CLARIFYING THE BUSINESS CASE FOR GREEN SUPPLY CHAIN MANAGEMENT

By Yossi Sheffi

For most companies, sustainability is not a simple case of "profits vs. planet" but a more subtle issue of people looking for jobs and inexpensive goods versus others who seek a pristine environment. Here's how your supply chain can satisfy these conflicting motivations to achieve both economic growth and environmental sustainability.

Environmental sustainability is first and foremost a logistics and supply chain management (SCM) issue. Supply chain activities such as procuring raw materials and transporting goods impact companies' environmental performance. Moreover, environmental groups rightly hold companies responsible not just for their own actions as corporate citizens, but also for the actions of their suppliers. Managing supplier relationships falls within the remit of the SCM discipline.

Given these pressures, it appears that companies have an explicit case for investing in supply chain sustainability programs—yet the case for making substantial investments is far from clear and companies tend to do the minimum necessary to support sustainability goals.

Much of the ambiguity springs from the rationale to pursue green supply chain practices. One motivator is that companies tend to be put on the defensive by criticism from environmental groups and need to respond. The sheer complexity of greening supply chains is another reason for investing in green—albeit minimally. But the main reason for corporate caution when it comes to green investments is that consumers are unwilling to pay a premium for sustainable products.

First, let's look at why enterprises have devoted—and continue to devote—resources to green supply chain initiatives.

Officially, companies often champion their environmental credentials in glossy reports, speeches, and media interviews. Behind the scenes, however, many will admit that they do only the minimum for three basic reasons.

1. Risk mitigation. Regardless of the degree to which company executives believe in the threat of climate change or the ravages of environmental degradation, many of their customers do, and they need to respond to these beliefs (even though the same customers are not likely to be willing to pay more for sustainable products). If they don't, they risk incurring the wrath of non-governmental organizations (NGOs) and the media, leading to reputational damage.

This class of supply chain risk management can be termed eco-risk mitigation: initiatives that aim to reduce the likelihood and magnitude of business disruptions caused by environmental issues. In addition to the threat of reputational damage, this type of risk also encompasses investor actions that trigger management changes and disruptive government regulations.

Insurance Limits

Unfortunately, unlike insurable events such as natural disasters and accidents, risk managers have scant reliable actuarial data for quantifying the likelihood of NGO strikes, consumer preference changes, or adverse regulatory changes. Consequently, the few available insurance policies have limited scope and high costs. Thus, companies are left to manage these risks themselves using "just-in-case" or scenario-based justifications for risk mitigation.

In the early 1990s, chemical company BASF learned of the potential toxicity dangers of using brome-based flame retardants in its polyamide plastic line. If incinerated, the material could produce highly carcinogenic dioxins in the smoke. The company took decisive action. "Less than six months after receiving an initial heads-up from management, the product was completely pulled from the market," says Carles Navarro, president of BASF Canada.

An investment in software helped office supplies retailer Staples enhance environmental performance and reduce fuel consumption and emissions in its delivery truck fleet.

Although it was "the right thing to do," sales suffered. Customers complained, and competitors that still sold polyamide with the toxin gained market share. It took two years for BASF to find a safe alternative material. On the plus side, the company was not subject to reputational costs or attacks from environmentalists and the media when it did not have product on the market.

2. Cost cutting. Investing in green initiatives can reduce supply chain costs. An example is reducing the number of empty miles, which can shrink carbon footprint and capture transportation cost savings.

Switching to local sourcing is a way to take miles and cost out of a supply chain and reduce the carbon footprint. This is especially true for food, where NGOs and environmental writers have popularized the concept of "food miles." Whole Foods, Walmart, and other retailers have programs to "buy local" typically from suppliers in the same state or a modest distance away.

Local sourcing, however, does not always reduce a product's total life cycle carbon footprint. Factors such as the carbon intensity of the local power grid or the need for energy-intensive production techniques can more than offset any environmental impact savings from reduced transportation.

Another retailer, Staples, found a way to cut costs and enhance its environmental performance with a relatively modest investment in software. In 2006, Mike Payette, director of fleet operations, was investigating ways to reduce costs, fuel consumption, and emissions on the office supply retailer's fleet of delivery trucks.

He changed the control software in one delivery truck to limit its top speed to 60 mph, monitored fuel consumption for 45 days, and found that average gas mileage climbed from 8.5 mpg to 10.4 mpg—a reduction in fuel consumption of almost 20 percent. Payette estimates it cost only $7 per truck for him to upload the new software in every vehicle yet the change yielded $3 million in fuel savings annually.

3. Hedging. The third incentive for modest investments in green is that companies need to gain relevant expertise just in case consumer taste and demand change. For instance, millennial consumers tend to be more environmentally conscious than the baby boomer generation, and these convictions may shape future markets.

