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COMPETITIVENESS IN THE '90s

Environmental Performance

COMPANY
CASE
STUDIES
FROM
B.C.

Canada

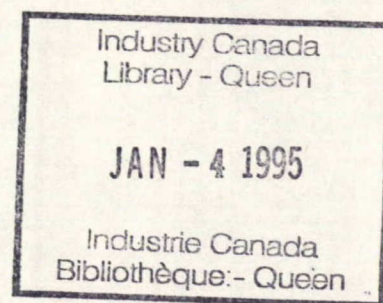


Competitiveness in the '90s

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Company Case Studies From British Columbia
Industry, Science and Technology Canada
British Columbia Region
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Competitiveness in the '90s

Foreword

This is the second in a series of five sets of case studies commissioned by Industry, Science and Technology Canada, British Columbia to examine the strategies British Columbia companies are employing to make themselves more competitive in the marketplace. Among these strategies are technology, human resources, financing, and export to the United States. This study addresses another emerging competitive strategy, perhaps a critical one—environmental performance.

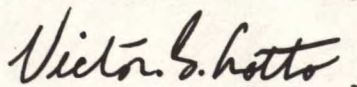
We have seen a dramatic rise in public awareness and concern about the environment. Much of this attention has been focused on the activities of business and industry. Inevitably, industry has come under increasing pressure to improve its environmental performance—from government regulators, from its customers, even from its employees. A growing number of industry and business leaders are concluding that "good environmental performance is good business." They are responding with commitment and concrete action.

The British Columbia firms profiled in this study provide us with instructive examples. Although the specific actions taken and the benefits achieved vary greatly from case to case, their combined experiences yield some vital lessons, and perhaps a few surprises. (Still a surprise to many is the evidence that improved environmental performance often results in improved profitability, even if this was not the intent.)

Clearly, there is more than one road to environmental excellence. Some firms stress technological innovation through research and development. Others build upon employee commitment and innovation. Still others create strategic alliances with interest groups, labour unions, even competitors.

The emergence of a corporate environmental ethic does not seem to be limited by the firm's size, industry or location. Our case examples range from small businesses to major corporations. Natural resource extraction, manufacturing, construction, transportation, food service, retail and communications are all represented. Four of the eleven firms are located outside the Lower Mainland.

These case studies provide a glimpse of what can be achieved when the creativity of the private sector is unleashed. We gratefully acknowledge the cooperation of the British Columbia firms highlighted in this publication in providing their stories, and trust that their example will encourage other companies.



Victor Lotto
Executive Director, British Columbia
Industry, Science and Technology Canada

March, 1991

British Columbia Telephone Company

The British Columbia Telephone Company (BC Tel) recognizes that preserving the environment for future generations while meeting responsibilities to shareholders, customers, and their 14,000 employees is one of the toughest challenges facing businesses today. If the 1980s was the decade of environmental awareness, then the 1990s can only be the decade of environmental action. BC Tel, aware in the 1980s, is taking action in the 1990s.

BC Tel's Environmental Program Stresses Employee Involvement

BC Tel has implemented environmental protection measures for many years but the decision to hire Environmental Director John Innes in 1990 spelled a renewed commitment to environmental endeavours. This decision came from the top levels of the organization.

One of the company's first major activities was to establish two environment committees: an Environment Steering Committee that would set policies and review plans and, an Environment Working Committee that would prepare the plans and be responsible for their implementation. The latter committee was made up of senior managers from each business unit in the firm. The firm then prepared a company-wide environmental policy that clearly states its position on the environment and provides broad guidelines for its employees to follow.

Rather than assigning a significant budget to be administered at the committee level, BC Tel expects each manager to deal with environmental programs at the departmental level. "We believe our managers will adopt the best environmental program only if they build it into their departmental planning and budgeting process," comments Innes. This approach is a key success factor in the BC Tel environmental program.

There are Many Ways to "Green" a Company

To encourage the recycling of its used telephone directories, the company prepared a pamphlet listing the depots that accept directories for recycling. The company further provided advertising and signage to support the depots. BC Tel is also negotiating to improve the recyclability of its directories (e.g., using water soluble glues) and to allow them to use recycled paper stock.

