

## CHAPTER FIVE

# SUPPLY CHAIN DRIVERS

There has been a significant shift from companies owning and operating manufacturing facilities in North America to leveraging a complex web of suppliers (sometimes thousands of suppliers) that are geographically dispersed and often are small to medium-size enterprises (SMEs). In many cases, this shift in manufacturing has created a “chain of uncertainty” related to the composition of products and the environmental impact of manufacturing facilities.

Key drivers for greening the supply chain include

- ensuring (and, where appropriate, simplifying) compliance with pertinent environmental and product legislation and in the process, demonstrating due diligence
- avoiding costs by eliminating or lowering fees associated with the management of waste, air emissions, water discharges and hazardous materials (e.g., disposal/permit fees, special storage facilities, emission control equipment, reporting)
- minimizing costs associated with take-back, i.e., disassembly and disposal/recycling of goods that are returned where required by legislation or company policy
- reducing costs by conserving water, energy, fuel and other resources
- reducing risk of accidents, insurance costs and health and safety costs
- improving relationships with key stakeholders (government agencies, local communities, customers, etc.) by demonstrating commitment to environmental initiatives

Companies are now faced with four interrelated objectives as they manage environmental issues across their supply chain:

- **Ensure eco-design** criteria for company products are recorded in requirements document and properly communicated (where possible in a collaborative manner) to suppliers (and their suppliers) and a rigid system of checks and balances is in place to ensure compliance.
  - *An example of eco-design criteria is the prohibition on the use of six chemicals that are listed under the Restriction of Hazardous Substances (RoHS) legislation for electronic parts.*
- **Practice green procurement** by developing criteria with proper verification procedures.
  - *An example of a green procurement rule is the purchase of timber that is approved by the Forest Stewardship Council (FSC) or a requirement that suppliers have an eco-label on goods.*
- **Fulfill CSR commitment** by ensuring that supply chain activities conform to the company's CSR policy and objectives.
  - *An example is a commitment to reducing the carbon footprint of both company and supplier operations.*
- **Eliminate mismanagement** of environmental issues throughout the supply chain, placing a strong focus on reducing costs.
  - *An example is working with suppliers to reduce energy and water consumption at their facilities and to pass the cost savings along to the consumer by reducing the price of the product or service.*

Figure 5.1 illustrates some of the different dimensions of a supply chain as they relate to environmental issues, and the degree of control that a company has over them.<sup>1</sup> The key activities for individuals managing their company's supply chain include

- identification of risks related to components that “cannot be controlled” and development of appropriate mitigating measures
- balancing the different business objectives related to eco-design, green procurement and CSR with other business goals, e.g., reduction in inventory, keeping production active, cutting supply chain costs and showing that green decisions can add value to the bottom line

## Figure 5.1: Supply Chain Environment Issues



Phyper & MacLean, 2009

- proactive management of customer/supplier activities that can be influenced by taking into account eco-design, green procurement, CSR and mismanagement (costs) challenges

Note that the term “environmental footprint” refers to the environmental impact associated with manufacturing, distribution and transportation at company-owned or third-party operations: air emissions, wastewater discharges, waste generation, recycling/reuse, water usage, energy usage, presence of hazardous materials in products, reduced discarded packaging material, etc.

This chapter addresses the following key questions related to supply chain management:

- What is the real consequence of having inadequate systems/processes in place to manage environmental issues?
- What are the common pitfalls that organizations fall into that seriously hinder supply chain efficiency?
- What is the impact of government legislation and policy on supply chain management?
- How are sectors and organizations influencing suppliers?
- What is logistics optimization and how is it being applied?

Green programs must reflect the multi-layered and multi-dimensional supply chain to achieve cost efficiencies and avoid cosmetic environmentalism.

## SO WHAT? I JUST PAY A LITTLE FINE

More than 71,000 cargo containers enter American seaports daily. In 2006, 467 products were recalled for one or more of the following reasons:

- they contained hazardous materials such as lead
- they were prone to failures such as the separation of treads on a tire
- they contained carcinogenic material or otherwise posed a serious health risk to consumers

In 2007, there was an average of twenty-eight products recalled weekly for environmental and safety reasons.<sup>2</sup>

What is the impact on an organization that does not properly manage environmental issues across their supply chain?

**Government response**—A full range of responses depending on the type of infraction may be imposed: fines, special one-time fees (e.g., clean-up costs) and even jail time for negligent executives. Fines may be imposed per incident and if the incident persists over a prolonged period of time, the total fine can add up. Government bodies may also ban or significantly restrict the use of a resource (e.g., water, mining rights), prohibit the import/sale of a product, or blacklist a manufacturer or importers. The latter will become easier as the U.S. Homeland Security’s Customs and Border Protection (CBP) Automated Commercial Environment (ACE) system is up and running.

**Lost revenue**—Products may be taken off the market for a period of time, miss a window of opportunity for a launch or require considerable modification. In the long term, the overall sales life of the product may be impaired. The company may also miss the opportunity to lock in buyers if there is a competitive offering released at the same time. Lost market share is generally never regained.<sup>3</sup>

**Fixing product**—Fixing a non-compliant product is seldom a trivial task and may involve significant redesign effort, including retooling, re-qualification and reliability testing of all new components.<sup>4</sup>

**Inventory**—Two key decisions must be made concerning non-compliant inventory: one, what to do with units in inventory and two, do you fix or replace units in the field? The company may decide to scrap or redirect non-compliant components or subassemblies for use in other products or markets. The company will also have to ramp up existing suppliers or find new ones.<sup>5</sup>

**Lawsuits**—California Proposition 65 is enforced entirely through litigation. To state a cause of action, a plaintiff need only show that a listed chemical is present in a consumer product and that the defendant business is “knowingly” exposing Californians to that product without providing an appropriate label. Add on class action lawsuits regarding hazardous ingredients in products as well as sudden drops in share price due to product recalls and you have a very litigious environment in the U.S.

**Corporate brand**—Newspapers, magazines, blogs and all kinds of media reports have been filled with stories of well-known brands that have failed to ensure that their products or the conditions of their factories (domestically and

internationally) are safe and not impairing the environment. Whether the factory is owned or just contracted to by the brand is irrelevant, as most published articles tend to only mention the brand's name. Warren Buffett best describes corporate brand: "It takes 20 years to build a reputation and five minutes to lose it." The link between corporate reputation and product brand is also explored in chapter 4. Case studies on several well-known companies, including Sony and Mattel, and difficulties they have encountered are presented at the end of this chapter.

Compliance is a must. The key business issue is, how does the company put in place cost-effective systems to ensure ongoing compliance?

## COMMON PITFALLS

The five common pitfalls related to the management of suppliers include the following:

1. failure to assign an "owner" to the overall procurement process and activities
2. absence of criteria to properly allow green issues to be factored into purchasing decisions
3. disconnect between accounts payable and procurement regarding fulfillment of obligations by suppliers related to green activities
4. inability to influence/control suppliers because of integrity issues or processes
5. improper management of natural resources that are used as raw materials

## Ownership of Procurement

Many companies are appointing chief procurement officers (CPOs) or chief supply officers, positions that have assumed importance in recent years as suppliers outsource manufacturing and look for efficiencies and cost reductions by manufacturing abroad. Key issues facing CPOs include the following:

- Strategic planning—In order to be successful the CPO needs to be a part of the process and must develop a "mental model" to articulate supply chains' role in shaping and fulfilling company strategy.<sup>6</sup>
- Internal collaboration—The supply chain must be made strategically relevant by making connections across company business units and linking