Greening Your Product Line:
Where to Start

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When the Competition Starts Going Green

In recent years, more and more companies have been getting on the green bandwagon. This trend is impacting the playing field and adding new dimensions to the competitive marketplace. Do any of these scenarios sound familiar?

- A locally-based retail distributor of building materials, that has up to now maintained healthy sales in the face of stiff competition, is experiencing erosion of its customer base following the introduction of a new big-box product labeling program that identifies key products as ecologically sound. The company needs to find a way to tap into consumer interest in environmentally responsible products in order to regain lost customers and attract new ones.
- A specialty products manufacturer announces a major program to reduce the environmental impacts of its operations, gaining preferential purchasing endorsements from large-volume purchasers. As a competitor you are caught unprepared and now need to devise an effective marketing response.
- The board of directors of a company producing office paper products views imposition of a carbon tax as likely in the near future and directs company officers to develop a proactive plan for minimizing tax exposure. The question now facing company officers is how to quantify carbon emissions, and how to identify where such emissions are occurring throughout the firms manufacturing and shipping operations.
- A new title – "environmental manager," and a new set of responsibilities – "improve environmental performance" are awarded to a production superintendent who, upon reflection, realizes that he has no idea what to do next.

The learning curve to achieving improved performance can be steep, so a strategy of waiting for competitors to act first can translate into significant delay in mounting a meaningful response.

There is a common element in all of these scenarios. In each case, the starting place for either initiating action or responding to the actions of your competition calls for the establishment of knowledge regarding current environmental performance. With an established understanding of the environmental impacts associated with your products and processes, development of a rational and effective plan for competing in the evolving green marketplace becomes possible. At its heart, the green marketplace is asking manufacturers and distributors to know their products inside and out.

Companies that understand the processes and impacts from their entire distribution chain will be best positioned to understand the expectations of the green marketplace and engage effectively.

Distributors, large volume buyers, and individual consumers alike expect top quality at competitive prices, but they also increasingly expect verifiable assurances that neither

environmental damage nor human exploitation are linked to their purchases. The benefit that customers are looking for (and potentially willing to pay for) is avoidance of a "consumer guilt-trip". The world's leading firms have already discovered this reality, and are moving forward quickly to change the way that they do business. A similar and more broad-based trend now appears to be developing among smaller firms and across a number of industries.

As more and more companies begin to focus on environmental performance, and to seek competitive advantage based on reduced environmental impact, firms that have not yet begun to consider the environmental impacts of what they do risk losing both market share and profit potential. There are also less tangible potential impacts to employee moral and performance, as well as to a company's credibility and ability to recruit and retain high quality individuals.

The learning curve to achieving improved environmental performance can be steep, and a strategy of waiting for competitors to act first can translate into significant delay. This article provides a framework for assessing environmental performance and tackling the associated learning curve.

Assessing Environmental Performance

The first step in improving environmental performance is *gaining an understanding of the current situation*. Approaches to this task include:

- Focus on only one aspect of environmental performance as a way of getting started. For instance, a building products distributor might first look into the source of products – where they come from, what is known about environmental impacts of gathering and processing raw materials, whether products are verifiably of legal origin, and so on. A manufacturer might examine energy use at each point in the production system to quantify those areas in which energy consumption and carbon emissions reduction potential are greatest – thereby establishing priority targets for strategic investment. Or, a manufacturer of products used in building construction might evaluate products against existing environmental standards, such as green building guidelines, to assess how those products measure up and how changes in production processes could improve product ratings.

- Examine products and processes holistically, using life cycle assessment tools to evaluate environmental impacts at every point in product life, from raw material extraction through manufacturing, distribution, and product life. Using this approach all inputs to a manufacturing process (basic raw materials, water, energy), and outputs (products, co-products, and emissions to air, water, and ground), are measured. This information is then used in calculating total energy requirements, global warming potential, aquatic and terrestrial eco-toxicity, carcinogenic and non-carcinogenic emissions, emissions tied to known respiratory problems, and so on. This information is then used as a baseline for prioritizing internal investment in environmental performance improvement. This approach is gaining traction in some of the larger corporations and among trade associations.