The company is investigating a water soluble window for its envelopes so that the windows don't have to be removed for recycling. BC Tel is also preparing to conduct a comprehensive audit of its 1,200 plant locations as well as a waste stream assessment. Further, the company has begun conducting contractor and supplier audits. With the latter audits, BC Tel is clearly stating its intention to deal only with companies that meet or exceed environmental laws and standards. As part of these audits, vendor products and packaging are subject to random testing to ensure they meet environmental specifications. "We have already terminated two supplier contracts as a result of these audits," says Innes. "The message is clear: we are not going to tolerate poor environmental performance from any company with which we do business."

BC Tel is establishing a sophisticated carpool reservation system whereby employees can register their names on the internal computer network to give or receive a ride at a particular time of day. Reserved parking is offered to employees who carpool to work with three or more passengers. Reduced parking rates are available to employees who carpool with at least one or two other people.

BC Tel has also committed to convert 25% of its vehicle fleet to alternate fuels over the next three years. As part of the change, BC Tel has been asked to form a partnership with the provincial government to develop an education program for fleet drivers. The company has also participated in other environmental initiatives such as the Federal Green Plan workshops, and GVRD environment workshops. These efforts will help to build links with the local community. They may also help to improve customer loyalty, which, in an era of increasing competition in the telecommunications industry, is very important to BC Tel.

Translating the Lessons

Decentralize the authority and responsibility for environmental endeavours

By having each department include its environmental responsibilities in its planning and budgeting process, you emphasize that sound environmental management must be integrated into normal business decision making.

Be vigilant with your suppliers

The image and performance of your suppliers and customers has a direct impact on your own image. In an age of increasing public awareness and scouting of business activities, keeping your own house in order is no longer enough.

Environmental endeavours can breed customer loyalty

Improving environmental performance and communicating it effectively can substantially help to improve customer loyalty.

Canadian

Canadian Airlines International Ltd.

The staff of Canadian Airlines International Ltd. (Canadian), one of Canada's leading airlines, comprises more than 16,000 individuals of whom 85% are unionized. Rarely in a company of this size do management or the unions voluntarily perform tasks that substantially go beyond their negotiated agreements. Yet this is exactly what happened when Canadian decided to expand its environmental program.

Canadian's Environmental Program Started Small but Grew Rapidly

In the late 1980s, increasing risks associated with environmental liabilities prompted Canadian to review its environmental performance to ensure compliance with existing laws and regulations. The firm decided it needed a more coordinated approach to its environmental practices and in 1990 hired engineer Malcolm Metcalfe to take charge as Manager of Environmental Affairs.

Metcalfe was strongly supported by the company's Chairman, Rhys Eyton, and President, Kevin Jenkins, both of whom are environmental advocates. When it came to putting programs in place, the enthusiasm and ideas of the company's employees made Canadian's environmental action plan one of which management is justly proud.

Environmental Performance is Improving on the Ground and in the Air

With Metcalfe's guidance and support, Canadian Airlines conducted an environmental performance review, looking for ways it could simultaneously improve its environmental performance and overall competitiveness. Most of the actions centered around reducing waste and conserving energy and fuel. As Metcalfe says, "It's part of our goal to be as efficient as possible in everything we do."

On its flights, Canadian switched to using recycled paper on the food trays. It exchanged its bulky plastic disposable salt and paper shakers for small paper ones. In business class, it employs almost entirely reusable cloth, china and glassware.

Shortly after initiating these changes, Canadian's flight attendants approached the Chairman with a plan to recycle cans, bottles, and newspapers. No sooner had that plan been adopted than the flight attendants returned with more ideas. Metcalfe was so impressed with their initiatives that he lobbied and obtained approval for a flight attendant to work in the office to plan and promote the company's new efforts. "It's far more effective for the employees to promote the firm's environmental endeavours than for management to do so," says Metcalfe.

Canadian's fleet is one of the most fuel efficient of any airline in the world. The company strives for full efficiency on the ground as well. They established a comprehensive car pooling program and purchased car-pool vans. Employees commuting to work in these vehicles or carpooling in their own get preferential parking at the airport operation centre.

