



## A resource-based view of green supply management

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### ABSTRACT

Companies are being increasingly pressured to consider environmental concerns in their manufacturing activities and, more recently, with regard to their supply bases. Despite the broad range of literature that links performance to both green manufacturing capabilities such as pollution prevention and green supply management (GSM), managers are having difficulties developing a greener supply chain. The objective of this paper is to provide a model for development of GSM capabilities. Using the resource-based view of the firm (RBV) as the theoretical background, we postulate that plant resources are positively related to green manufacturing capabilities, which in turn are positively related to GSM capabilities. The data from a survey of a sample of manufacturing plants indicates that a managerial philosophy that includes external knowledge exchange directly supports both greener process management and environmental collaboration with suppliers. However, this managerial philosophy is only indirectly related to supplier selection and monitoring. The managerial implications of these findings are twofold: managers seeking to implement GSM need to view internal investment in green process management as a step toward environmental management of their external supply chains. They also must realize that green process management requires the support of other resources, such as environmental investments and top management commitment.

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### 1. Introduction

The fear that ecosystems are being exhausted has given birth to a growing concern that current modes of production do not take long-term sustainability and environmental concerns into account (Millennium Ecosystem Assessment, 2005). This concern has led to increased pressure on companies to conform to environmental standards (Chen and Sheu, 2009) and report their releases of pollutants. In North America, for instance, the United States government requires a Toxic Releases Inventory (TRI), the Canadian Government requires a National Pollutants Release Inventory (NPRI), and the government of Mexico requires the *Registro de Emisiones y Transferencias de Contaminantes* (RETC). These environmental management demands are pressuring manufacturing plants in many companies to not only reduce their environmental footprints, but also to provide evidence that they are doing so. Some critics of these requirements contend that this push can drive some plants to outsource polluting activities – the so-called race-to-the-bottom (Wheeler, 2001). When this happens at either the plant or corporate level, managers are able improve the environmental performance of their operations, but the net gain of the entire manufacturing process across the supply chain is zero (or negative, for example, if transportation emissions are taken

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into account). For instance, a company can outsource all of its metal surface treatment activities, and the resulting shutdown of the galvanic process lines will reduce its pollutant release levels. However, another plant upstream in the supply chain, perhaps in a country with a less stringent environmental regulation, continues to release the same level of pollutants.

It is likely that in the near future, governments, key clients, and environmental activists will start monitoring the outputs of individual plants or companies, and this increased surveillance eventually will incorporate environmental performance across supply chains. Monitoring the performance of supply chains, while not a current practice, is a strong possibility. In response to a variety of pressures resulting from environmental monitoring, companies could soon be required to submit new environmental reports based on life cycle analysis (LCA) methods (Sarkis, 2001) or other systemic approaches.

Given that new requirements are likely to be imposed, managers must be prepared to implement mechanisms at the corporate- and plant-level to assess and improve the environmental performance of their supplier bases. It is this assessment and improvement effort that we refer to with the term **green supply management (GSM)**. Once implemented, GSM is a form of social responsibility imposed on purchasing functions (Carter and Jennings, 2002). To date, GSM has received considerable attention in the literature (for a review, see Srivastava, 2007). However, none of the reported research provides a process model that can help managers implement GSM, nor does it provide a sound and testable framework that academics can rely on. This paper takes a significant step toward filling this gap.

Our discussion is based on the resource-based view of the firm (RBV) (Barney, 1991), a theory that postulates companies develop capabilities from their base of existing resources and capabilities and thereby form a path of capabilities development – the so-called path-dependence (Dierickx and Cool, 1989). We apply the path-dependence concept to derive a model for development of GSM capabilities in a manufacturing plant.

In taking a step toward filling this gap in the research, we make three contributions. First, we define and operationalize green supply management. Supply management is a well-established concept in operations management, but our interviews reveal that the capabilities required for GSM, while related, are different from those of traditional supply management. Second, we propose a framework for developing GSM. Because GSM is a capability that requires more internal effort and external coordination with supplier bases than traditional supply management, we propose that companies should first develop a set of internal resources, then green manufacturing capabilities, then GSM capabilities. Third, we provide empirical evidence that supports the framework for development of GSM capabilities.

The remainder of this paper is organized as follows: Section 2 presents the research model. In this section, we also provide a brief literature review and propose the study hypotheses. In Section 3, we present the data collection and analysis methods that we followed. Section 4 presents the results. Section 5 summarizes our findings, synthesizes the results and compares them with the literature, discusses the limitations of our study, and describes our contributions to theory development. Section 6 concludes the paper by providing implications for managerial practice and offers suggestions for future research.

## 2. Research model

Fig. 1 shows the theoretical model for the development of GSM capabilities and the essential organizational resources that enable the development of the complex capabilities required to implement GSM practices. However, the capabilities required for GSM are complex, and are dependent on intermediate capabilities. We propose that internal green manufacturing capabilities provide this intermediate step.

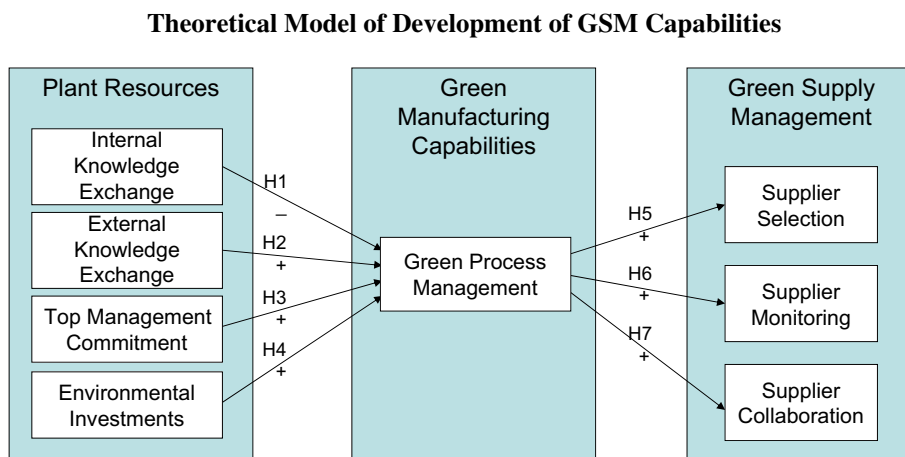


Fig. 1. Theoretical model of development of GSM capabilities.

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