Bringing the Environment Down to Earth

The debate on business and the environment has been framed in simplistic yes-or-no terms: "Does it pay to be green?" Many business school academics and environmental leaders have answered yes. Yet businesspeople are skeptical—and rightly so, since they instinctively reject such all-or-nothing thinking in other contexts: Does it pay to build your next plant in Singapore? To increase your debt-to-equity ratio? To sue your competitors for patent infringement? The answer, of course, is "It depends." And so it is with environmental questions: the right policy depends on the circumstances confronting the company and the strategy it has chosen.

Much of the writing about business and the environment ignores that basic point. The underlying assumption is that the earth is sick—and that therefore it *ought* to be profitable to find ways to help it return to good health. Promoting such causes and activities as recycling, solar energy, and small-scale agriculture should redound to business's benefit. But this is faulty reasoning. The truth is, environmental problems do not automatically create opportunities to make money. At the same time, the opposite stance—that it never pays for a company to invest in improving its environmental performance—is also incorrect.

That's why managers should look at environmental problems as business issues. They should make environmental investments for the same reasons they make other investments: because they expect them to deliver positive returns or to reduce risks. Managers need to go beyond the question "Does it pay to be green?" and ask instead "Under what circumstances do particular kinds of environmental investments deliver benefits to shareholders?"

reject the clear-cut notion, and really start to look for opportunities

Managers need to go beyond the question "Does it pay to be green?"

I have identified five approaches that companies can take to integrate the environment into their business thinking. Some companies can distance themselves from their competitors by differentiating products and commanding higher prices for them. Others may be able to "manage" their competitors by imposing a set of private regulations or by helping to shape the rules written by government officials. Still others may be able to cut costs and help the environment simultaneously. Almost all of them can learn to improve their management of risk and thus reduce the outlays associated with accidents, lawsuits, and boycotts. And some companies may even be able to make systemic changes that will redefine competition in their markets.

The appeal of any of the five approaches will depend on the time horizon over which they are evaluated. As with other business problems, the environmental strategy that maximizes short-term cash flow is probably not the one that positions the company optimally for the long run. That's true of all business strategies in general, of course, but it especially applies to the environmental arena because benefits from environmental investments are often realized over long periods.

All of the approaches can help managers to bring the environment down to earth: to think systematically and realistically about the application of traditional business principles to environmental problems. They can enable some companies—those with the right industry structure, competitive position, and managerial skills—to deliver increased value to shareholders while making improvements in their environmental performance.

Differentiating Products

The idea behind environmental product differentiation is straightforward: companies create products or employ processes that offer greater

environmental benefits or impose smaller environmental costs than those of their competitors. Such efforts may raise the business's costs, but they may also enable it to command higher prices, to capture additional market share, or both.

Consider an example from the textile industry. When textile manufacturers dye cotton or rayon fabric, they immerse the material in a bath containing dyes dissolved in water and then add salt to push the dyes out of the solution and into the cloth. Ciba Specialty Chemicals, a Swiss manufacturer of textile dyes, has introduced dyes that fix more readily to the fabric and therefore require less salt.

The new dyes help Ciba's customers in three ways. First, they lower the outlays for salt: textile companies using Ciba's new dyes can reduce their costs for salt by up to 2% of revenues—a significant drop in an industry with razor-thin profit margins. Second, they reduce manufacturers' costs for water treatment. Used bathwater—full of salt and unfixed dye—must be treated before it is released into rivers or streams (even in low-income countries where environmental standards may be relatively lax). Less salt and less unfixed dye mean lower water-treatment costs. Third, the new dyes' higher fixation rates make quality control easier, thus lowering the costs of rework.

Beware of What You Know

Treating environmental issues as business problems sounds straightforward, but it's not easy. The following ...

Ciba's dyes are the result of years of development in the laboratory. They are protected against imitation by patents and by the unpatentable but complicated chemistry that goes into making them. For those reasons, Ciba can charge more for its dyes and capture some of the value it is creating for customers.

If this sounds like any other story about industrial marketing—add value to your customers' activities and then capture some of that value yourself—it should. Lowering a customer's environmental costs adds value to its operations just as surely as a new machine that enhances labor productivity does.

Three conditions are required for success with environmental product differentiation, and Ciba's approach satisfies all three. First, the company has identified customers who are willing to pay more for an environmentally friendly product. Second, it has been able to communicate its product's environmental benefits credibly. And third, it has been able to protect itself from imitators for long enough to profit on its investment.