Getting Started

Focusing Attention

Three sources of environmental impact stand out as areas for attention on the part of any business or manufacturing enterprise interested in improving environmental performance:

- energy consumption
- impacts to the landscape resulting from raw material extraction and primary processing, and
- generation and disposal of waste

These are where the greatest attention should be directed early on in any environmentally oriented initiative.

Tracking Energy Use

Even thinking about tracking all the inputs and outputs of all the products manufactured or handled by a manufacturing operation or business can be daunting. This becomes a bit easier, however, with recognition of the fact that a great deal of the environmental impact of almost any business enterprise is linked to energy consumption. Minimizing energy consumption, and specifically minimizing consumption of energy derived from fossil fuels, will typically go a long way toward minimizing the overall environmental impact of a manufacturing operation.

So, one of the first steps in any environmental impact reduction program is to begin to track energy use, and to do so by the smallest possible functional unit. Manufacturers should have, or should develop, the ability to monitor energy consumption by machine center, by department, and by product line, and should use that ability to pinpoint where energy consumption is greatest, consumption trends, and energy consumption per unit of output. This information, in turn, provides the basis for focused thinking on how energy use might be reduced and where investments might yield the greatest payoff.

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By focusing on energy use, most business enterprises can markedly reduce the environmental impacts associated with their products and business functions.

In general, all but several of the major categories of measurable environmental impact – overall emissions to air and water, global warming potential, aquatic and terrestrial eco-toxicity, carcinogenic and non-carcinogenic emissions, air quality related respiratory problems – are directly or indirectly associated with energy use. Thus, even without conducting a full life cycle assessment, by focusing on reducing energy use, most business enterprises can markedly reduce environmental impacts associated with their products and business functions.

Evaluating Sources of Raw Materials, Components, and Products

Given the predominance of international trade in the sourcing of raw materials, components, and finished products, gathering information about environmental impacts associated with product manufacturing can be challenging.

In this case, consideration is needed about what is known about the material coming into your manufacturing plant or distribution facility. For instance:

- Is the origin known and are you familiar with conditions in the area of origin?
- Is the material being obtained legally?
- Have you visited your supplier and associated manufacturing operations?
- Do you know for certain that raw material extraction practices and impacts to the landscape and local communities consistently align with acceptable international norms of behavior?

If not, one technique that any business can employ is to regularly ask questions of suppliers regarding standards of practice. The simple act of regularly posing questions sends a market signal that you, the customer, are interested in responsible conduct. Beyond posing questions, it is possible to effectively address an issue such as source legality on each and every purchase order given out. Purchase orders, once accepted, are binding contracts. By including simple phrases like "by accepting this purchase order the vendor is assuring 'x' company that products and their component materials have been sourced according to all national and international laws" a company can direct the vendor to address concerns about legal sourcing. This approach has the added benefit of mitigating any potential future liability linked to the purchase of illegally sourced materials.

Another approach to tracking environmental impacts is to source raw materials and products through one or more product certification programs that use published standards of conduct, and often third-party oversight, to assess and verify environmental performance. For forests and wood products, certification programs that identify responsible forest management are relatively well developed. In North America, forest certification programs include those of the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), Canadian Standards Association (CSA), and the American Tree Farm System (ATFS). Outside the U.S. there are a variety of forest certification programs, including FSC and the Programme for the Endorsement of Forest Certification schemes (PEFC). Within the world's tropical forests FSC is often the only program available. Other certification programs, such as that of the Malaysian Timber Certification Council (MTCC) are available on a more limited basis. While significant volumes of certified timber have been difficult to obtain in the past, the availability of certified wood and wood products is steadily increasing. Whether large or small, firms can seek third-party certified wood or wood that is at least third-party verified as legal. Reliance on third-party certified wood provides assurance both internally and to customers that due diligence has been exercised in raw material and product sourcing.

With respect to products other than wood, such as non-wood building materials, there are as yet no certification programs for ensuring responsible practice in raw material extraction and processing. Nonetheless, such programs are now beginning to emerge. An example of standards development designed to guide the operations of business and other organizations are those of the International Social and Environmental Accreditation and Labeling (ISEAL) Alliance (ISEAL 2006).

