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From the pages of Supply Chain Management Review

The Greening of Wal-Mart's Supply Chain

By Erica L. Plambeck -- 7/1/2007

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In October 2005, in an auditorium filled to capacity, Wal-Mart President and CEO Lee Scott made the company's first speech to be broadcast to 1.6 million employees in all 6,000-plus stores worldwide—and shared with its 60,000-plus suppliers. Scott announced that Wal-Mart was launching a sweeping business sustainability strategy to dramatically reduce the company's impact on the global environment and thus become "the most competitive and innovative company in the world." He argued that "being a good steward of the environment and being profitable are not mutually exclusive. They are one and the same." Scott also committed Wal-Mart to three aspirational goals: "To be supplied 100 percent by renewable energy; to create zero waste; and to sell products that sustain our resources and the environment."

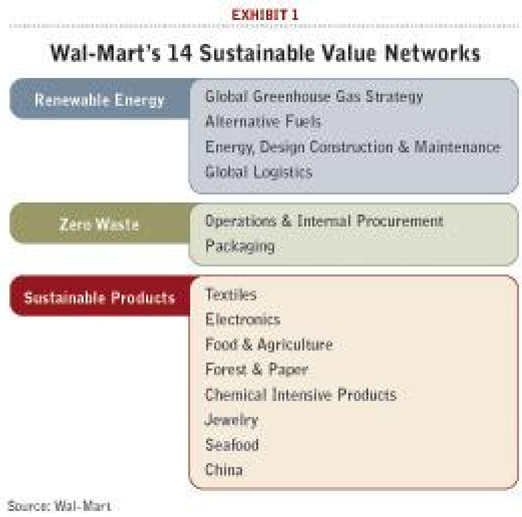
To meet those goals, Wal-Mart would seek to transform its supply chain, in cooperation with suppliers and environmental nonprofit organizations. Gwen Rutta, Director of Corporate Partnerships at Environmental Defense, was excited about working with Wal-Mart: "We've come to believe through experience that you really can create environmental progress by leveraging corporate purchasing power," she said. "And who's got more purchasing power than Wal-Mart?"

Indeed, Lee Scott's cooperative business sustainability strategy would go much farther than the retail giant's earlier green initiatives. In the past, Wal-Mart had dealt with environmental issues defensively, rather than cooperatively, proactively, and as profit opportunities. In 1989, in response to letters from customers about environmental concerns, the company had launched a campaign to convince its suppliers to provide environmentally safe products in recyclable or biodegradable packaging. The large-scale effort met with some skepticism from commentators who believed that it was intended to generate benefits for Wal-Mart at its suppliers' expense.

Nevertheless, the company did earn some "goodwill among environmentalists [as] the first major retailer to speak out in favor of the environment in 1989."When vendors claimed they had made environmental improvements to products, Wal-Mart began promoting the products with green-colored shelf tags (without measuring or monitoring the improvements themselves). At one point, the company sold as many as 300 products with green tags. But not all the headlines were positive. One large supplier was exposed for stretching its claim to offer environmentally friendly paper towels, and Wal-Mart and the supplier were heavily criticized. By the early 1990s, the green tag program disappeared altogether, and environmental issues seemed to slip off the company's list of strategic priorities.

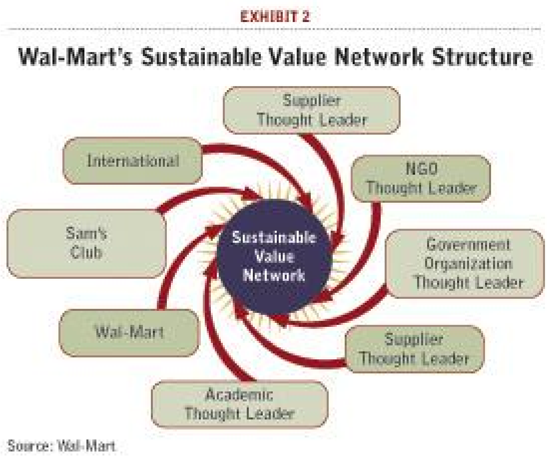
Lee Scott, along with Andrew Ruben and Tyler Elm, vice president and senior director of corporate strategy and business sustainability, respectively, recognized that in contrast to those early campaigns, their new sustainability strategy would need to be deeply embedded in Wal-Mart's operations and supply chain management to meet the ambitious goals set in 2005. Elm put it this way: "We recognized early on that we had to look at the entire value chain. If we focused on just our own operations, we would have limited ourselves to 10 percent of our effect on the environment and eliminated 90 percent of the opportunity that's out there."