If any of those three conditions break down, the product differentiation approach will not work. StarKist, the canned tuna subsidiary of H.J. Heinz, made this discovery when it decided to market dolphin-safe tuna.

Over the years, traditional techniques for catching tuna have caused the death of millions of dolphins. That's because the yellowfin tuna of the eastern tropical Pacific—the staple of tuna canners—often swim underneath schools of dolphin. A boat's crew would locate and chase a school of dolphins, drop a basketlike net under the school when the chase was over, and then haul in the tuna and the dolphins, often killing the dolphins in the process. Criticism of this practice, dating from the 1970s, intensified dramatically in 1989, when an environmental activist group released gruesome video footage of dolphins dying in the course of tuna-fishing operations.

In April 1990, StarKist announced that it would sell only tuna from the western Pacific, where tuna do not swim beneath dolphins. But the company ran into problems with all three conditions for success.

First, contrary to the company's survey findings that people would pay

significantly more for dolphin-safe tuna, consumers proved unwilling to pay a premium for a cheap source of protein. It didn't help that western Pacific tuna was not yellowfin but skipjack, which people found inferior in taste.

Second, although StarKist made known its efforts to protect dolphins, it turned out that the fishing techniques practiced in the western Pacific were no environmental bargain. For each dolphin saved in the eastern Pacific, thousands of immature tuna and dozens of sharks, turtles, and other marine animals died in the western part of the ocean.

Finally, the company had no protection from imitators. Its main competitors, Bumble Bee and Chicken of the Sea, matched StarKist's move almost at once.

It would be easy to take from this story a universally gloomy message about the prospects for environmental product differentiation in consumer markets. Environmental quality, after all, is a public good: everyone gets to enjoy it regardless of who pays for it. From the standpoint of economic self-interest, one might wonder why any individual would be willing to pay for a public good.

But that view is too narrow. People willingly pay for public goods all the time: sometimes in cash, when they contribute to charities, and often in time, when they give blood, clean up litter from parks and highways, or rinse their soda bottles for recycling. The trick for companies is to find the right public good—or to offer an imaginative bundle of public and private goods—that will appeal to a targeted market.

For example, sellers of "designer beef"—meat from cattle that have not been exposed to herbicides or hormones—offer consumers potential health benefits (a private good) in addition to a more environmentally friendly product (a public good). And Patagonia, a California maker of recreational clothing, has developed a loyal base of high-income

customers partly because its brand identity includes a commitment to conservation. Patagonia and the beef marketers have not only cleared the willingness-to-pay hurdle but have also found ways to communicate credibly about their products and to protect themselves from imitators through branding.

Managing Your Competitors

Not all companies will be able to increase their profits through environmental product differentiation. But some may be able to derive environmental and business benefits by working to change the rules of the game so that the playing field tilts in their favor. A company may need to incur higher costs to respond to environmental pressure, but it can still come out ahead if it forces competitors to raise their costs even more.

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How can that be done? By joining with similarly positioned companies within an industry to set private standards, or by convincing government to create regulations that favor your product.

The first approach has been particularly successful in the chemical industry. In 1984, after toxic gas escaped from the plant of a Union Carbide subsidiary in Bhopal, India, and killed more than 2,000 people, the industry's image was tarnished, and it faced the threat of punitive government regulation. The industry recognized that it had to act—to forestall government regulations and improve its safety record without incurring unreasonable costs. As a result, the leading companies in the Chemical Manufacturers Association created an initiative called Responsible Care and developed a set of private regulations that the association's members adopted in 1988.

The U.S. companies that make up the CMA must comply with six

management codes that cover such areas as pollution prevention, process safety, and emergency response. If they cannot show good-faith efforts to comply, their membership will be terminated. The initiative has enhanced the association's environmental reputation by producing results. Between 1988 and 1994, for example, U.S. chemical companies reduced their environmental releases of toxic materials by almost 50%. Although other industries were also achieving significant reductions during this period, the chemical industry's reductions were steeper than the national average.

Moreover, the big companies that organized Responsible Care have improved their competitive positions. They spend a lower percentage of their revenues to improve their safety record than smaller competitors in the CMA; similarly, they spend a lower percentage of revenues on the monitoring, reporting, and administrative costs of the regulations. Finally, because the association's big companies do a great deal of business abroad, they have been able to persuade the CMA's foreign counterparts to initiate their own private regulatory programs—even in developing countries where one might expect little enthusiasm for tough environmental policies.

