

# Why you should lead the green charge

With their experience leading cross-functional initiatives and implementing best practices, supply chain professionals may be in the best position to lead enterprise-wide sustainability efforts.

**IS ENVIRONMENTAL SUSTAINABILITY COMING OR GOING** as an important aspect of business strategy and competitive advantage? Some observers suggest that several factors—recent drops in the price of crude oil and natural gas, a global recession that is pushing companies to the brink of collapse, and a consumer base that is financially stretched—are making sustainability less important to the business strategy portfolio. To be sure, some companies (perhaps even many companies) will de-emphasize environmental efforts in the short run. Yet there can be little doubt that the forces driving sustainability efforts are poised to achieve renewed prominence.

Indeed, recent supply-side resource and economic trends are encouraging companies to resume conservation and sustainability efforts, even in the midst of a recession. The price of gasoline is rising once again. Transportation substitutes for oil and gas are years away from reaching meaningful scale. The prices of electricity and water have not taken a recession-related holiday and are expected to continue rising.

Furthermore, world markets for these resources will be under increasing pressure from the demands of growing middle classes in China and India, as so well described in Thomas Friedman's book, *Hot, Flat and Crowded*.<sup>1</sup>

Additionally, large consumer segments continue to care about the environment and are willing to “vote with their wallets”—that is, to buy products they believe are beneficial to the environment and even to pay a small premium for them. They will be aided in making those decisions by government-required disclosures about a product's environmental impact, such as its carbon footprint. Product disclosures—often represented as information on product labels—are not new.

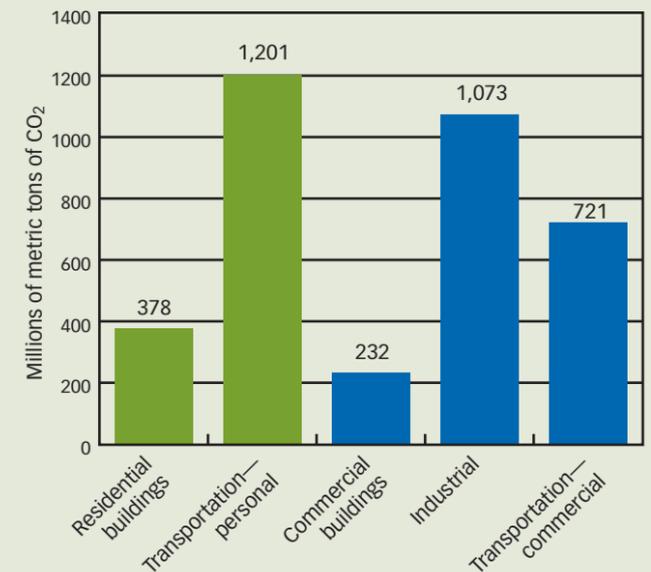
Similar disclosures about such information as food and drug ingredients and caloric content, automobile mileage and safety performance, and country of manufacture have a long and successful history of influencing consumer behavior and industry practices. Firms with substantive achievements, and therefore a real stake, in green products and sustainable operations will have no choice but to leverage environmental disclosures to discredit the claims of the pretenders. In an economy where the consumer is king, no industrial firm can expect immunity from the influences of disclosure and competition.

Market forces will not be the only thing pushing companies to continue investing in environmental initiatives. Governments, especially in Europe, are beginning to legislate the rules of participation. In the United States, where the Obama administration is expected to establish a binding carbon emissions “cap and trade” system, the game will change in important respects. What is now voluntary will become required. Methods for estimating carbon footprint will become more standardized. The financial consequences of carbon-footprint performance will become explicit, visible, and significant as carbon emissions acquire a “market price.” A cap-and-trade system will also create much of the information base that will be needed to provide carbon disclosures at the consumer and industrial purchase level. The unprepared company will face structural cost disadvantages and pricing pressures stemming from unfavorable comparisons by consumers at the point of sale or in business negotiations with firms that are motivated to reduce their carbon footprint.

From this perspective, it would be difficult to overestimate the importance of sustainability. The main questions are when and, to a lesser extent, to what degree this new business mandate will emerge. As that day nears, it will become more urgent for companies to have both an environmental strategy and, more importantly, a plan for execution. Unless a company can demonstrate real results, even the most carefully designed message will be ineffective. In a world where environmental sustainability is effectively monetized, there will be no substitute for results.