Looking Outside the "Bentonville Bubble"



In 2005, with that recognition in mind, Ruben hired Blu Skye Sustainability Consulting to help identify the categories of Wal-Mart's products and processes that had the greatest environmental impact. The Wal-Mart/Blu Skye team multiplied sales data with environmental impact factors from the Union of Concerned Scientists, and identified 14 focal areas, bundled into three broad categories: renewable energy; zero waste; and sustainable products. For each focal area, an executive sponsor (primarily at the executive vice president level) and a network captain (typically a senior vice president) took charge of building a sustainable value network of Wal-Mart employees and representatives from government, academia, environmental nonprofits, suppliers, and other stakeholders. The goal was to reduce environmental impacts and derive profit from that positive change. Network captains were typically senior managers from Sam's Club or Wal-Mart who were considered to be among the company's top performers. Whereas Wal-Mart had previously been notorious for being internally and operationally focused, the network captains were charged to look outside "the Bentonville Bubble" for strategic input and asked to start "pulling ideas from everywhere," even from critics.

Environmental groups joined the networks with some trepidation. As a *Financial Times* article put it, "For membership-based environmental groups, such as the Sierra Club, and others that seek to work in coalition with student and labor campaigners, engaging with the biggest villain on the block presents risks of losing support and funds." However, many such organizations decided that the advantages of being able to help influence Wal-Mart's environmental performance outweighed any negative repercussions from the association. Seeking the opportunity to drive positive environmental change on a massive scale, nonprofits and nongovernmental organizations (NGOs) such as Environmental Defense stationed employees in the company's Bentonville, Ark. headquarters to work within the networks. However, Wal-Mart strategically decided *not* to hire associates—employees—to work on sustainability on a full-time basis, but instead to embed sustainability in their daily work. Elm explained the approach: "Business sustainability isn't something you're doing in addition to your job. It is a new way of approaching your job." To help make that lean model viable and because Wal-Mart lacked internal expertise in environmental sustainability, the company hired one or more external advisors from Blu Skye or Rocky Mountain Institute (RMI) for each network.



To capitalize on the incoming ferment of creative ideas, many of the 14 networks implemented new supply chain management practices. Across all 14 networks, the leaders intensified the company's efforts to move toward stronger relationships with a relatively small number of suppliers. With assistance from its network partners—the environmental nonprofits and consultants—Wal-Mart set a goal of motivating suppliers to "race to the top" in improving the environmental sustainability of products and processes. The new supply chain management practices associated with this initiative are summarized here, and described in greater detail below, with examples drawn from the company's global logistics, China, seafood, electronics, and textiles networks. Wal-Mart is engaging its array of network partners to:

1. Identify Goals, Metrics, and New Technologies

Speaking to the task of identifying efficient new technologies and goal-setting, sustainability director Elm said: "The value of the network approach is that the goals grew as the spirit of the possible grew. [For example,] the involvement of groups like Rocky Mountain Institute in our logistics program had a tremendous impact on how much and how quickly Wal-Mart recognized it could drive change. Initially, the logistics network was going after incremental gains—for example, improving the efficiency of Wal-Mart's trucking fleet by a few percent over several years. But now they plan to double its efficiency in 10 years." With guidance from RMI, Wal-Mart started to procure hybrid diesel-electric trucks and refrigerated trucks that featured a small power unit for cooling so the engine could be turned off when the truck was stopped. In the first year of the program following Lee Scott's announcement, the logistics network achieved roughly a 25 percent improvement in fuel efficiency, meaning almost $75 million in annual savings and 400,000 tons of CO_2 per year that did not enter the atmosphere.

