

Chapter 18

Blending Green with Lean – Incorporating Best-of-the- Breed Practices to Formulate an Optimum Global Supply Chain Management Framework: Issues and Concerns

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ABSTRACT

This chapter identifies potential areas in which firms can integrate green into current business practices based on the existing literature. An extensive literature review was conducted to examine research and practice with respect to the concurrent implementation of green, lean, and global supply chain strategies. The applied literature analysis identifies that lean not only serves as a catalyst but is also synergistic for green. Lean is beneficial for green practices, and the implementation of green practices, in turn, also has a positive influence on existing global business practices (Dües, Tan, & Tim, 2013). The chapter provides an assessment of existing academic research on the relationship and links between lean and green supply chain management practices. Existing explanatory frameworks are explored and discussed, primarily based on objectives including: (a) identification processes where lean practices are synergized with a go-green philosophy of business, (b) advocating green practices as an essential element in the lean value chain, and (c) developing a green-lean framework based on existing literature for competitive advantage for business firms.

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INTRODUCTION

To remain competitive in the marketplace, business firms are trying to remain fine tuned with constant dynamic business environment. Recent trends including green initiatives, utilization of lean process and globalization, highly influence and change the face of supply chain. Particularly, green and lean driven globalization of supply chains involves dimensions such as offshoring of production, inventories, suppliers and customers, and differences in economies, infrastructures, cultures, and politics in the competitive environment, considering sustainability in the core (Manuj & Mentzer, 2008; Schmidt & Wilhelm, 2000; Christopher, 2005). Recent studies that focus on lean- green and global supply chain includes (Florida, 1996; King & Lenox, 2001; Vachon & Klassen, 2006a; Vachon & Mao, 2008). Particularly, Mollenkopf et al. (2010) analysed both issues simultaneously in support to the previous research studies, which have looked at the synergy existing between lean management and environmental management practices (Florida, 1996) while others concentrated more on the link between lean management and environmental performance (King & Lenox, 2001; Rothenberg et al., 2001). Similarly, a segment of the literature has linked supply management activities with environmental management (Bowen et al., 2001; Vachon, 2007) while another segment has focused on the link between supply chain management and environmental performance (Rao, 2002; Vachon & Klassen, 2006b). For instance, Vachon and Klassen (2007) presents empirical evidence indicating that buyer-supplier integration is related to the type of environmental investment made in the buyer's plant. Building on evidence from case studies in the United Kingdom and Japan, Hall (2000) concludes that a buying organization's understanding of its suppliers' operations and capabilities is key in developing a green supply chain and that such

understanding can only be achieved by a sound supply management. Overview of the different environmental technologies potentially adopted by manufacturing organizations can help to better appreciate the notion of environmental practices. Environmental technologies, widely defined to include management techniques and procedures which control or eliminate the negative impacts of products or services on the natural environment (Shrivastava, 1995), have been classified in the literature into three mutually exclusive categories viz. pollution prevention, pollution control, and management systems (Klassen & Whybark, 1999a). Major manufacturers have begun to implement comprehensive programs to control environmental practices throughout their supply chains (Vachon, 2007). Specific activities that support environmental collaboration, monitoring, and control include: Monitoring reverse flows of materials; . Sharing techniques and knowledge related to environmental management with supply chain partners; . Working to control the environmental risk associated with suppliers' operations; and . Working to assure proper product use (Vachon, 2007).

BACKGROUND

A comprehensive yet significant literature review of empirical research work in the areas of Green Supply Chain Management, Lean Supply Chain Management and Global Supply Chain Management. A Step-by-Step approach was adopted for literature review (See Figure 1 and Table 1):

Step 1: The assessment period of articles is between 2004 to 2013, a 9 year timeline was selected (based on availability of research work). The year 2004 was taken as the base year for data collection as the first research based on Green-Lean and Global Supply

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