In general, Canadian's environmental program is characterized by many small, incremental improvements as opposed to a few

mega-dollar projects. Most of these improvements are the result of spontaneous initiative-taking by individual employees.

The company has continued to expand its environmental program but Metcalfe is reluctant to talk about future plans. As he says, "people don't care about what you're planning to do, they only care about what you've done."

Results Have Been Positive for the Company and the Environment

When asked about results, Metcalfe replies that, "every environmental improvement that we have made has made sound business sense." As evidence, the company will generate \$100,000 in revenue from the cans recovered on its flights. Avoided landfill costs provide further savings. Half of the revenue has been donated to environmental organizations, such as the World Wildlife Fund, and half has been re-invested in the company's environmental programs.

Future revenues appear even more promising. Just a few months ago it took over three weeks to fill a large construction bin with revenue-generating recyclable cans. Now it is filling within a few days!

While it is difficult to measure the effect the company's environmental endeavours have had on customer loyalty, Metcalfe believes that its efforts have resulted in increased sales. Many customers have filled out comment cards on the flights, either praising the company for its efforts or suggesting improvements.

The environmental program has also improved employee motivation and enhanced rapport with the unions. Metcalfe reports that, "both the machinists' union and the flight attendants' union have been excellent to deal with. They have been very supportive of the environmental program even though it has generally meant more work for them." One year ago Metcalfe read an article stating that it was not possible to recycle cans on jet aircraft. It has been the staff's ideas and initiatives that have helped overcome many such obstacles.

Translating the Lessons

A voluntary program is the best approach

It is a simple management principle that people don't reject their own ideas. If they perceive the environmental program as their program, they will be its greatest champions.

Many small actions by all are the most effective

Continuous, incremental improvement is better than any "big bang" solution. It's about getting participation from all the staff so that the changes become part of a new and greener organizational culture.

Do not make promises

There is always a temptation to tell people about future environmental plans. However, when the plans get temporarily stalled, you end up losing credibility when people's expectations are not met.



Gloucester Industrial Estates

The Co-operators Group of Companies and Chichester Properties Ltd., both Canadian firms, formed a joint venture to develop an industrial park with a difference. The joint venture company, Gloucester Industrial Estates (Gloucester) was established to build an industrial development that puts the environment first. While the cost of Gloucester Estates far exceeds that of a standard industrial park, its developers are strongly committed to the concept of creating a truly environmentally friendly workplace.

At Gloucester Estates, "Environmentally Friendly" Means More Than Just Recycle and Reuse

Gloucester Estates management believe that many people dislike their jobs because of the cold and "unfeeling" environment in which they work each day. Gloucester management reasons that a workplace that incorporates some of the beauty of nature should mean happier and more productive workers. As a real estate development, Gloucester Estates should have a comparative advantage over competitive locations, if prospective tenants agree with this theory.

"The ideal workplace is also the ideal living space," says Claudio Grubner, Secretary Treasurer of Chichester Properties Ltd. "People need an environment that offers more than recycling and energy efficiency programs. The work environment has to be environmentally friendly in a psychological sense as well."

After eleven years of planning, Gloucester Estates broke ground at its site in Langley, British Columbia, in May of 1989. The company selected a lead contractor with a sound reputation for fighting for the environment, and set about creating a truly green workplace. Gloucester Estates offers tenants everything from lunch-hour fishing to a quick round of golf.

Gloucester management has gone to considerable expense to ensure that its development harmonizes with the natural environment. "This is the most environmentally conscious group of people I have ever worked with," comments the firm's contractor. Many of the company's actions back up this statement.

An Ecologically Sound Real Estate Development Requires Extra Effort

The original plans for the development called for the excavation of three lakes on the site. The intent was to excavate to a depth of about ten feet. However, when management learned that this would make year round survival of fish impossible, a decision was taken to excavate to 25 feet in the largest lake. According to Grubner, this meant removing 300,000 cubic meters of material from the one excavation alone.

All tree cutting has been kept to a minimum during building and excavation and when foliage must be added, the company plants grown trees, not seedlings. Power lines are mostly underground,

although building permits allow above-ground wires. This is an extremely expensive undertaking but helps to provide the atmosphere that Gloucester Estates is striving to create.