For its part, the packaging network implemented a Web-based scorecard that would evaluate each product's packaging against nine sustainability metrics, including cube utilization, recycled content, CO_2 per ton of production, and recovery value. The scorecard was developed with input from the 200-plus members of the packaging network, including nonprofits, the U.S. Environmental Protection Agency, Wal-Mart's direct suppliers, packaging suppliers, and other stakeholders. Wal-Mart's more than 60,000 suppliers were asked to use the scorecard throughout calendar 2007 to see how their packaging innovations, environmental standards, energy efficiencies, and use of materials rated relative to their peers. Beginning in 2008, Wal-Mart formally planned to use the system to "measure and recognize its entire supply chain based upon each company's ability to use less packaging, utilize more effective materials in packaging, and source these materials more efficiently relative to other suppliers." The scorecard is an important enabler for Wal-Mart to achieve its public goal of reducing the packaging used by all of its suppliers by 5 percent between 2008 and 2013. If achieved, this five-year program is expected to generate $3.4 billion in savings. In the first month, 2,268 vendors have logged onto the packaging scorecard site and 117 products have been entered into the system.

2. Certifying Environmentally Sustainable Products

According to an international study released in 2006, all species of wild seafood are greatly depleted and predicted to collapse within 50 years. Within this ominous business environment, Wal-Mart sourced approximately $750 million in seafood in 2006, and the company's volume of seafood business is growing at roughly 25 percent a year. "I am already having a hard time getting supply," said Peter Redmond, vice president for seafood and deli, and captain of the Wal-Mart seafood network. "If we add 250 stores a year, imagine how hard it will be in five years." Redmond believes that continuity of supply is the greatest challenge for Wal-Mart's seafood network, and sees the Marine Stewardship Council's certification program for wild-caught fish as the best means for addressing this challenge.

The Marine Stewardship Council (MSC), established by Unilever and the World Wildlife Fund (WWF) in 1997, has defined standards for certification as a sustainable fishery, based on the United Nations' Code of Conduct for Responsible Fishing and on input from fishermen, retailers, government, nonprofits, and other stakeholders. The MSC certifies third parties to audit and certify fishery and processor compliance throughout the supply chain, from "boat to plate." An MSC eco-label on the finished product signals to consumers that the fish has been harvested and processed in a sustainable manner. By raising consumer awareness, the MSC hopes to drive demand and thus motivate the industry to shift to more sustainable fishing practices.

In its textiles network, Wal-Mart is partnering with environmental nonprofits to select standards for organic cotton farming and manufacturing processes and relying on those partners to oversee the chain of custody. Kim Brandner, senior brand manager of sustainable textiles for Wal-Mart, described Wal-Mart's approach:

We've worked with the Organic Trade Association and the Organic Exchange (OE) to make sure that we are upholding the most stringent guidelines and standards. For the growth of cotton, we have chosen the U.S. Department of Agriculture (USDA) standards. So, regardless of where the cotton is grown around the world, the farmers have to follow USDA guidelines for organic growth. For processing, we're following the Global Organic Textile Standard.

Third-party organizations certify practices at each link in the supply chain as the cotton moves from farm to factory. "There are about 150 certification agencies, but we recognize only the seven that we think are the most strict… Since we're not doing that paperwork, our reputation is resting on who is certifying for us, which is why we picked the toughest certification companies," said Brandner. Certification paperwork is completed at each step in the process and finally reviewed by Consumer Testing Laboratories (CTL) in conjunction with final product testing. Currently, the cost and labor requirements of certification are largely absorbed by

Wal-Mart's suppliers.

3. Providing Network Partner Assistance to Suppliers

Wal-Mart is able to provide suppliers with valuable knowledge and process assistance through its strong relationships with the environmental nonprofits in its networks. For example, when the Chinese government threatened to shut down a number of textile dye houses, including one of Wal-Mart's suppliers, in order to reduce pollution in Beijing ahead of the 2008 Olympics, Wal-Mart immediately took action. Brandner explains, "[We] put the dye house in touch with one of the NGOs in our network, which helped it formulate a more environmentally friendly process that reduced its toxic output very quickly. Although other retailers were negatively affected by the shutdown of their Chinese dye suppliers, we did not have any of our production capacity cut with this vendor."

In the seafood network, Wal-Mart is relying on the WWF to increase the number of fisheries and processing plants in the MSC certification program. Specifically, WWF helps boat operators and processors prepare to enter the certification process by doing a preliminary evaluation and identifying specific problems that need to be fixed (e.g. strengthening management practices, rebuilding stocks, and reducing environmental impacts before they will qualify for certification by the MSC).