Auditing the Waste Stream

Not only what your company consumes, but also what it wastes, are important considerations. What needs to be known about waste products are the quantity and character of waste, and how much is spent to handle, store, and dispose of wasted material. In addition, it is a good idea to examine how much waste is recycled either internally or externally, how much more could be, and whether markets might exist for some proportion of the current waste stream.

In this case a good place to start is the dumpster, the waste bins beside each work station, the electric and water bills, industry benchmark data for quantities of raw material and packaging consumed per unit of output (if available), and so on.

Some companies offer internship opportunities to students for gathering of needed information. Others actively engage employees and/or customers to identify possibilities and priorities for waste reduction. The trick is to challenge everything, to accept nothing as a given. Unneeded lights left on during breaks, idling forklifts, the volume of copying in company offices – all should receive attention.

Like other aspects of environmental performance improvement, the process of waste reduction cannot be a one-time event. Identifying and eliminating waste should be a ongoing aspect of company operations.

Starting Small

The process of getting started need not be traumatic. A recommended approach is to start with only one or two products, working completely through the process of discovery regarding what is known and unknown about raw materials, components, and products, and what options are available for achieving reasonable certainty for those things that are unknown. The next step involves implementation of changes where they can be made profitably. It is important to understand that the profitability of the change is related both to potential cost savings as well as to potential enhancement of market competitiveness and resulting revenues.

Starting at the Consumer End of the Supply Chain

One approach that a few building materials manufacturers have used in addressing environmental performance is evaluation of products against provisions of green building standards. The idea here is to determine how products rate, and how modifications to products might increase acceptance within a particular standard. The advantages of this

approach are that key areas of environmental performance are clearly spelled out, and that these areas have by definition been determined to be of interest to a growing market segment. Findings provide a convenient starting place for action or more extensive evaluation, providing at the same time an opportunity for immediate market impact.

Adding Social Elements to the Definition of Green

Only several years ago the term "green" when applied to a business entity was used to refer to an organization committed to the highest standards of environmental responsibility. Today, the definition of "green" is rapidly evolving globally to encompass not only environmental responsibility, but social responsibility as well.

Fundamentally, socially responsible materials or products are those acquired, produced, and distributed in such a way as to promote human rights, fairness, and decent working conditions throughout global supply chains.

In the new language of corporate and business leaders, a commitment to a green concept that encompasses both environmental and social responsibility is referred to as a commitment to the *triple bottom line* – economic, environmental, and social.

What is ISO 26000 and Why is it Important?

ISO 26000 is the designation of the future international Standard giving guidance on Social Responsibility (SR). It is intended for use by organizations of all types, in both public and private sectors, in developed and developing countries. It will assist them in their efforts to operate in a socially responsible manner that society increasingly demands.

Sustainable business for organizations means not only providing products and services that satisfy the customer, and doing so without jeopardizing the environment, but also operating in a socially responsible manner. Pressure to do so comes from customers, consumers, governments, associations, and the public at large. At the same time, far-sighted organizational leaders recognize that lasting success must be built on credible business practices and the prevention of such activities as fraudulent accounting and labor practices.

International Organization for Standardization, 2007.

The process of tracking of social elements in conjunction with acquiring raw materials, components, and finished products is little different than the process of tracking environmental impacts. The list of questions becomes a bit longer, but the need for asking tough questions and verifying claims through third-party oversight are no less important.

Global standards that are now under development by the International Organization for Standardization (ISO) will provide guidance to the private sector, government, and all other segments of society regarding social responsibility. The new set of standards, identified as the ISO 26000 series, is currently in draft form and available for public comment and discussion. Implementation is slated for 2010.

Going Green for the Long Term

A commitment to operating with environmental concerns front and center is a non-trivial commitment. Over any long period of time, success in maximizing environmental performance requires buy-in at all levels of a business entity, from the chief executive, to product designers, to line supervisors and employees, and even the custodial staff. Consideration of environmental impacts becomes, in effect, a part of the same discussions that may today be focused on new product development or profitability alone.