The company has also made considerable effort to protect the natural waterways on the site. A retired Department of Fisheries and Oceans staff member has advised on all operational procedures to protect the aquatic environment and the indigenous salmon population. Gloucester has created natural drainage patterns throughout the site and operates a continuous program to monitor and maintain water quality. This elaborate program includes capping exposed areas with topsoil or gravel to reduce stream siltation and developing a system of ponds, weirs and variable height piping to filter sediment from the streams.

Gloucester Estates is still under construction and has not yet proven itself as a means of improving worker productivity. However, the company has already signed eleven tenants, accounting for most of its first phase and expects to have no trouble achieving 100% occupancy.

Translating the Lessons

A green workplace may improve productivity

Reduced stress means improved productivity. If employees are more relaxed when working in a pleasant environment, then creating an environmentally friendly workplace may prove a cost effective means of improving the productivity of your company.

Do not be satisfied with cosmetic changes

Environmentalists keep a watchful eye on firms that claim environmental friendliness but make only cosmetic changes to follow through with the claim. This is a lesson that all companies should heed—if you're going to say you are "green", be sure you're right. There is no point in building a lake on your property if all of the fish in it die each winter.

Senior management attitudes will pervade the company

The attitudes of senior management have a strong effect on the culture of any firm. If employee attitudes towards environmental responsibility are going to change, senior management must be committed to any plan developed and communicate this commitment to employees.



Louisiana-Pacific Canada Ltd.

Louisiana-Pacific Canada Ltd.

Louisiana-Pacific Canada Ltd. (Louisiana-Pacific) is a subsidiary of a multi-national pulp and paper manufacturer, based in the United States. As a player in an industry that is constantly scrutinized by environmentalists, Louisiana-Pacific is well aware that it must evaluate the environmental consequences of its actions. The firm also recognizes that environmental concern will not fade over time. It has therefore made significant investments in research and development to improve its environmental performance, and has come up with a strategy that could make it an industry leader.

A Strategic Research and Development Investment Pays Off

The pulp and paper industry is under increasing pressure to reduce both the volume and the toxicity of its emissions. Today's governments look beyond a company's price and efficiency when letting tree harvesting contracts, to examine the firm's likely impact on the environment. The Chairman of Louisiana-Pacific saw this trend coming and reasoned that investments in environmental performance make good business sense. "We realized early on that if we were to achieve our expansion plans, we had to develop systems that were both environmentally acceptable and profitable to operate. Accordingly, we have invested significant time and money to attain our goal of being the world leader in aspen pulp production."

Thanks to its investment in research and development, Louisiana-Pacific is now in a position to implement an expansion strategy that is environmentally attractive from two standpoints: its mill incorporates a state-of-the-art zero discharge technology, and its sole production input is aspen, an abundant, fast growing tree typically regarded as offering low utility and value.

Louisiana-Pacific's strategy paid off in British Columbia. The company has been awarded a major harvesting contract in the Peace River area where it has built a zero discharge, aspen-fed, bleached chemi-thermo-mechanical pulp (BCTMP) mill that is about to go into production. The new mill, located near Chetwynd, British Columbia, uses wells for water supply and does not need, or have, a water discharge permit.

Setting an Industry Standard Can Mean Big Profits

Louisiana-Pacific's zero discharge mill is unmatched in the pulp and paper industry in British Columbia today. If it performs as expected, and if the Ministry of Forests decides to use "best available technology" as the minimum requirement for new facilities, Louisiana-Pacific will set the industry standard for mechanical pulping.

Operating the only facility that meets the new minimum standard technology could mean profits for the company. As the only local firm with experience in the new technology, Louisiana-Pacific could provide a valuable consulting service to the rest of the industry. Alternatively, the firm could keep the knowledge to itself and improve its own opportunities for expansion. Either way, the pay-off on the company's initial research and development investment could be substantial.

