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Environmental Supply Chain Innovation

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This chapter proposes a model describing why firms should invest in environmental supply chain innovation or ‘green supply’ activities. It argues that large high profile companies are under pressure from a wide range of stakeholders to improve their environmental performance. In contrast, small supplier firms are under less pressure, but are highly influenced by the demands of their customers. The model attempts to demonstrate that customer firms invest in environmental supply chain innovation because suppliers with poor environmental practices can expose the customer firm to high levels of environmental risk. However, implementation is dependent upon environmental pressure, firm capabilities and the degree to which customer firms are able to control their suppliers. The model is illustrated with a case study of UK supermarket retailer J Sainsbury Plc and five of their suppliers conducted over a four-year period in the late 1990s.

13.1 Introduction

13.1.1 Environmental Supply Chains

A number of authors have recognized the link between environmental management issues and buyer-supplier relations. For example, Lamming and Hampson (1996) draw parallels between environmental management practices (e.g. life cycle analysis, waste management and product stewardship) and supply chain management practices (e.g. vendor assessment, total quality management, lean supply and collaborative practices). Sarkis (2000) notes that there are elements such as product and operational life cycles, performance measures as well as environmentally influential organizational policy elements and interdependencies between supply chain and environmental issues. Integrating these elements is a means of reducing environmental impacts, as environment decisions by one organization may also affect the decisions of their customers and suppliers. Florida (1996) argues that “...close relationships across the production chain... facilitate the adoption of advanced manufacturing practices, creating new opportunities for joint improvements in productivity and environmental outcomes.” Green et al. (1996) argue that supply chain analysis is a useful way in which environmental issues can be incorporated into industrial transformation processes. They argue that green
supply, “... the way in which innovations in supply chain management and industrial purchasing may be considered in the context of the environment” (p. 188) has greater potential to address environmental concerns than such things as ‘green consumerism’ because it is grounded in non-altruistic market principles (Green et al, 2000). Hill (1997) recognizes the importance of supply chain dynamics and its link to environmental pressure in changing firm behavior: Environmental pressure can thus be conceptualized as moving along the supply chain through two constituent elements: through customers, those who purchase the products of the firm; and through suppliers... (p. 1259).

Many of these authors have also recognized the strategic implications of environmental supply chain innovation. For example, Hampson and Johnson (1996) argue that environmental issues can be related to overall business efficiency. They also note that interest in environmental supply chains is based upon increased awareness in environmental issues, the increasingly strategic importance of purchasing and trends towards co-operation and partnership approaches between customers and suppliers. However, Hill (1997) argues that while the potential for supply chains to exert environmental pressures exist, there were relatively few cases where it was actually occurring. Young (2000) argues that this is due in part to the lack of information sharing within the supply chain: “Only when organizations in the supply chain exchange information backward through their channels will supply chains discover more efficient, environmentally sound, and profitable disposition solutions.” Following along similar lines, New et al. (1997) argue that a holistic approach to supply chain management can benefit environmental management practices. “… the idea is simply that a firm operating at one point of the supply chain runs the risk of organizing its activities to achieve parochial objectives which result in sub-optimization for the chain as a whole” (p. 2). This they claim is more important for sectors where supply chains are part of competitive advantage. They also recognize the importance of who holds the power in the supply chain.

Much of the above research is empirically based and/or normative in nature, while some suggest the mechanisms by which green supply may be implemented. However, there has yet to be a sufficient explanation as to why firms should engage in such activities. In addition to overall environmental improvement (which is often counter to tangible financial performance), this paper argues that large customer firms invest in environmental supply chain innovation as a means of reducing their exposure to risks associated with their suppliers’ poor environmental performance. For the purposes of this discussion, environmental innovation is defined as a new product, process or technology developed and/or adopted by a firm to reduce environmental impacts. Environmental supply chain innovation is when a supplier, under the advice, coercion or direction of a customer firm, adopts an environmental innovation. Of relevance to this discussion is the notion that there must be some form of inter-firm innovation (i.e. an exchange of information, joint development of a technology, etc). Without inter-firm innovation, the customer firm is only acting as a regulator and leaving the onus of the innovation to the supplier.

This paper argues that large high profile firms are exposed to stakeholder pressure that goes beyond legal environmental responsibilities. Such large firms