Chapter 30
The Role of Sustainable Performance Measurement System in Global Supply Chain

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ABSTRACT

This chapter summarizes the role of sustainable performance measurement system (PMS) in global supply chain, thus illustrating the theoretical and practical concepts of sustainable PMS and strategic supply chain management (SCM); and the significance of sustainable PMS in global supply chain. Therefore, it is essential for organizations to evaluate their sustainable PMS applications, establish a strategic plan to consistently explore their improvements, and rapidly respond to the sustainable PMS needs of customers in global supply chain. For practitioners and researchers, this chapter provides managerial guidelines for sustainable PMS applications utilized in global supply chain. Applying the sustainable PMS will significantly enhance organizational performance and reach strategic goals in global supply chain.

INTRODUCTION

In an era of globalization, supply chains are global (Rugman, Li, & Oh, 2009). Organizations are required to compete in globalized and turbulent markets (Cocca & Alberti, 2010). In order to survive in a dynamic environment, organizations need to be able to satisfy their stakeholders and excel at the same time along with all performance dimensions (Neely, Adams, & Kennerley, 2002). Issues associated with supply chain governance, standards for sustainable supply chain management (SCM), collaboration with suppliers, performance measurement, and accountability within supply chain are explored in global business (Morali & Searcy, 2013).

Supply chain sustainability has been of great interest in the last decade for academia and the industrial world because of various stakeholders' pressures to adopt a commitment to sustainability practices (Taticchi, Tonelli, & Pasqualino, 2013). Sustainable supply chain is a significant component of sustainable development in which the environmental and social criteria need to be fulfilled by supply chain

DOI: 10.4018/978-1-5225-1837-2.ch030

members to remain within supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria (Taticchi et al., 2013).

The SCM program evaluation and monitoring is dependent on the development and application of performance measures (Bai & Sarkis, 2014). Existing performance measurement system (PMS) is rarely enough to improve organizational performance (Searcy, Karapetrovic, & McCartney, 2008). Performance measurement in supply chain application is universal (Cagnazzo, Taticchi, & Brun, 2009). Supply chain PMS is recognized due to the changing competitive nature from individual organizational competition to supply chain competing against each other (Bai, Sarkis, Wei, & Koh, 2012; Taticchi et al., 2012).

The increasing competition in the public and private sectors give rise to a growing interest in quality improvement and in designing and implementing PMS (Franceschini & Turina, 2013). There is an over-emphasis with supply chain efficiency improvements (i.e., time compression, cost cutting, quality improvement). Despite much theoretical discussion around improvement of supply chain competitiveness through delivering enhanced consumer value, there is little empirical research on how value proposition in the context of supply chain can be enhanced and aligned (Zokaei & Hines, 2007).

The strength of this chapter is on the thorough literature consolidation of sustainable PMS in global supply chain. The existing literature of sustainable PMS in global supply chain provides a contribution to practitioners and researchers by describing a comprehensive view of the functional applications of sustainable PMS in global supply chain to appeal to different segments of sustainable PMS in global supply chain in order to maximize the business impact of sustainable PMS in global supply chain.

BACKGROUND

Manufacturing industries are greatly affected by emerging technologies resulting in an influential increase in competition in local, regional, and global markets (Kasemsap, 2014). Integrity of supply chain activities is an influential factor to survive competitions in the global marketplace (Aliei, Sazvar, & Ashrafi, 2012). All organizations face the challenge of how to assess performance beyond current financial metrics (Meadows & Pike, 2010). Strategic alignment in the supply chain, assessed by the degree of matching between supply management and market requirements, is critical for the success of organizations in the global marketplace (Vachon, Halley, & Beaulieu, 2009). The competitive landscape has pushed organizations to compete not only on their own capabilities but with their entire supply chain (Hult, Ketchen, & Arrfelt, 2007). Increased customer requirements coupled with competitive pressure from globalization have forced managers to ensure that their organization's resources are well aligned not only across all functional areas but also throughout the entire supply chain (Vachon et al., 2009).

With an increasing pressure to act and report on sustainability strategies, an overwhelming number of principles, tools and reporting formats have emerged. Organizations must rely on many inter-organizational relationships to ensure productive and practical movements within their supply chains (Kotzab, Grant, Teller, & Halldorsson, 2009). Corporations adopt some of these to demonstrate their commitment to sustainable development (Beloff et al., 2004). Market opportunities are identified by understanding the competitive environment and translating this into a customer value proposition through the product and marketing strategy (Levitt, 1960; Porter, 1985). Competitive advantage is achieved if the supply chain can develop a strategy to deliver the value proposition at the lowest possible cost (Christopher, 2005).

PMS is considered as a means to gain competitive advantages and continuously react and adapt to external changes (Cocca & Alberti, 2010). PMS has expanded to the supply chain. Evaluating the