Translating the Lessons

Investments in R&D can make you an environmental leader

Strategic, environment-oriented research and development investments can catapult a firm into a leading position in an industry. In those industries where environmental performance is a key consideration to obtaining access to resources (e.g., a licence to harvest) and/or customers, a strategic research and development investment may allow you to set a new environmental standard for your competitors to match. This can mean significant profits in the form of licensing or consulting agreements and increased market share. In addition, setting the standard is always preferable to relying on a "me-too" strategy.

Listening to the marketplace will help

Whether your customer is a government, another corporation, or an individual consumer, your environmental performance may have a significant effect on purchasing decisions. Companies should tune in and find out just how important environmental performance is to customers. A revised marketing strategy could result.

Companies should take a long term view

Investments in environmental improvement often take much longer than one or two quarters, or even one or two fiscal years, to show a return. Companies must recognize this fact. Investments in your environmental performance should not be avoided because pay-back may be slow.



Mohawk Oil Company Ltd.

Mohawk Oil Co. Ltd. (Mohawk) is a British Columbia-based petroleum products company with 300 gas stations and convenience stores throughout Western Canada. As a firm with a relatively small financial base that must compete head to head with the major oil companies, Mohawk learned early that it needs innovative and entrepreneurial strategies to capture market share. Environmental products have provided one route to success.

Creative Environmental Products Can Edge Out Multi-Nationals

Canadians dispose of 300 million litres of used oil each year. In 1978, Mohawk recognized that this waste represented a business opportunity and a means of improving the oil industry's environmental reputation. The company set about developing a technology to re-refine used lubricating oil.

Mohawk invested in research and development and then constructed North America's first used oil re-refining plant in North Vancouver. The company's proprietary process takes used automotive oil and breaks it down into its constituent parts. The resulting base oil, which is virtually indistinguishable from virgin base oil, is blended with additives to produce a variety of specification lubricants. This simple idea has created substantial opportunities for the firm and resulted in certification under Environment Canada's "Eco-Logo" program.

Mohawk is now re-refining 18 million litres of lubricating oil each year. The company operates a fleet of oil recovery trucks that make regular pick-ups from Mohawk gas stations, competing stations and other operations throughout the province. Once re-refined, the oil is sold to customers.

Mohawk profits from this product idea in two ways: the re-refined oil is sold at Mohawk gas stations, under the company's own label, and at competitors' stations. Bulk re-refined oil is shipped to Chevron, Esso, Co-op and Canadian Tire, who package it under their own brand names.

Success Breeds Success

Pleased with the success of its first environmental venture, Mohawk began to market a "cleaner burning" gasoline during the 1980s. By blending ethanol, an alcohol produced from renewable resources like grain and sugar, with gasoline, the company came up with a premium unleaded gasoline that contains five to ten percent ethanol. When burned, this product can reduce carbon monoxide emissions by up to 40 percent.

"Ethanol enriched" gasolines are sold exclusively by Mohawk and form the basis of a marketing campaign ("Mother Nature's Gas Station") emphasizing environmental friendliness. The company believes consumers will go out of their way to stop at Mohawk for their "greener" gasoline, another product that has received Eco-Logo status.

Mohawk operates the only oil re-refining plant in Western Canada. In view of the company's installed capacity and the proprietary nature of its recycling process, it does not make economic sense for others in the industry to repeat Mohawk's investment. The company expects to successfully defend its market niche for some time.

Translating the Lessons

Environmental products can give you comparative advantage

In today's competitive environment, all companies must be innovative to succeed. Environmental products can provide a route to successful innovation. Identifying an environmental niche product and going after it can give your company a comparative advantage, even in tough, international markets.

With the right environmental strategy, market share will grow

A multitude of surveys have shown that consumers are looking for environmentally-friendly product alternatives. Introducing a new, environmentally sound product to an established marketplace can dramatically alter traditional market share positions.

Ambitious goals can pay off

Ambitious goals can wake up and revitalize just about any organization. Creating a new, environmental product to challenge traditional competitors is ambitious, but can breath new life, and new profits, into your organization.

Overwaitea Foods

Overwaitea Foods and its division, Save-On-Foods, are leading grocery store chains in British Columbia. Subsidiaries of the Jim Pattison Group of Companies, Overwaitea and Save-On are household names throughout the province. Today, consumers associate the names Overwaitea and Save-On with more than just groceries—both companies are becoming known for their impressive environmental programs.