The prerequisites for the success of private regulatory programs like Responsible Care are the same as those for government regulatory programs. The regulators must be able to set measurable performance standards, have access to information to verify compliance, and be in a position to enforce their rules. Private programs also need at least the tacit approval of government: if they are incompatible with other rules such as antitrust laws, the private regulations won't hold up. And private regulations must cover all relevant competitors: it is no use for some companies to tie the hands of others if a third group has the potential to undercut them both.

The commodity chemicals business is better suited than most to private regulatory initiatives. Performance standards are comparatively easy to

define because, for example, a perchloroethylene plant in Louisiana looks a lot like a perchloroethylene plant in New Jersey or Italy. Verifying compliance is not a problem either, because the companies constantly sell products to one another and thus can examine competitors' plants. Companies that violate the rules can be ousted from the association—even though it is illegal under antitrust law for the CMA to make compliance with Responsible Care a prerequisite for doing business with association members.

As an alternative to private regulation, companies that want to tie their competitors' hands can work with government regulators. Gasoline marketers in California followed this strategy when they helped design new state rules mandating reformulated gasoline to reduce air pollution.

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Despite aggressive regulation in California in the 1970s and 1980s, many urban areas in the late 1980s were still not close to meeting national standards for smog, and regulators were threatening to require the use of methanol or ethanol fuels, or even to phase out gasoline-powered cars altogether. Rather than watch their markets erode, California gasoline refiners introduced reformulated gasolines containing a compound called methyl tertiary butyl ether (MTBE), and then gained regulatory mandates effectively requiring the use of these fuels.

The California gasoline refiners were in a strong position to use environmental regulation for strategic purposes. First, regulators were more than willing to act, given the state's ongoing smog problems. Second, the costs of the regulations would be spread among all of California's automobile drivers, so the chance of organized opposition was slight. Third, competitors from other states would have an even more difficult time selling in the California market. Outsiders already faced steep barriers to entry: pipeline capacity to California was limited, and the costs

of transporting gasoline from, say, Texas were high. California's rules for reformulated gasoline erected another barrier and increased the collective pricing power of the California refiners.

Although the overall strategy was sound, the reformulated-gasoline policies have not been as effective as hoped. MTBE reduces air pollution, but leaks of the chemical have polluted groundwater. MTBE was found in municipal drinking-water wells in Santa Monica in 1997; it subsequently appeared in groundwater supplies elsewhere in the state. As a result, continued regulatory approval for MTBE use is now in jeopardy. Using environmental regulation strategically, as this example demonstrates, has both benefits and risks.

The approach of forcing rivals to match one's own behavior is fundamentally different from that of environmental product differentiation. A manager thinking about the choice between the two approaches needs to ask, Am I better off if my competitors match my investment or if they don't? If a company's customers are willing to reward it for improved environmental performance, the company will want to forestall imitation by competitors. But if its customers cannot be induced to pay a premium for an environmentally preferable good, then it may want its competitors to have to match its behavior.

Saving Costs

A third approach to reconciling shareholder value with environmental management focuses not on competitors but on internal cost reductions. Some organizations are able to cut costs and improve environmental performance simultaneously.

For instance, as many travelers know, major hotel chains over the past decade have tried to follow this approach. These companies' tactics include reducing their solid-waste generation and cutting their water and energy use. Many hotels have replaced small bottles of shampoo and

lotion with bulk dispensers, saving money and reducing waste. One company saved nearly $37,000 per year after installing dispensers at a cost of $91,000. Others use recycled packaging for amenities. Inter-Continental Hotels, for instance, reportedly saves $300,000 per year in this way at its ten properties in the United States and Canada.

Industrial companies have cut costs and enhanced environmental performance at the same time by redesigning inflexible or wasteful routines. Consider Xerox's efforts. After nearly three decades of market dominance, the company found its traditional markets crowded in the late 1980s with well-funded new entrants. Xerox's market share declined, and its margins eroded precipitously.

In 1990, the company's executives responded with a new management initiative—the Environmental Leadership Program—that eventually included waste reduction efforts, product "take-back" schemes, and design-for-environment initiatives. By the mid-1990s, Xerox's large manufacturing complex in Webster, New York, was sending only 2% of its hazardous waste to landfills. In the early 1990s, even before the program had a chance to bear much fruit, Xerox's executives were already labeling the program an unqualified success.