In 2008, cleaning products maker The Clorox Company launched a line of environmentally friendly cleaners

called Green Works, a family of 17 green cleaning products designed with natural active ingredients that competed with the company's main line of cleaning products.

Buoyed by a $25-million annual advertising push in 2008 and 2009, the Green Works product line sales brought in $58 million a year in 2009. However, the price premium of the products during a recession, and doubts over its efficacy, caused sales to fall to just $32 million in 2012. Clorox responded by lowering the product's price and launching a rebranding campaign in 2013 to attract mainstream buyers.

Ultimately, Green Works proved to be a money-losing proposition, yet the company's CEO Don Knauss insisted that "it was all about growth." The venture enabled the $5.6-billion company to make a relatively small investment in building its knowledge about green products.

Many companies also tout cost cutting or other corporate projects that happen to yield environmental benefits as mainly green projects. An example is when Shell sold its stake in Alberta's oil sand project to ease its debt burden, which soared after its expensive acquisition of BG Group PLC. The company was successful in its media campaign to present the sale as a move away from fossil fuels. The media propensity to highlight "green" helped. Shell's strategy prompted newspaper headlines about how the deal enabled the company to distance itself from an environmentally controversial venture.

Clorox sells its Green Works line of natural cleaning products on the same store shelves as its regular household cleaning products.

Plants vs. Profit (Really?)

The reasons described above motivate companies to invest in green supply chain initiatives—yet many do only the minimum because they do not believe in the need for this effort, or more commonly, that current initiatives do not meet any reasonable cost benefit test even if global warming is real and the danger acute.

Despite this skepticism, companies continue to align themselves with the sustainability movement in public. Why do they maintain this front?

One reason is that many enterprises are put on the defensive when environmental sustainability is framed as a "profits versus planet" or "societal good versus corporate evil." These narratives ignore the role of businesses and their supply chains in both employing people and delivering improved standards of living to humanity.

All stakeholders need to recognize that even the most environmentally responsible companies must manage their supply chains to satisfy growing demand and provide employment opportunities.

The real conflict is not "profits versus planet" but "(some) people" versus "(other) people." More specifically, people who believe in the importance of environmental stewardship vs. people who are looking for jobs and affordable goods. Both are right.

Occasionally, this realistic view comes to light.

An example is the controversy caused by NGO ForrestEthics, when it attacked retailers and logistics providers that used trucking companies who fuel their fleets with diesel derived from Alberta's bitumen sands. In response, Alberta's government provided information on the number of jobs created by the bitumen sands operation as well as its overall economic contribution, and published reclamation data. The Canadian people were somewhat less measured in their response; they organized a boycott of companies that were quoted as avoiding Canadian fuel.

Even when companies do the "right" thing, they can be caught in the crossfire when ideology and pragmatism conflict. For example, Walmart worked with various stakeholders to develop seafood certification programs that support sustainability. In 2015, environmental group Greenpeace contended that Walmart was not doing enough, whereas Alaskan fisherman and state officials complained that the company was asking too much of them and endangering their livelihood.

Green Can be Challenging

The challenges of green supply chain management also make the case for large investments in sustainability dubious—and are a source of confusion when environmental groups underestimate just how difficult it is to meet sustainability standards.

For example, balancing supply chain sustainability with enterprises' commercial and societal obligations is far from easy. Casting sustainability as a purely ideological struggle is a gross simplification of the balancing act that enterprises must perform to reconcile sustainability with the rigors of running successful businesses and the provision of employment and well-being for the communities in which they operate.

Consider aluminum producer Alcoa, a company that supports multiple green initiatives. Between 2005 and 2015, the manufacturer improved production efficiency by 4.2 percent and reduced greenhouse gas emissions by 25.9 percent. In 2011, it ran 650 initiatives to reduce energy consumption and emissions that led to cost savings of $100 million, while meeting its greenhouse gas emissions targets.

Yet to remain cost competitive in a global commodity business, Alcoa needs to burn Australian brown coal as a low-cost energy source—a strategy that environmentalists have condemned.

While many consumers refuse to pay more for sustainable products, some retailers, such as Patagonia, have cultivated customers who share a deep passion for green living, and will support it with their wallets.

In addition, evaluating the carbon footprints of supply chains is fraught with difficulty, especially in today's globalized commercial world.

Supply chain practitioners are intimately familiar with the challenges associated with tracking product flowing through supply chains. But keeping tabs on the carbon footprint at various points in the supply chain can be much more onerous.

For example, although Chiquita owns much of the banana supply chain, its operations account for a little less than half of the banana's total carbon footprint. This is actually a relatively high figure due to Chiquita's "shallow" supply chain, which includes only two basic tiers, and the company's direct control over it.