For these reasons, some experts still predict that companies will continue to focus on the environment

[FIGURE 1] 2004 EMISSIONS OF CO<sub>2</sub> BY SECTOR



[SOURCE: AMR RESEARCH, THE RESULTS GROUP]

despite current economic troubles. In the February 13, 2009, issue of the *Financial Times*, Daniel Vermeer and Robert Clemen of Duke University wrote: “While traditional corporate responsibility and philanthropic efforts may suffer, core elements of the sustainability agenda will survive or even thrive in a re-ordered economy.”<sup>2</sup> The core elements they mention are those that relate to responding to regulation and managing the continuing and emerging supply and demand pressures.

Someone has a shining opportunity to lead this charge into “green” territory. If doing so requires, as Vermeer and Clemen suggest, not only a mastery of supply, demand, and regulation but also the delivery of large-scale results, then the logical place to turn is to supply chain leaders. With their cross-functional responsibilities and high-level view of both internal and external relationships, supply chain professionals may be in the best position to lead substantive, meaningful corporate environmental sustainability efforts.

[BY BILL SCHNEIDERMAN]

### Beyond changing the light bulbs

To see why supply chain professionals are particularly well-suited to lead these efforts, it's important to understand the scope of the initiatives involved. Many companies have already taken initial steps toward reducing their carbon footprints by implementing changes that have a quick and obvious return on investment (ROI), such as switching to more efficient lighting in distribution centers and offices. This type of action is the classic "no-brainer": Structural changes are not required, the work is completely controllable because it is within the company's "four walls," and there is little potential for conflict because no one has to change behavior.

The impact of such easy, close-at-hand opportunities, however, usually is small, especially when compared with a company's total extended carbon footprint. Figures 1 and 2, compiled with assistance from AMR Research in 2009, show how large the opportunity is for reducing carbon emissions. In terms of the United States' total CO<sub>2</sub> emissions that are controlled by personal or business decisions (excluding sectors controlled by public policy, such as energy production), businesses represent 56.2 percent of the total, and commercial buildings represent only 11.5 percent of that. Changing light bulbs constitutes only a fraction of the opportunity for reducing commercial buildings carbon footprints—let alone for the entire business sector. The larger, more influential opportunities lie in optimizing business processes and supply chains.

The experience of one building-products manufacturer offers an example of what can be achieved by optimizing industrial processes. Recognizing both its environmental impact and the risk to its cost structure of rising energy prices, this company launched an effort to reduce its consumption of natural gas. The company's engineering, production, and quality organizations collaborated on an effort that changed several aspects of its production process. Requiring no significant capital investments, the initiative yielded a 6.1-percent reduction in natural gas consumption per unit produced. This 22-million metric-ton annual reduction in carbon emissions and the resulting one-point improvement in plant profitability dwarfed anything the firm could have achieved through changes to its commercial buildings.

Any firm that takes its sustainability efforts one step further and looks beyond its own confines can produce a multiplier effect—especially if it controls supply and production through a deep bill of materials and/or distribution through an extensive network. Continuing with our lighting example, think of all the lights in supplier's offices and factories, not to mention those of the distribution network, yet to be changed! That remark is made half in jest, but it does

illustrate one kind of multiplier effect. More important multipliers involve making improvements to repeated, "carbon-hungry" processes such as fabrication, transportation, and/or product use.

For example, a manufacturer of semiconductor capital equipment set out to calculate its carbon footprint and cost-savings opportunities for its spare-parts supply chain. A collaborative modeling effort of the global, end-to-end operation identified opportunities from optimizing locations, transportation modes, fulfillment, and replenishment. As a result of looking across the entire supply chain, the company expects to realize 19-percent annual and recurring reductions in logistics costs along with 8-percent annual and recurring reductions in associated carbon emissions.

Many companies can achieve significant environmental improvements by addressing the big opportunities in fabrication, transportation, and product use in conjunction with multiplying smaller opportunities across a supply chain. Identifying those opportunities and implementing the necessary changes at this scale and scope is much harder than changing a company's own behavior. It is more complicated to plan and implement change across internal and external players; it may require structural and behavioral change (and thus, may generate conflict); and the outcomes are much less certain and harder to control. It takes strong leadership to achieve all of this in the face of such challenges.