Similarly, with the support of nonprofits such as OE, Wal-Mart is engaging more deeply in its textile supply chain than ever before. "It used to be that if Wal-Mart was buying Champion t-shirts, they wouldn't look past Sara Lee [which held the license for Champion products]. They didn't think about the spinner, or the dyer, the ginner, or the farmer," said Diana Rothschild, former Wal-Mart employee and Blu Skye consultant to the textiles network. Under the new strategy, Wal-Mart employees now interact directly with organic cotton farmers to understand their needs as OE helps them to improve farming practices.

Assistance from Wal-Mart's network partners is invaluable to suppliers and makes doing business with Wal-Mart more attractive. Suppliers have a strong incentive to innovate in order to keep Wal-Mart's business.

Wal-Mart also is implementing the following cooperative supply chain management practices to motivate suppliers to reduce the environmental impacts of their products and processes:

4. Committing to Larger Volumes of Environmentally Sustainable Products

By making a commitment to buy a specified quantity of each product certified as environmentally friendly, Wal-Mart gives its suppliers an incentive to develop and produce that product.

For instance, in its textiles network, the retailer learned that, along with the cost of certification, farmers faced a near-term reduction in yields with organic cotton farming, as well as the need to diversify crops. "Organic farmers can't grow cotton in the same field for an extended time because it depletes the soil of nutrients," said Rothschild. This forced farmers to alternate the planting of cotton with legumes, vegetables, or other cover crops to rejuvenate the soil. "Those alternate crops often cannot be sold as organic and are not as lucrative as organic cotton. This creates the temptation for farmers to turn to non-organic farming," she explained. However, to meet organic standards, a farm needed to remain free of non-organic pesticides or similar materials for a period of three years prior to the harvest of any organic crop. To increase and secure its supply of organic cotton, Wal-Mart made a five-year verbal commitment to buy organic cotton from farmers. "It gives them confidence and stability," said Lucy Cindric, captain of the textile network. In addition, to help reduce uncertainty in the market, Wal-Mart (which became the world's largest purchaser of organic cotton in 2006) also agreed to purchase the organic cotton farmers' alternate crops.

In 2006, Wal-Mart also publicly announced a highly ambitious seafood goal to carry 100 percent MSC-certified wild-caught fish in its stores within three to five years. As the supply of MSC-certified fish is currently far from adequate to meet Wal-Mart's demand, this public announcement is effectively a commitment to buy from all fisheries that become MSC-certified.

In its sourcing of consumer electronics, Wal-Mart typically avoids long-term purchasing commitments and maintains low inventory levels because of the industry's high uncertainty of demand and significant risks of inventory obsolescence. However, to acquire personal computers that were compliant with the EU Restrictions on Hazardous Substances (RoHS) Directive as part of its efforts to carry more environmentally friendly electronics, Wal-Mart made a commitment to Toshiba to buy 12 weeks' worth of inventory as opposed to its more typical four-week commitment. "We'll take that risk," said Alex Cook, electronics buyer for Wal-Mart. "We want to be the first one in the U.S. to sell RoHS-compliant PCs."

5. Cutting out the Middleman

An immediate but unanticipated benefit of MSC certification in the seafood network—and of organic cotton certification in the textile network—was full visibility of the chain of custody, and hence the opportunity to eliminate intermediaries. Said network captain Redmond:

One of the problems we had was how much of our fish was coming to us third-, fourth-, or even fifth-hand. Sometimes our supplier turned out to be nothing more than a packer that was going out to a market saying, 'I need 50,000 pounds of salmon no matter where it comes from.' Through the chain of custody, we started to see when fish was being handled four or five times, and we knew it couldn't be good for the fish [since texture and flavor fish degrades over time, especially through freezing and refreezing]. And it's certainly not good for traceability. It brought us a lot more awareness about our supplier base, so now things come to us a lot more directly.

By simplifying its supply chain, Wal-Mart reduced the frequency of seafood stock-outs, improved the quality of the fish it was receiving, reduced paperwork and transaction costs, and reduced the costs and environmental impacts of transportation.

In the textiles network, Brandner noted: "We used to buy cotton from Turkey, ship it to China for spinning and knitting, and then ship it again to Guatemala to be cut and sewn. Now, by looking more deeply at the supply chain, we're finding opportunities to do things like eliminate the shipment to China and have all processing done in Guatemala." Going direct to Guatemala saved time and money for Wal-Mart.

