

Chapter 23

Implementation of Green Supply Chain Management in a Globalized Economy

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ABSTRACT

Green supply chain management (GSCM) practices help a firm to become eco-friendly, socially responsible, meet customer expectations, deal with industry peer-pressure and comply with government regulations (Luthra, 2014). GSCM refers to the management of all activities involved in sourcing, purchasing, manufacturing, transportation and distribution of products and services to customers in an eco-friendly way (Sharma, 2013). A conceptual framework of GSCM is presented that consists of eco-friendly organizational culture, collaborative relationships, innovative products and eco-friendly processes (Mutingi, 2013). A SWOT analysis for context specific implementation strategies for global GSCM is presented (Lee and Chen, 2010). The contribution of GSCM practices to a firm's performance is discussed (Laisirihongthong et al., 2013). The critical success factors required to achieve GSCM include top management commitment, government regulations, environment protection literacy and compliance among the supply chain partners, and ISO14001 certification (Jain and Sharma, 2014).

INTRODUCTION

The conventional “Supply Chain Management (SCM)” includes the firm’s strategies to efficiently integrate suppliers, manufacturers, warehouses and stores so that merchandise is produced and distributed in the right quantity, to the right location, and at the right time, in order to minimize system wide costs while satisfying service-level requirements (Simchi-Levi et al., 1999). SCM’s goal is to achieve downstream integration and upstream collaboration of firm’s partners and customers in an effective and efficient manner. SCM includes manufacturing operations, purchasing, transportation, and distribution and is a key component of organizational competitiveness and effectiveness (Womack & Jones, 2005). The practices, concerns, competencies, and performance criteria of conventional supply chain are different from those for green supply chain management (GSCM).

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GSCM adds the ‘green’ component to conventional supply chain management by sourcing, purchasing, designing, manufacturing, operations, transportation, and distribution of products to customers in an eco-friendly way. GSCM uses reverse logistics and waste management for scheduling, applying and monitoring the well-organized, economical drift of raw materials, in-process catalog, finished goods and associated information from the point of ingesting to the point of recollecting value or proper discarding (Srivastava, 2007; Green et al., 2013; Ghobakhloo et al., 2013).

The green supply chain is defined as the chain of touch points for a product or service from the manufacturer to the customer where each link in the chain integrates the concerns for environment along with economic and social concerns into all their processes. The term “green” refers to the environment and is one of the three pillars of the concept of sustainability – environmental, social, and economic. The links in the supply chain include the raw materials suppliers, components, finished product/service, and wholesale and retail distributors. GSCM applies to each of the links in the supply chain acting in an environment-friendly way and involves ensuring that all the partners in the supply chain share the same concern for the environment (Rahimifard & Clegg, 2007). The overall strength of the whole green supply chain is limited by the weakest link.

The stakeholders’ demands and government regulations continue to push businesses to be more and more sustainable (Ashby et al., 2012). Motivated by the need for companies to move towards ecologically sustainable business practices including the practices of ISO14000 and ISO 26000, there is a growing need for integrating environmentally sound choices into supply chain management practices. A number of operational guidelines, standards, and legislative frameworks have been put in place to minimize environmental impact of manufacturing, distribution and retailing (Baines et al., 2012). Corporations, consumers and governments are becoming more aware of protecting the environment and adopting strategies for renewable resources (Sharma, 2013). Corporations are upgrading their supply chain management from a purely functional role to a strategic role to comply with current environmental legislations and maintain an enduring competitive advantage, through technological innovation and improved eco-efficiency (Mutingi, 2013).

The strategy of implementing GSCM can be risk-based and/or innovation based (Lee & Chen, 2010). A green supply chain strategy directly impacts the overall environmental, economic and operations performance. The economic benefits are derived from increased efficiency through reduced waste, competitive advantage through innovation, improved product quality, consistent corporate environmental goals and improved public image (Sharma, 2013). In today’s globalized economy, corporations are increasingly demonstrating a convergence of supply chains and sustainability (Mollenkopf et al., 2010). The firms’ ability to implement green supply chains is becoming a powerful novel source of competitive advantage and good economic performance (Rao & Holt, 2005; Green et al., 2012).

This chapter focuses on the role of the various factors that contribute to a firm’s green supply chain management. A conceptual framework of GSCM is presented that consists of eco-friendly organizational culture, collaborative relationships, innovative products and eco-friendly processes. Environmental Performance Index (EPI) and International Environmental and Social standards like ISO 14000 and 26000 are discussed. A SWOT analysis of GSCM is presented to enable a firm to select its context-specific GSCM strategy. The drivers of the implementation strategies for GSCM are described. Finally, the role of GSCM to firm’s business performance is presented.

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