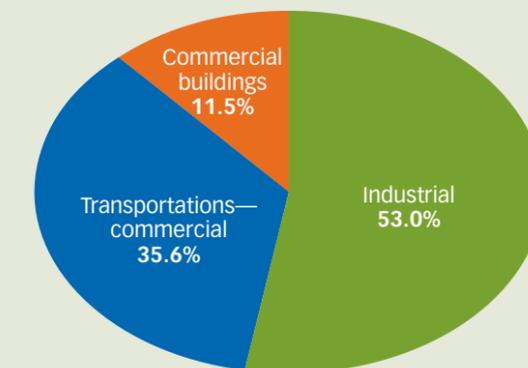
### Why supply chain can lead this transformation

Truly effective carbon-footprint efforts will have to work on a large scale and cut across many different organizations. Supply chain organizations are in a favored position to lead such efforts in part because many of the mindsets and skills required in the supply chain discipline are also applicable to managing environmental initiatives. These include:

- The ability to manage an extended "ecosystem" inside and outside the corporation;
- Experience building capabilities and processes across that ecosystem;
- The habit of end-to-end thinking, design, execution, and measurement;
- A cultural connection to measurement and execution; and
- Experience influencing design decisions that affect a product's environmental impact.

**Managing an extending ecosystem.** The first thing that makes the case for supply chain leadership so compelling is its ability to deliver results across an interdependent ecosystem that extends both inside and outside a corporation. This interdependent ecosystem often includes product/service design and launch professionals, multiple levels of suppliers, dis-

[FIGURE 2] 2004 U.S. CO<sub>2</sub> EMISSIONS BY BUSINESS SECTOR



[SOURCE: U.S. ENERGY INFORMATION AGENCY, ANNUAL ENERGY OUTLOOK 2005, AND U.S. ENVIRONMENTAL PROTECTION AGENCY, "INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS"]

tribution and channel players, logistics and transportation companies, and information technology providers. Large-scale carbon-footprint reductions usually involve these same players, and possibly others.

**Building capabilities across the ecosystem.** Facilitating carbon-footprint reduction often requires building new capabilities across the ecosystem. The relevant players in the ecosystem may not yet understand carbon-emission concepts, measurement tools, and modeling capabilities. Organizations involved in supplier development have experience in helping external partners develop new capabilities. The methods and discipline used to help a supplier achieve a new level of repeatable quality or sophistication in handling orders are similar to those needed to help a supplier reduce its carbon footprint.

**End-to-end thinking.** Historically, supply chain integration has focused on improving quality, delivery, time, inventory levels, and cost. There are many synergies between these traditional supply chain goals and the newer sustainability goals. While there are exceptions, supply chain and sustainability actions are largely aligned. For example, virtually every cost associated with improving quality represents an increased cost in terms of carbon. Repeating a manufacturing process or delivery always produces more carbon than getting it right the first time; increasing end-to-end yield would similarly reduce carbon emissions.

Best supply chain practices have historically involved adopting an end-to-end perspective. Supply chain management focuses on balancing measures and optimizing performance across the whole supply chain rather than suboptimizing one part at the expense of

the whole. Developing a carbon-efficient supply chain should be thought of as similar in scope and effort to developing a competitive advantage through some strategic combination of product quality, delivery speed, inventory turnover, or total-cost reduction. These advantages cannot be created and maintained without end-to-end thinking and design and, ultimately, end-to-end execution and measurement.

**Culture of measurement and execution.** The focus on execution and measurement that imbues the culture of successful supply chain organizations can and must be leveraged for large-scale carbon-footprint reduction. Consider that supplier management involves setting appropriate performance targets and then managing to those performance targets across the ecosystem. Managing to targets involves developing metrics for monitoring execution at various levels and in both short and longer time frames. Similarly, improving sustainability performance entails setting relevant targets and measuring execution against them. Sustainability-related activities are accomplished largely by the same organizations and through the same process as any other extended supply chain performance-improvement effort.

**Design influence.** Any discussion of sustainability leadership must acknowledge the prominent role of product development and design. Products and services that help customers and consumers reduce their own energy consumption, carbon footprints, and waste streams offer tremendous value not just to buyers but also to society and the company itself. A product's green characteristics (such as size, weight, and the ability of both product and packaging to be recycled) as well as the environmental impact of the operations and supply chain that bring it to market are largely set during the development and design stages.