The experience of firms that have been pioneers in environmental leadership is that fundamental change does not occur by chance. Rather, it is necessary to put systems in place for measuring and monitoring key elements of a business or manufacturing enterprise, and for acting on information gained. Such systems are the focus of another ISO standard – the ISO Environmental Management Standard, 14001. Other standards within the 14000 series include those dealing with environmental labeling and life-cycle assessment.

Writing an environmental vision statement.

It's easier to get behind a vision when all your players know what the company stands for. This foundation will show customers, stakeholders, and your community that your business is invested in the environment. With your team, set an environmental vision statement and goals that all your employees understand, and your managers will uphold.

At minimum, such statements commonly affirm a company's intentions to respect the environment in the design, production, and distribution of its products and services; commit the company to being in full compliance with all laws, and to go beyond compliance whenever possible; and make your environmental policies transparent.

U.S. Environmental Protection Agency, 2007.

The major requirements under ISO 14001 are:

- Adoption of a policy statement which includes commitments to prevention of pollution, continual improvement of the environmental management system (EMS) leading to improvements in overall environmental performance, and compliance with all applicable statutory and regulatory requirements.
- Identification of all aspects of the organization's activities, products, and services that could have a significant impact on the environment, including those that are not regulated.
- Establishment of peformance objectives and targets for the EMS which link back to the three comitments established in the organization's policy (i.e. prevention of pollution, continual impovement, and compliance).
- Implementation of the EMS to meet the above objectives. This includes activities such as training of employees, establishing work instructions and practices, and establishing the actual metrics by which objectives and targets will be measured.
- Development of a program to periodically audit the operation of the EMS.

- Adoption of processes for checking and taking corrective and preventive actions when deviations from the EMS occur, including periodic evaluation of the organization's compliance with applicable regulatory requirements.
- A commitment to periodic reviews of the EMS by top management to ensure its continuing performance and to make adjustments as necessary.

As noted earlier, information related to adoption of social standards can be found in the ISO 26000 draft standard, and in information available from a number of non-governmental organizations worldwide.

Ultimately a company pursuing a leadership position in environmental and social responsibility should commit to attaining ISO 14000 certification (at a minimum 14001), to adopting standards of practice that align with the concept of corporate social responsibility, and to consider ongoing use of life cycle assessment for each of its products, coupled with some kind of third-party certified program to ensure environmental responsibility in production of raw materials and components.

Can an Enterprise be Both Green and Profitable?

It is interesting to note that some of the world's most successful companies, including some of the most profitable forest products companies are those that have embraced the concept of environmental and social responsibility, and that practice triple bottom line accounting. Such firms in, or closely aligned with, the forest sector include Weyerhaeuser, Stora-Enso, UPM-Kymmene, the Home Depot, and Ikea.

One indication of the potential payoff from greater attention to environmental performance comes from Stora-Enso which reduced annual operating costs at its Wisconsin Rapids facility by $3.5 million after a concerted effort in 2004-2005 to reduce energy consumption.

An extensive study by the UK Environment Agency (2004) showed that forest and paper companies with above average governance standards and above average environmental track records do well in business terms. These firms were found to financially out-perform companies with below average ratings by more than 43% over the four years from 1999 to 2003. This study also found that companies with the best environmental records out-performed other firms in the integrated oil and gas, water utility, and EU and US electric utilities sectors.

A Template for Improving Environmental Performance

A framework for improving environmental performance as outlined herein is summarized below. As noted earlier, getting started need not be complicated or traumatic.