Xerox's story illustrates a common pattern: dramatic cost savings are often found when a company is under tremendous pressure. As long as Xerox was the unchallenged market leader, it could afford to be easygoing about cost savings—and it was. Yet when things got rough, it rose to the occasion with creative initiatives.

Observers of this pattern have wondered whether stringent environmental regulation could put the same kind of pressure on companies that competitive pressure does. They argue that "free" opportunities to improve environmental performance—in which the direct benefits to the company exceed the costs—are ubiquitous and that stricter regulatory requirements or changes in the tax code could force companies to

uncover them. (For an example of such an argument, see “A Road Map for Natural Capitalism,” by Amory B. Lovins, L. Hunter Lovins, and Paul Hawken, HBR May–June 1999.) Others disagree. They point out that managers are paid to minimize costs and wonder how adding new regulatory constraints could possibly reduce costs. Economists call this dispute the “free lunch” debate. The underlying issue is the appropriate level of government regulation.

The free lunch advocates overstate their case. Even low-hanging fruit can only be gathered after an investment of management time, and that resource is hardly free. Investments in environmental improvement, like all other investments, are worthwhile only if they deliver value after all the management costs have been included.

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Fortunately, though, companies can remain agnostic on the question of whether free opportunities to improve environmental performance are widespread. From a business point of view, even if such opportunities are rare, managers should look for them as long as the search doesn’t cost much in terms of their time or other resources.

Managing Environmental Risk

For many businesspeople, environmental management means risk management. Their primary objective is to avoid the costs that are associated with an industrial accident, a consumer boycott, or an environmental lawsuit. Fortunately, effective management of the business risk stemming from environmental problems can itself be a source of competitive advantage.

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Alberta-Pacific Forest Industries, a Canadian venture of Japanese companies, has discovered that the voluntary provision of environmental goods can cost-effectively reduce long-term business risk. In 1993, the Japanese companies and their Canadian partners negotiated timber-harvesting rights on a vast tract of government-owned aspen and spruce forests in northern Alberta. The venture planned to build a conventional pulp mill that would use chlorine bleaching. It also planned to run the forests as they had always been run in western Canada, where, as one forestry manager put it, "There was never a plan for forest management, and 'forest planning' just meant 'fiber extraction.'"

But the project ran into a buzz saw of opposition from local farmers, aboriginal residents of northern Alberta, and environmental activists from around the world. Alberta-Pacific went back to the drawing board. It returned with plans for a mill that would keep pollution levels far lower than the government required; it also developed forest management policies that would substantially reduce traditional clear-cutting. In addition, it promised to hold regular public meetings, to communicate explicitly about the environmental impact of the company's operations, to carry out collaborative research with biologists from outside the company, and to provide recreational access to the woods.

The costs of these changes were modest and, in return, Alberta-Pacific improved its community relations and achieved more stable long-term costs. The changes are an insurance policy against regulatory difficulties, sour community relations, business interruptions, and related cost shocks. The leaders of Alberta-Pacific have realized that their ability to operate is contingent on society's approval, that the formal property rights they possess are necessary but not sufficient for them to cut timber and run mills, and that environmental improvements can make sense as risk management devices.

If Alberta-Pacific had not heeded the concerns of local residents and

environmentalists, it likely would have been prohibited from using the land at all. And the stakes were high—the costs of raw materials were on a level one might find in Indonesia or Brazil, but the political and exchange-rate risks were far lower. The venture's small initial investments in the environment allowed it to profit from use of the forest.

Indeed, any company can benefit from an audit of its environmental insurance policies and risk management systems. Is the company buying the right policies? Is it retaining risk when the coverage is overpriced? Is it rewarding managers who reduce risk in their own operations or subsidizing risky behavior by failing to police it adequately?

Managers at Chevron are trying to answer those questions. They're analyzing the relative value of investing more in sprinkler systems, rapid response teams, maintenance, and other systems and activities that reduce environmental risk. They are also working to change employees' attitudes toward environmental and safety issues in order to reduce the risk of accidents. Chevron has found that environmental risk can be managed more effectively both by applying more rigorous quantitative analysis and by increasing its emphasis on training and cultural change programs.

It is not easy to prove that investments in environmental risk management are bearing fruit. And the potential for overinvestment is a concern. But just as it is for more traditional business risks, some investment in environmental risk management is prudent. (For a comparison of environmental and traditional risk management, see the insert "Integrating Risk Management.")