For many companies and many supply chains, the customers' suppliers and customers along the supply chain contribute, on average, three times as much to a product's carbon footprint as the company's own operations. This ratio is significantly larger for companies such as Cisco, Apple, Microsoft, and most retailers, who outsource most or all manufacturing and transportation activities. Moreover, in the consumer discretionary product industry, the footprint outside the company is 19 times greater, on average, than the footprint inside the company.

The sheer complexity of modern supply chains can also make it difficult to evaluate operational carbon footprints.

Consider the humble banana. One would be hard-pressed to find a seemingly simpler product to assess for carbon emissions levels, yet the reality is far more complicated. This simple product hides a bunch of complex issues, according to an assessment of the greenhouse gas emissions of the banana supply chain carried out by the MIT Center for Transportation & Logistics.

A wide range of factors, such as the amount of fertilizer used by growers and how bananas are transported during the long trip to supermarket shelves, influences the size of the product's carbon footprint. Temporal and geographic variations of the underlying supply chain further complicate the calculation.

For example, researchers estimate that 17 kg of carbon emissions is the average carbon footprint of a box of bananas grown by Chiquita in Costa Rica and sold in the United States. In reality, each box of bananas has a very different carbon footprint depending on where in the United States, or around the globe, the fruit is sold.

Consumer Ambivalence

Such complexities, combined with the need to respond to environmental campaigners, motivate companies to maintain a public alignment with supply chain sustainability. But the main reason for maintaining this public face, while only affording minimal support for large green investments behind the scenes, is that consumers are not willing to pay higher prices for green products and services.

Despite what they say when interviewed by journalists, NGOs, or academics, the majority of buyers choose not to pay more for sustainable products when faced with the choice at the retail shelf. They generally choose the cheaper product—even if it is less environmentally sustainable than more expensive options.

If their customers are not willing to support sustainability through their buying decisions, why should companies make substantial investments in green products?

Voting With Their Wallets

There are exceptions. Companies such as Dr. Bronner and Patagonia, which are fiercely devoted to high standards of sustainability, have customer bases that share these principles. The buying habits of these consumers reflect their passion for green and the companies can invest in sustainability efforts even when it increases their costs because these customers will pay for it.

By and large, however, consumers vote with their wallets.

And it's not just price that drives these buying decisions; convenience is another important factor. For example, individuals order products online even when these purchases have a large carbon footprint owing to activities such as truck deliveries that generate greenhouse gas emissions, as well as wasteful packaging. The convenience of the online channel is extremely compelling.

To understand why it make sense for consumers not to pay extra for green products one has to understand the ladder of product attributes that consumers consider in the purchase process.

Search attributes are obvious tangible properties; a blue versus a red car, for instance. Experience attributes such as taste can be verified after a purchase, such as the taste of the cup of yogurt.

Intrinsic credence attributes such as the level of noxious emissions generated by a car can be verified after the purchase but only by using specialized expertise or equipment. Hidden credence attributes are not part of the products and therefore can't be verified by the consumer. Examples include the use of child labor to make a product or the amount of pollution it causes in manufacturing.

To inform consumers of a product's

green credentials, companies often affix labels to the item that attest to its environmental credence. But this is far from a perfect solution. Attributes such as the trustworthiness or level of clarity of a label influence its effectiveness. The sheer number of available labels can confuse consumers. More importantly, the labels themselves vary wildly in their rigor and trustworthiness.

When consumers find it difficult to distinguish between a high-quality product and an inferior one, they will not pay extra when a seller argues that their product is superior—they will only pay for average products. This is called the Akerlof Effect. The result is that sellers of superior products leave the market and the quality deteriorates over time until the market collapses. It follows that if consumers can't judge the degree to which a product is sustainable, they will not pay for "responsible" products.

Given these ambiguities, it makes perfect sense for companies to do the minimum needed to burnish their sustainability credentials, to cut costs where possible and do the minimum to avoid NGO attacks. Look behind many of the triumphant statements in press releases, and you will find projects that are much more modest than the promotional material suggests.

Sustainability is intimately connected with supply chains, the complex economic structures formed by companies that use the global supply of natural resources to meet worldwide consumer demand and provide employment for millions of people.

The design and management of supply chains plays a dominant role both in creating and in mitigating the environmental impacts of sourcing, manufacturing, transportation usage, and disposal of all products that sustain and improve peoples' lives.

However, supply chain management processes also are caught in the crossfire between the tensions of economic performance, natural resource stresses, societally acceptable practices, and regulation. The debate regarding the acceptable tradeoffs between human standards of living and prevalence of jobs on the one hand, and levels of environmental impact on the other, has already begun, and it will affect the constraints and opportunities that companies already face.

Meanwhile, if we are to set and meet supply chain sustainability goals that are both realistic and effective, it is vital that we move away from sloganeering and carry out a sober assessment of what we are trying to accomplish, how much it will cost, whether the cost justifies the effort and any resulting dislocations, and how we will go about it. ■

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