A Framework for Assessing and Improving Environmental Performance

<table>
<tr><td colspan="3">Understanding the Current Situation</td></tr>
<tr><td colspan="2">Single Aspect Approach
- product source
- energy use
- use of existing environmental standard</td><td>Holistic Approach
- life cycle assessment (LCA)
- using multiple or overlapping existing standards
- developing your own standard that addresses the specifics of your product and processes</td></tr>
<tr><td colspan="3">Areas of Environmental Impact to be Addressed</td></tr>
<tr><td>Energy consumption
- monitor energy consumption
- determine trends, peaks, and per unit metrics
- identify opportunities for change and greatest payoff</td><td>Impacts to the landscape resulting from raw material extraction and processing
- evaluate sources of raw materials, components, and products
- look for existing certification programs
- develop a supplier questionnaire
- include vendor assurances in contracts and purchase orders</td><td>Generation and disposal of waste
- monitor waste production
- quantify expenses associated with waste handling, storage and disposal
- examine recycling and reuse capacities
- identify opportunities for change and the greatest payoff</td></tr>
<tr><td colspan="2">Incorporating Social Considerations</td><td>Taking a Customer Approach</td></tr>
<tr><td colspan="3">Measuring Achievements</td></tr>
</table>

While initial and relatively simple steps can lead to significant improvement in performance, the greatest chances of a profitable transformation to an environmental leadership position come from a deliberate, strategic approach. A well-known leader in informing and assisting businesses interested in greening their operations and supply chain is *Natural Step*, a Swedish-based organization that specializes in helping businesses to systematically improve their environmental performance. Through the Natural Step process a business entity strategically and methodically evaluates all aspects of operations and takes steps to effect improvement (see box below). The elements of the Natural Step process provide a useful outline of how to go about addressing the issue of environmental performance in a business/industry context.

Natural Step – A Suite of Services Available

• *Basic management workshops* – Teach the methodology for creating a vision of a financially, socially, and ecologically sustainable business.
• *CSR* – Integrating Corporate Social Responsibility in a strategic way with core business operations.
• *Sustainability Analysis* – Analysis of a business' threats and opportunities from a global market perspective – a 'gap' analysis showing where a business is today in relation to the company vision.
• *Product and Service Analysis* – External assessment and advice regarding which materials are going to be sustainable and how to conduct operations in a sustainable way.
• *Integration* – of management systems and programs with core values to create a sustainable business strategy.
• *Networking* – with other organizations applying the same systematic way of thinking.
• *Sustainability Systems Map* – reveals the key connections for an organization, its products and community.
• *Design* –innovative design is placed in the context of strategic planning for the whole organization.
• *Creating order* – out of chaos at the tools level. Learning about the tools of environmental performance improvement: 'Life Cycle Assessments, Indicators, Ecological Footprints, Triple Bottom Line, Cleaner Production…' and how to select and inform the tools really needed to attain a sustainability vision.
• *Communication* – of strategic sustainable development, and anticipating communications obstacles before they are encountered.
• *Supply Chain/Value Chain* – assessing the sustainability credentials of suppliers or others vital to the success of a business and putting responsibility where it belongs.
• *Train the Trainer* – understanding that sustainability needs to spread through the whole organization, and how to do it.

Natural Step 2008
(http://www.naturalstep.org/com/TNS_for_business/)

The Bottom Line

Society increasingly expects verifiable assurances that neither environmental damage nor human exploitation are linked to their purchases, and in response leading companies are beginning to change the way that they do business. Others, in turn, are beginning to pay attention to the new business language of environmental and social responsibility, seeking to learn more about how a broadening of mission might impact and benefit their enterprises.

There are a number of reasons to focus to a greater extent on environmental and social impacts of business operations, not the least of which is that it is the right thing to do. That the pursuit of "green" goals can also be profitable, through reduction of costs and/or expansion of market share, provides additional incentive to changing focus.

The process of getting started on the road to improved environmental (and social) performance need not be disruptive and traumatic. Rather, the learning curve can be enjoined through small, measured steps early on, beginning with gathering of information about current performance and opportunities for operating differently. Attention to energy consumption; options for tracking impacts linked to extraction of raw materials, components, and finished products; and tracking of wastes, are good places to start. This kind of preparation lays the foundation for a potential change of course long term, sustained systematic pursuit of environmental improvement, and perhaps fundamental changes in the business operation.

There is no reason to wait to get started. In fact, the learning curve to achieving improved performance can be steep, so a strategy of waiting for competitors to act first can translate to significant delay in mounting a meaningful response.

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