Supply chain organizations often influence how products are designed for quality, reliability, manufacturability, serviceability, deliverability, and the like. This knowledge and experience can often provide value when designing for sustainability. Designing for sustainability is not exactly the same as designing for cost/quality/manufacturing efficiency, but the strategies for achieving those outcomes will be familiar to supply chain groups. Examples include:

- Simplifying production requirements to enable the company to source both supplies and production close to customer clusters;
- Cutting product complexity and raising tolerances to increase end-to-end yields and reduce quality-related energy consumption;
- Selecting materials that are lighter, use less energy to fabricate, and facilitate recycling;
- Reducing the size and weight of packaging to cut transportation-related energy and emissions; and

▪ Increasing product reliability/durability to decrease the frequency and carbon costs of repairs and returns.

To help institutionalize design for sustainability, supply chain organizations can leverage their cultural affinity for repeatable processes and execution excellence to create and maintain sustainable product development practices and process documentation. Just as many companies have built into their design practices and processes the use of criteria and “libraries” for reusing common parts, so too can they institutionalize guides for achieving favorable environmental outcomes.

### Leadership in wealth creation

If it were easy to seize leadership of sustainability initiatives, more supply chain organizations would already have done so. Although their mindset and skill advantages are well-suited for green leadership, this alone is not sufficient reason to bring supply chain managers to the forefront. Would-be leaders also need to:

- Position sustainability as an opportunity for the enterprise;
- Articulate sustainability’s value to the organization; and
- Overcome resistance and build engagement across the internal and external ecosystems.

To lead their companies’ sustainability efforts, supply chain managers have to be able to not only under-

stand and articulate the relationship of sustainability to an enterprise’s primary purpose—the creation of wealth—but also spell out how the enterprise can achieve it. Both the scope of the sustainability challenge and the means to achieve it are best summarized through an enterprise sustainability framework.

The Green Enterprise Maturity Model shown in Figure 3 provides a framework that helps leaders conceptualize how the sustainability initiative involves the whole enterprise and articulates how it can generate wealth. This framework provides a platform for highlighting the intertwined demand, supply, and regulatory aspects of the sustainability opportunity along with many of the strengths supply chain organizations bring when leading this change.

This framework also references the means of capitalizing on this opportunity through the concept of “maturity.” In this context, higher levels of maturity represent greater capability to generate and maintain competitive advantage. Maturity relates strongly to whether the enterprise has created repeatable processes that allow it to optimize performance relative to achieving specific objectives. (As noted earlier, high-performing supply chain organizations excel at this approach.)

The model identifies four basic levels of enterprise maturity in regard to how companies address environmental opportunities. When it comes to strategic orientation, for example, “Compliers” see only burdens, and therefore they do the minimum. “Dabblers” are opportunistic, hence they adopt easy, one-off initiatives to enhance their image and slightly lower their costs. “Consistent Improvers” see sustainability as a spur for continuing process improvement efforts that have multiple benefits (such as reducing costs, improving corporate image, and differentiating their product offerings). “Enterprise Optimizers” see sustainability as a springboard to dominance. Enterprise Optimizers leverage sustainability as a catalyst for product and process innovations through collaboration across the ecosystem, and they have the most thorough and well-integrated metrics. They push consistent, innovative, and strategically integrated, end-to-end efforts to develop and extend structural advantages. As a result, they achieve winning products and positions, growth, and superior performance.

A company’s position relative to the Green Enterprise Maturity Model is best conceptualized as a mosaic. The different enterprise dimensions shown in Figure 3 will be at various levels of maturity. Leaders should help their firms learn where they stand and make explicit decisions about where to strategically invest for greater maturity and better business results. At the same time, they should recognize that it generally is not possible to simultaneously reach the

highest level of maturity in every dimension.

Process maturity is not the only condition that is necessary for creating wealth. Leaders must also convince others to coalesce around a shared conviction and strategic direction. This is a matter of articulating the value of recommended actions. Supply chain organizations are often at a disadvantage in this regard. Demand-side departments such as marketing and business development routinely deal with the challenge of articulating value amidst the uncertainty that comes with investing in new products, services, and markets. Supply chain organizations need that same capability to complete the portfolio of skills they need for leading enterprise sustainability efforts.

The Green Enterprise Maturity Model can provide the first step toward building that capability. Communicating through an enterprise-level framework that identifies how sustainability opportunities and contributions will affect all aspects of the business is a first step toward building that capability. This framework recognizes that cost reductions that are equal in terms of their immediate monetary value are not always equal in their impact on the entire enterprise. For example, a 5-percent reduction in materials cost with a proportional drop in carbon emissions is worth more than a 5-percent cost reduction with no emissions reduction. The former will leverage future energy price increases and public opinion, whereas the latter will do neither.