Despite the benefits demonstrated in the examples above, Wal-Mart is unlikely to completely eliminate its intermediaries. For example, the former CEO of a major coffee supplier to Wal-Mart sees excessive risk in eliminating coffee brokers and contracting directly with coffee farmers. His concern is that if a well-known company, such as the one he led, contracted directly with a farmer, and then the spot price for coffee went above the contract price, his company could not hold the farmer to the contract price. If it did, then NGOs would criticize the company for harming poor farmers and its reputation would suffer. Therefore, contracts with coffee farmers could effectively only place a floor on the price that his company would have to pay. In contrast, anonymous coffee brokers could hold farmers accountable to the contracted price. Contracts are important for providing incentives for investment and securing a supply of coffee, particularly when prices are low but likely to rise sharply in the near future.

6. Consolidating Direct Suppliers

Over the short term, Wal-Mart has had many diverse relationships with many factories, often working with a supplier one purchase order at a time or one season at a time. Year to year, the company may easily switch from one supplier to another. The result: it has been tough to obtain improvements on issues such as environmental compliance because the retailer's relevance to those suppliers has been low. Says sustainability vice president Ruben: "Right now we account for two percent of a lot of people's business, especially overseas. We know that needs to be a lot larger—maybe 50 or 60 percent."

So Wal-Mart is now starting to consolidate its business with select groups of direct suppliers. "We're trying to stimulate a race for the top," explained Laura Phillips, president and divisional merchandise manager of entertainment/wireless for Wal-Mart and co-captain of the electronics network, The race-for-the-top concept means that suppliers would be motivated to innovate in environmental performance in order to maintain or expand the amount of business they received from Wal-Mart.

For example, Manish Kumar, CEO of the Fishin' Company, Wal-Mart's top supplier of frozen fish fillets in the U.S. since 2005, was working with the WWF to draw more fisheries and processors into the MSC certification program even though this added significantly more complexity, time, and effort to the job without increasing near-term profits. "I had no idea what the MSC was in January [2006]," said Kumar. "Today, I spend half my day, every day, working on something related to the MSC."

Kumar felt that his efforts were helping to secure and expand his business with Wal-Mart in the long-term. "It's definitely brought us closer. I think there's a lot more trust now in our relationship," he said. "They're willing to let us talk on their behalf, defend their points, and explain to the businesses we work with how important this effort is. And, because we have the muscle of their business behind us, we can go to a plant or a fishery and persuade them to become certified."

7. Restructuring the Buyer Role

To better manage relationships with suppliers, the textiles network implemented a major organizational change: It redesigned the role of its buyers. In the past, textiles buyers had been generalists, handling a wide variety of responsibilities (as buyers did in other product categories). The textiles network divided this function into four different job categories:

• **Merchandising** (buyer)—Focused on the customer and understanding what the product assortment should be to best meet the customer's needs.

• **Product Development**—Focused on product design and trend execution—marrying what the buyer says the customer wants with what the trends are in the marketplace in order to drive development of the product.

• **Technical Services and Sourcing**—Focused on creating the technical specifications for each product, deciding how to package it, and determining the best sourcing strategy, including supplier negotiations, pricing and quality.

• **Planning and Execution**—Focused on financial planning, ordering and inventory management, and store layout.

In the new model, representatives from each of these four "centers of excellence" were co-located as members of a tightly integrated product team. Each was given the chance to become a specialist and to take a more strategic approach to their role. In particular, sourcing specialists were meant to develop and nurture the longer-term relationships with suppliers that were necessary to support activities such as the organic cotton project and other sustainability initiatives. Sourcing specialists were encouraged to hold the position for many years. According to Brandner, this organizational change, backed by the company's focus on the environment, is leading her team to "become smarter merchants," she says.

Sustainability leader Elm saw this type of change as essential to the long-term viability of Wal-Mart's sustainability strategy because in Wal-Mart's traditional business model, the buyers rotated positions every 12 to 18 months. Only by increasing the longevity and depth of personal relationships in sourcing, he believed, would Wal-Mart truly be able to develop and maintain the future-looking, trust-based relationships with suppliers needed to drive ongoing environmental innovation.

8. Licensing Environmental Innovations

In Wal-Mart's electronics network, suppliers' sensitivity about intellectual property is a barrier to improving environmental performance. Said Blu Skye's Scot Case, who worked with the electronics network: "There are all sorts of concerns about confidential business information and suppliers being reluctant to supply information to Wal-Mart because it might somehow end up in the hands of their competitors. For example, if one factory is significantly more energy-efficient than others, it's got an advantage. If it shares that information, the competition might gain a much better understanding of its production costs and therefore its profit margins." Some suppliers fear that this type of information potentially could be used by Wal-Mart in price negotiations. On the other hand, "With anything that can be easily tested, most suppliers are more comfortable providing," explained Case. "Information about how much energy a product consumes is not particularly sensitive."