Integrating Risk Management

Thinking about environmental improvement as a risk management strategy, as managers at Alberta-Pacific ...

Redefining Markets

Some companies are following several approaches at once. In the process, they are rewriting the competitive rules in their markets.

As we've seen, Xerox has been a leader in searching for cost reductions. More dramatically, it has also attempted to redefine its business model. Rather than simply selling office equipment, it retains responsibility for the equipment's disposal, and it takes back products from customers when they are superseded by new technology. The machines are then disassembled, remanufactured to incorporate new technology, and resold at the same price as new machines. This practice enables Xerox to reduce its overall costs and also to make life difficult for competitors who lack similar capabilities. Customers benefit, too, because they no longer have to worry about the disposal of cumbersome machinery.

Rethinking traditional notions about property rights, as Xerox has done, is a useful way of discovering corporate opportunities to redefine markets based on environmental challenges. Instead of transferring all rights and responsibilities of ownership to their customers, Xerox and other manufacturers are retaining the obligation of disposal in return for control of the product at the end of its useful life.

Because of that initiative, Xerox reportedly saved $50 million in 1990, its first year. A drop in raw-materials purchases was the most significant component of the cost savings—fewer natural resources were used to make new machines. By 1995, Xerox estimated that it was saving more than several hundred million dollars annually by taking back used machines. Other manufacturers of electronic equipment such as Kodak, IBM, Canon, and Hewlett-Packard have undertaken similar initiatives.

Companies like Xerox that combine innovations in property rights and advances in technology may be able to create very strong competitive positions. Monsanto, DuPont, Novartis, and others are using this approach

to redefine the agriculture industry. Instead of making traditional insecticides for crop pests, the companies transfer genetic material from naturally occurring bacteria to seeds so that the plants themselves become inedible to insects. These new seeds are highly profitable; they avoid the financial and environmental costs of making, transporting, and applying insecticides. But the path has not been free of rocks: environmental groups and consumers, especially in Europe, have protested the sale of genetically engineered products in their markets.

Like Xerox, Monsanto also redefined the property rights that go with its product. In order to recover its investment in seed technology, Monsanto needs repeat customers every year. But farmers commonly engage in a practice known as "brown bagging"—they save seeds left over from one year's crop to plant the following year. In return for the right to use the new type of seeds, Monsanto requires farmers to stop brown bagging and to submit to inspections to ensure compliance.

The ambitious strategies that Monsanto and Xerox are following have attracted a great deal of attention. But such strategies can entail significant market, regulatory, and scientific risks; they're not for every company—or even for every industry. The companies that appear to be succeeding are leaders in industries that face intensifying environmental pressure. Those companies have the research capabilities to develop new ways of delivering valuable services to their customers, the staying power to impose their vision of the future on their markets, and the resources to manage the inevitable risks. Moreover, by creating an appealing vision of a more profitable and environmentally responsible future, they may be better able to attract and retain the managers, scientists, and engineers who will enable them to build on their initial success.

Beyond All-or-Nothing

All-or-nothing arguments have dominated thinking about business and

the environment. But it doesn't have to be that way. Consider how ideas about product quality have changed. At first, conventional wisdom held that improvements in quality had to be purchased at a cost of extra dollars and management attention. Then assertions were made that "quality is free": new savings would always pay for investments in improved quality. Now companies have arrived at a more nuanced view. They recognize that improving quality can sometimes lead to cost reductions, but they acknowledge that the right strategy depends on the company and its customers' requirements. It is time for business thinking on the environment to reach a similar middle ground.

As we've seen, environmental problems are best analyzed as business problems. Whether companies are attempting to differentiate their products, tie their competitors' hands, reduce internal costs, manage risk, or even reinvent their industry, the basic tasks do not change when the word "environmental" is included in the proposition.

Does all this mean that questions of social responsibility can be safely ignored? Not at all—but they're only one part of the equation. Companies aren't in business to solve the world's problems, nor should they be. After all, they have shareholders who want to see a return on their investments. That's why managers need to bring the environment back into the fold of business problems and determine when it *really* pays to be green.

Not all companies can profit from concern about the environment. Others will be able to do so by following one—and in some cases more than one—of the approaches described here. At any rate, a systematic look at environmental management opportunities is worth the time. Imaginative and capable managers who look at the environment as a business issue will find that the universe of possibilities is greater than they ever realized.

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