

# Chapter 77

## Strategic Information Systems and Business Outcomes

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### ABSTRACT

*This large-scale study of 1,990 responses from practitioners in a wide range of industries developed and tested a model of relationships among a specific type of strategic information system -- strategic performance measurement systems (SPMS) -- characteristics and business outcomes. Using as methodology path analysis and stepwise regression, we found that two SPMS characteristics (design purpose and information technology use), together with system effectiveness, explain close to 50% of the SPMS impact on business results.*

### INTRODUCTION

Strategic performance measurement systems combine financial and nonfinancial measures to translate strategy into an actionable set of performance indicators (Chenhall, 2005). According to Bento and White (2010), strategic performance measurement systems (SPMS) may take various forms but share three basic characteristics:

- “They include financial measures that capture the short-term consequences of managers’ decisions regarding issues such as revenue growth, asset utilization, and cash flows (Kaplan & Norton, 2001);
- They supplement financial measures with nonfinancial measures that indicate operational achievements likely to drive future financial performance;
- They are designed to fulfill multiple purposes, from simple cost determination to complex value creation, with an emphasis on strategy execution.” (Bento & White, 2010, p. 4)

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The practice of combining financial and nonfinancial performance measures is not new, and there are well-documented cases of companies that formalized their use during the middle of the twentieth century. For instance, in the 1950s, the General Electric Company introduced a set of eight financial and nonfinancial measures to evaluate performance of its departments, including financial indicators such as accounting profits, and less traditional measures such as product leadership, personnel development, employee attitudes and public responsibility (Otley, 2002).

The two major innovations developed by strategic performance measurement systems adopted in the 1990s were to: 1) link these measures into a coherent system to facilitate strategy execution, and 2) to provide a tool for *managing* performance instead of just measuring it. As Bititci, Garengo, Dorfler and Nudurupati argued in their extensive review of the performance measurement literature, “this line of thinking led to development of the concept of performance management as a process, where performance measures facilitate the management of organizations’ performance” (Bititci, Garengo, Dorfler, & Nudurupati, 2012, p. 309). A main purpose of strategic performance measurement systems became to give managers early warning signals of factors that may influence future performance positively or negatively, as opposed to simply reporting on past performance. An example would be if managers could obtain information that product quality is deteriorating, they could then intervene to improve quality before customer complaints would result in poor sales and declining profits. If SPMS can offer such critical information about performance drivers, organizations that employ them should see a significant and positive impact on overall performance. Surprisingly, the literature on performance measurement, despite its explosive growth in the past two decades, still lacks conclusive evidence on whether SPMS do, in fact, improve performance, and, if so, which factors contribute to such improvement.

More recently, studies published since the early 2000s focused on the direct performance effects of specific SPMS characteristics such as the use of more subjective nonfinancial measures (e.g., Ittner, Larker, & Randall, 2003). Others reported on the actual performance impact of overall SPMS adoption (e.g., Chenhall, 2005). Van der Stede, Chow and Lin (2006) provided intriguing evidence of the importance of including a diverse set of performance measures in the SPMS, finding that companies that used a higher number of performance measures actually achieved higher performance. Farrell, Kadous and Towry (2008) found that incentive contracts that included forward-looking performance measures effectively drive employee performance. On the other hand, Kaplan and Norton (2008) provided anecdotal evidence that breakdowns in the SPMS actually lead to deteriorating company performance. Some interdisciplinary work in recent years has started to identify other factors, internal or external to the firm, that potentially contribute to a positive impact of SPMS on performance. Bisbe and Malagueño (2012) found evidence that the effect of SPMS on organizational performance is reduced in situations where environmental dynamism is high. DeLone and McLean argued that information system success leads to improved company performance (see review by Petter, DeLone, & McLean, 2012), while others have concluded that there is no relationship between information systems and performance measurement (Soudani, 2012).

This study contributes to the understanding of the impact of SMPS on business results, by developing the model presented in Figure 1. Integrating two streams of the performance measurement literature coming from management control and information systems, we propose a set of possible relations between SPMS characteristics and outcomes. The model was tested using a large-scale study of 1,990 practitioners from all Dow Jones Global Industry Groups. The study focuses on performance measurement from the perspective of the actors themselves (management accountants in charge of designing and implementing SPMS), and uses as the unit of analysis the strategic business unit (SBU), rather than the firm as a whole.

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