This hesitancy to disclose is challenging to Wal-Mart, and not just from a performance management perspective. As Seong Ohm, vice president and divisional merchandising manager of electronics for Sam's Club and co-captain of the electronics network put it: "If someone comes up with a better, more sustainable way to do something, we want to encourage them to share that with other suppliers to increase the impact." As a result, the electronics network was encouraging suppliers to license their environmental innovations. The opportunity to derive additional revenue from an environmental innovation would increase the suppliers' incentives to invest in innovation, while licensing the innovation also would lead to improved environmental performance across the industry and more widespread benefits for Wal-Mart.

Three Traps to Avoid

In collaboration with its suppliers and with environmental nonprofits, Wal-Mart is dramatically reducing the environmental impacts of a portion of its products and production processes while increasing its own profits. At the end of 2006, Ruben and Elm found that the tangible profits generated by Wal-Mart's sustainability strategy in the first year of implementation were roughly equivalent to the profits from several Wal-Mart SuperCenters. Intangible benefits, such as public goodwill and improved assurance of supply, are likely to be worth much more to the retailer. Ruben and Elm envision a huge array of untapped opportunities, and they are committing to scale up Wal-Mart's efforts to green its supply chain.

It won't all be plain sailing. Wal-Mart faces three possible obstacles as it scales up its network approach: (1) increased costs, (2) a sub-optimal product assortment, and (3) criticism of factory labor conditions. Wal-Mart's public reputation is on the line as it makes ambitious public promises—for example, to sell only MSC-certified wild-caught fish within three to five years. Becoming more dependent on fewer selected suppliers, the retailer may face price rises from that narrower supply base, particularly in times of scarcity and for limited resources like MSC-certified seafood.

Additionally, with fewer suppliers and a focus on sourcing environmentally-friendly products, Wal-Mart may miss opportunities to source innovative products that customers might want but which are not necessarily environmentally friendly. Wal-Mart's environmental nonprofit network partners will continue to push for environmental attributes in choosing product assortments. Although Wal-Mart might in the future be rewarded with offset credits for reducing CO_2 emissions—through its heavy and successful promotions of "green" light bulbs, for instance—it is unlikely that the company can recapture all of the environmental value created by promoting green products, and might end up with a product assortment that is suboptimal for the purposes of maximizing the company's own profits.

Wal-Mart has also long been criticized for poor labor conditions in its suppliers' factories. In response, in his October 2005 speech, Lee Scott said: "We are committed to increasing our engagement concerning supplier factory conditions… We are separating factory certification from the buying organization." This will avert potential conflicts of interest that arise when buyers can obtain less expensive products from noncompliant factories, but it might exacerbate the worst labor-related problems that tend to occur when buyers under-forecast and then demand overtime production—as was discovered in Nike's supply chain.Separation of factory certification from the buying organization may cause a loss of information and coordination, which runs counter to Wal-Mart's strategy of embedding responsibility for reducing environmental impacts within the buying organization.

Going forward, Wal-Mart must be vigilant if it is to avoid these three possible pitfalls and continue to manage its supply chain in a manner that reduces environmental impacts and increases its profits. Indeed, Wal-Mart's sustainability strategy must be profitable if it is to be sustainable in the long run and achieve Lee Scott's aspirational environmental goals.

Some of Wal-Mart's "Greening" Decisions

• Buying diesel-electric and refrigerated trucks with a power unit that could keep cargo cold without the engine running, saving nearly $75 million in fuel costs and eliminating an estimated 400,000 tons of CO_2 pollution in one year alone.

• Making a five-year verbal commitment to buy only organically grown cotton from farmers, and to buy alternate crops those farmers need to grow between cotton harvests. Last year, the company became the world's largest buyer of organic cotton.

• Promising by 2011 to only carry seafood certified wild by the Marine Stewardship Council, a group dedicated to preventing the depletion of ocean life from overfishing.

• Buying (and selling) 12 weeks' worth of Restrictions on Hazardous Substances (RoHS)-compliant computers from Toshiba.

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