Supply chain executives should also rotate some of their best talent through demand-side functions while encouraging demand-side talent to rotate through the supply chain organization. This “talent exchange” will develop a talent pool with broader, enterprisewide skills while helping supply chain managers learn how to better articulate value. This is important, because articulating value helps transformational leaders overcome the resistance that inevitably arises when potentially significant changes are on the agenda.

Most people want to support their companies’ sustainability efforts, but some may need a bridge that helps them connect traditional supply chain objectives to environmental programs. The familiar concepts linking the two discussed earlier can provide that bridge. Leaders must also provide answers to questions about the potential benefits of corporate sustainability initiatives for both the organization and for the individual. As sustainability goals become more accepted and integrated with a company’s overall goals, it is important to reflect these in the performance appraisal and management system. Failing to do so sends a message that the carbon-reduction or other environmental effort isn’t serious.

Similar concerns arise in efforts to raise sustainabil-

ity performance in an extended ecosystem. Suppliers and distributors are just as interested in the initiative’s business and personal value as are direct employees. Fortunately, this will be a familiar scenario to supply chain leaders. They understand that asking suppliers to raise quality levels or reduce prices is always more successful when they can demonstrate a win-win scenario for both supplier and buyer, and that the same holds true when trying to get supply chain partners to sign on for environmental improvements. It is important to include sustainability metrics in any formal supplier measurement system. The results will serve as a signpost of performance in regard to mutual wealth creation.

### A seat at the table

Anyone can create a slot in an organization chart. But genuine, effective leadership cannot be conferred like a title. It must be earned, of course, by garnering the respect of those who follow. It also must be seized by taking the initiative even at the risk of failure. The growing trend toward corporate environmental and sustainability programs represents a wonderful opportunity for supply chain leadership precisely because there is still risk involved—more risk than pursuing cost reductions, for example. Along with this risk, however, comes a wide-open opportunity with enterprisewide scope for the creative and motivated leader.

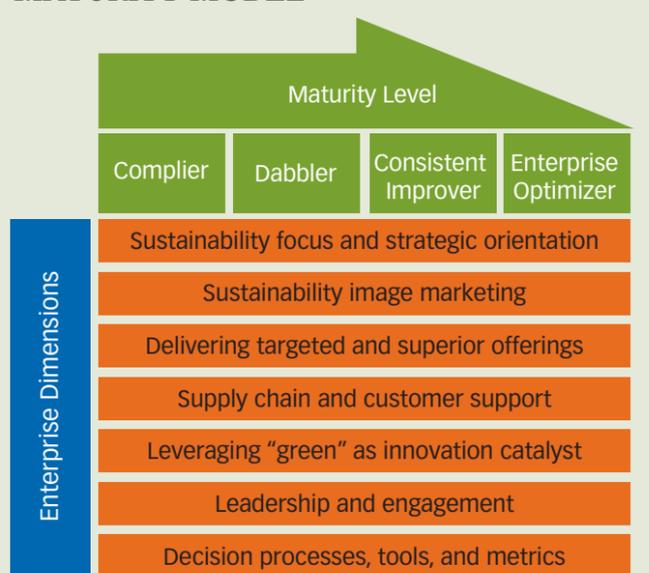
Taking the lead in environmental sustainability may help supply chain managers achieve a longstanding goal. Many supply chain groups are crying out for “a seat at the table”—to have a peer voice in important business decisions, such as the development and launch of new products and services, new markets, channels, and even pricing strategies. The only way to get that seat is to take the initiative and demonstrate value that earns the respect of others. Leadership of corporate sustainability and environmental programs offers a golden opportunity for those who wish for a seat at the table. In this case, not only is it possible to get a seat but it also is possible to define the shape of the table. △

### Endnotes:

1. Thomas L. Friedman, *Hot, Flat, and Crowded: Why We Need a Green Revolution—and How It Can Renew America*, Farrar, Straus and Giroux: 2008.
2. Daniel Vermeer and Robert Clemen, “Why Sustainability is Still Going Strong,” *Financial Times*, February 13, 2009.

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[FIGURE 3] GREEN ENTERPRISE MATURITY MODEL



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