely et al., 1997). The level of aggregation of measures is another important aspect highlighted in the literature (Globerson, 1985; Lohman et al., 2004; Braz et al., 2011). Thus, managers should seek a good balance of measures providing a holistic view of organisational performance.

A PMS is the set of metrics used to quantify both the efficiency and effectiveness (through the acquisition, collation, sorting, analysis, interpretation and dissemination of appropriate data (Neely et al., 1995; Neely, 1998). It consists of a system, such as software, database and procedures, which measures performance in a consistent and complete way (Lohman et al., 2004).

Therefore, a PMS enables informed decisions to be made and actions to be taken, by providing relevant information to decision makers. An effective PMS should monitor past performance and help to plan future performance, provide a balanced accounting of the business, demonstrate how results are related to decisions, prevent the inclusion of conflicting measures, reinforce organisational strategies, be compatible with the organisational culture and the available reward systems and provide data for external comparison (benchmarking) (Neely et al., 1996; Neely, 1998).

There are many PMS frameworks on literature (Folan and Browne, 2005; De Toni and Tonchia, 2001). Most of them focus on structure rather than on procedure (Folan and Browne, 2005). This means those frameworks provide little information and insights on how to develop, implement, use and review a PMS.

Bourne et al. (2000), Bititci and Nudurupati (2002), Nudurupati et al. (2011) and van Helden et al. (2012) propose a life cycle approach to develop PMSs. All approaches are very similar and procedural in essence guiding into the main steps on PMS development process. Table 1 exhibits the main steps of each proposal. Bititci and Nudurupati (2002) and Nudurupati et al. (2011) present the same proposal.

Fig. 1 exhibits the conceptual procedural framework for PMSs development applied in this paper's action research, as described further in Section 3. This framework is a blend of previous work of Bourne et al. (2000), Bititci and Nudurupati (2002), Nudurupati et al. (2011) and van Helden et al. (2012). However, the proposed framework in Fig. 1 is more detailed than these previous works.

Bourne et al. (2000) suggested a three-stage procedural model for the PMS life cycle development: design, implementation and use/review. The design phase consists of the identification of key objectives to be measured, design of measures and development of a framework to review the final set of metrics. These measures should derive from the strategy, considering the customers and stakeholders' requirements, business objectives and PMS roles (Ittner and Larcker, 1998; Bourne et al., 2000; Braz et al., 2011; Lima et al., 2013). The measures are essential elements for planning and strategic control cycles (Neely et al., 1997; Ittner and Larcker, 1998), as their use evaluates the strategy (Ittner and Larcker, 1998; Kaplan and Norton, 1996), and without them, the decision makers are not sure whether their objectives were achieved (Ittner and Larcker, 1998; Goold and Quinn, 1990). Lohman et al. (2004) suggested that the mission statement should be used as a guide for the identification of strategic objectives and highlight the importance of data availability in the design phase.

In the implementation phase, the focus is to collect, analyse and disseminate the data, enabling measurements to be made regularly (Bourne et al., 2000; Lohman et al., 2004; Nudurupati et al., 2011; Braz et al., 2011). Effective implementation requires the alignment of organisational structure and systems. Implementing a PMS stimulates managerial changes and promotes organisational

**Table 1**  
The steps of performance measurement life cycle

| Proposal   | Main steps  |
|--|---|
| Bourne et al. (2000)                                       | Design, implement, use/review   |
| Bititci and Nudurupati (2002) and Nudurupati et al. (2011) | Define performance indicators, identify data sources, analyse the data, and identify needs of change (following PDCA cycle) |
| van Helden et al. (2012)                                   | Design, implement, use, assessment  |

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