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Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study

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Abstract

There is considerable interest in the role of strategic performance measurement systems (SPMS), such as balanced scorecards, in assisting managers develop competitive strategies. A distinctive feature of SPMS is that they are designed to present managers with financial and non-financial measures covering different perspectives which, in combination, provide a way of translating strategy into a coherent set of performance measures. There appears to be wide variation in how these systems are configured. However, as yet, there has been little consideration given to identifying underlying information characteristics that might help explain how the systems have beneficial effects. This study identifies a key dimension of SPMS, integrative information, as being instrumental in assisting managers deliver positive strategic outcomes. Three interrelated dimensions of integrative SPMS were identified in this study. The first, strategic and operational linkages, was a generic factor that captures the overall extent to which the systems provide for integration between strategy and operations, and integration across elements of the value chain. The second attribute, customer orientation, focuses on customer linkages and includes financial and customer measures. The third dimension, supplier orientation, is based on linkages to suppliers and includes business process and innovation measures. A model is developed that predicts that integrative SPMS will enhance the strategic competitiveness of organizations. It is proposed that the influence of integrative SPMS on strategic outcomes is indirect through the mediating roles of alignment of manufacturing with strategy and organizational learning. Data from a survey of 80 strategic business units provide varying support for the proposed relationships.

Introduction

Increasingly, innovations in management accounting systems have sought to provide information for developing a strategic orientation to the operations of the firm (Ittner & Larcker, 2002;

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Kaplan, 1994; Shank & Govindarajan, 1993; Simons, 2000). One area of innovation has been performance measurement systems. There have been efforts to refine financial measures such as economic value added (Wallace, 1998). Non-financial measures have been recommended for use in manufacturing and marketing but in ways that lack integration between functional areas (Banker, Potter, & Srinivasan, 1993; Foster & Horngren, 1987; Fullerton & McWatters, 2002; Hall, 1989; MacArthur, 1996; Maskell, 1992; McKinnon & Bruns, 1992; Perera, Harrison, & Poole, 1997; Vollmann, 1990). Several authors have presented measurement schemes that are strategic in that they provide a more integrated approach relating operations to customers and corporate vision. These have included *Performance Pyramids* and *Hierarchies* (Dixon, Nanni, & Vollmann, 1990; Hronec, 1993; Lynch & Cross, 1995; McNair, Lynch, & Cross, 1990), *Balanced Scorecards* (BSC) (Kaplan & Norton, 1992; Kaplan & Norton, 1996; Kaplan & Norton, 2001) and the *Intangible Asset Scorecard* (Sveiby, 1997).

A distinctive feature of these strategic performance measurement systems (SPMS) is that they are designed to present managers with financial and non-financial measures covering different perspectives which, in combination, provide a way of translating strategy into a coherent set of performance measures. The perspectives that are relevant to profit orientated companies most often include financial, customers, internal processes and long-term innovation. This system of associated measures has the potential to identify the cause-effect linkages that describe the way operations are related to the organization's strategy. The aim is to provide a rational framework to formulate and implement strategies. Evidence on the adoption of SPMS, particularly BSC, has been mainly anecdotal with little survey work to confirm the adoption or effects on desired organizational outcomes. While there is some support for growing BSC implementation (Chenhall & Langfield-Smith, 1998; Hoque & James, 2000; Ittner & Larcker, 1998b; Silk, 1998), the characteristics or information dimensions of the systems are not examined in these studies. It seems clear that there is wide variation in the nature of SPMS, ranging from combinations of financial and non-financial measures to more comprehensive systems linking operations to various perspectives and to strategy (Hoque & James, 2000; Ittner & Larcker, 1998b; Ittner & Larcker, 2003; Ittner, Larcker, & Randell, 2003).

This study aims to contribute to the body of accounting literature that examines how the underlying information dimensions of SPMS effects desired organizational outcomes by providing information on the linkages between operations and strategic outcomes and between different facets of the entire value chain. The importance of identifying measurement system attributes to the study of SPMS is noted by Ittner et al. (2003, p. 739). Examples of this body of literature include studies associating enhanced outcomes with greater measurement emphasis and diversity of performance measures (Ittner et al., 2003), competitor focused systems (Guilding, 1999), common compared to unique performance measures (Lipe & Salterio, 2000), systems linked to value chain analysis (Dekker, 2003), measures of the benefits of supplier partnerships (Seal, Cullen, Dunlop, Berry, & Ahmed, 1999), activity knowledge structures (Dearman & Shields, 2001), and performance measure precision and sensitivity (Banker & Datar, 1989).

In this study, the nature of SPMS is described in terms of a key information characteristic, that of *integrativeness*. The characteristic of integrativeness within SPMS has two components. First, a generic aspect involving information that provides an understanding of cause-effect linkages between operations and strategy and goals, and between various aspects of the value chain including suppliers and customers (Banker, Janakiraman, Konstans, & Pizzini, 2001; Kaplan & Norton, 2001; Malina & Selto, 2001; Stivers & Joyce, 2000). Second, a measurement component concerning provision of measures in the areas of financial, customers, business processes and long-term innovation (El-Shishini, 2001; Frigo & Krumwiede, 2000; Kaplan & Norton, 1996; Malmi, 2001; Sharma, 2000). It is this dimension of integrativeness that is seen to provide managers with information that potentially assists in developing competitive strategies.