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Performance measurement of supply chain management: A balanced scorecard approach

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Abstract

This paper develops a balanced scorecard for supply chain management (SCM) that measures and evaluates day-to-day business operations from following four perspectives: finance, customer, internal business process, and learning and growth. Balanced scorecard has been developed based on extensive review of literature on SCM performance measures, supported by three case studies, each illustrating ways in which BSC was developed and applied in small and medium sized enterprises (SMEs) in India. The paper further suggests that a balanced SCM scorecard can be the foundation for a strategic SCM system provided that certain development guidelines are properly followed, appropriate metrics are evaluated, and key implementation obstacles are overcome. The balanced scorecard developed in this paper provides a useful guidance for the practical managers in evaluation and measuring of SCM in a balanced way and proposes a balanced performance measurement system to map and analyze supply chains. While suggesting balanced scorecard, different SCM performance metrics have been reviewed and distributed into four perspectives. This helps managers to evaluate SCM performance in a much-balanced way from all angles of business.

Keywords: Balanced scorecard; Supply chain management; Performance measurement; Metrics; Framework; Case studies

1. Introduction

For any business activity, such as supply chain management (SCM), which has strategic implications for any company, identifying the required performance measures on most of the criteria is essential and it should be an integral part of any business strategy. Many methods have been suggested over the years for SCM evaluation of any organization. However, a balanced approach to evaluate SCM is a source of increasing cost and concern to management as traditional methods focus only on well-known financial measures, which are best,

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suited to measure the value of simple SCM applications. Unfortunately, evaluation methods that rely on financial measures are not well suited for newer generation of SCM applications. These complex supply chains typically seek to provide a wide range of benefits, including many that are intangible in nature. As a result, we suggest that it may be appropriate to use a balanced approach to measure and evaluate supply chains.

In recent years, a number of firms realized the potentials of SCM in day-to-day operations management. However, they often lack the insight for the development of effective performance measures and metrics needed to achieve a fully integrated SCM due to lack of a balanced approach and lack of clear distinction between metrics at strategic, tactical, and operational levels (Gunasekaran, Patel, & Tirtiroglu, 2001; Hudson, Lean, & Smart, 2001). Therefore, it is clear that for effective SCM, measurement goals must consider the overall scenario and the metrics to be used. These should represent a balanced approach and should be classified at strategic, tactical, and operational levels, and be financial and non-financial measures, as well.

Taking into account the above factors, a balanced SCM scorecard has been proposed and developed in this paper to discuss the several measures and metrics of SCM. The article has contributed to important issues of SCM performance measurement theory and practices.

- It points out the importance of key players in the performance measurement of SCM, and the nature of roles they need to play.
- A balanced performance evaluation of SCM such as, balanced scorecard not only helps organizations in faster and wider progress monitoring of their operations but can also help them in improving their internal and external functions of business such as engineering and design applications, production, quality improvement, materials management, quick response, gaining lost market shares, proper implementation of business strategies etc.
- The paper also articulates the experiences of application of balanced SCM scorecard specific to SMEs in India, throwing light on the management of supply chain by conducting case studies. It focuses on critical factors that are likely to contribute for the successful performance measurement of SCM, particularly in SMEs sector.

1.1. The balanced scorecard

The need of performance measurement systems at different levels of decision-making, either in the industry or service contexts, is undoubtedly not something new (Bititici, Cavalieri, & Cieminski, 2005). Kaplan and Norton (1992) have proposed the balanced scorecard (BSC), as a means to evaluate corporate performance from four different perspectives: the financial, the internal business process, the customer, and the learning and growth. Their BSC is designed to complement ''financial measures of past performance with their measures of the drivers of future performance''. The name of their concept reflects an intent to keep score of a set of items that maintain a balance ''between short term and long term objectives, between financial and non-financial measures, between lagging and leading indicators, and between internal and external performance perspectives''. The early image of the BSC serving the CEO like a control panel serves an aircraft pilot seems to have expanded to include mechanisms to alter the course of action as well. Now, the BSC seems to serve as a control panel, pedals and steering wheel (Malmi, 2001). Table 1 outlines the four perspectives included in a BSC.

Many companies are adopting the BSC as the foundation for their strategic management system. Some managers have used it as they align their businesses to new strategies, moving away from cost reduction

Table 1
The four perspectives in a balanced scorecard (Kaplan & Norton, 1992)

Customer perspective (value-adding view)	Financial perspective (shareholders' view)
Mission: to achieve our vision by delivering value to our customer	Mission: to succeed financially, by delivering value to our shareholders
Internal perspective (process-based view)	Learning and growth perspective (future view)
Mission: to promote efficiency and effectiveness in our business processes	Mission: to achieve our vision, by sustaining innovation and change capabilities, through continuous improvement and preparation for future challenges