One Employee's Concern Changed the Corporation

The commitment of Overwaitea and Save-On to environmental responsibility started with the efforts of just one employee. Dennis Kinsey, now Manager of Environmental Concerns, was in charge of the delicatessen at Save-On's North Vancouver store in 1985. Kinsey felt uncomfortable with the amount of garbage the store was sending to the landfill each week. He knew the majority of the company's waste could be recycled but saw no action at the corporate level to address the problem. Kinsey decided to take matters into his own hands.

He spent his summer vacation developing a recycling action plan for the grocery store chain. In the fall, he presented his proposal to the Jim Pattison Group. Eventually he received the green light, and a budget to pursue an environmental action plan for the chain.

Kinsey feels corporations have a moral responsibility to look after the environment. "It's something we just have to do. We produce waste so we have to look after it. There's no more time for excuses. We're making a profit on these materials so it's up to us to clean up."

In addition to taking action because it's the right thing to do, Kinsey recognizes that the grocery sector is under pressure from government to improve. The National Packaging Protocol (NAPP), calls for a 50% reduction in packaging waste between the years 1988 and 2000. With only nine years left until the turn of the century, Kinsey and his colleagues in the industry realize that significant changes are needed if this goal is to be achieved.

Many Parts of the Business Have Changed

Kinsey and his staff developed an extensive environmental action plan covering everything from waste disposal, to product purchasing criteria, to the corporate office. Many parts of the plan are already in place, and Kinsey and his staff are constantly working to update and improve the chains' performance.

As of mid-February, 1991, Overwaitea and Save-On employed 32 "recycling clerks." These full time employees oversee the extensive recycling program now established in 17 stores. Four new stores are added to the program each month.

Kinsey believes that if Overwaitea and Save-On are to be truly environmentally responsible, they must examine more than just their own operations. "We're going to develop a cradle to grave assessment of all of our suppliers and their products. We'll work with manufacturers to take a hard look at their packaging. If they don't meet our criteria within a specific time schedule, their products could be removed

from our shelves." In addition, Kinsey states that all new green suppliers will have to meet Overwaitea's environmental criteria if they want to see their products sold by the chain.

When it comes to "green" product lines, Kinsey's cradle to grave approach leaves him sceptical. "I don't believe there is any such thing as a truly green company so, at this point, we refuse to promote so-called green products."

Other Overwaitea environmental initiatives will include: a mobile recycling unit that travels from store to store to pick up recyclable materials; porcelain coffee mugs for all staff; recycling all paper, and recycling plastic grocery bags. The company is also planning to compost its organic waste.

Overwaitea is Seeing Results

The benefits to the environment of Overwaitea's in-store recycling programs are obvious. In the Save-On stores, staff are recovering 80% of all wastes, amounting to more than 100 tonnes per week of cardboard plus another 20 tonnes of glass, aluminum and plastic.

The financial benefits of the firm's environmental commitment are harder to measure. On balance, Kinsey guesses that Overwaitea will break even. At the same time, he recognizes that standard accounting analysis has not measured improvements in the company's market share which may well have occurred thanks to the attention the firm has paid to the environment.

Translating the Lessons

Environmental leadership should be nurtured

It takes just one person showing initiative and leadership to change the behaviour of hundreds of others. Your environmental leader can come from senior management, or from the lower levels of your organization. Wherever a leader emerges, the key to change is to recognize that the leader's initiatives must be rewarded and supported by senior management.

Your suppliers affect your environmental performance

To be truly environmentally responsible, a company must look beyond its own corporate borders to examine the behaviour of its suppliers. If you're purchasing an environmentally unsound product, your own behaviour towards the environment is compromised.

Make the necessary staffing and budget commitments

Companies must commit specific human and financial resources to environmental initiatives. Staff and management alike should be assigned specific responsibilities for your environmental action plan, and budgets to implement the plan must be in place.

Placer Dome Inc.

Placer Dome Inc. (Placer Dome) is a British Columbia-based mining company with holdings in a number of mines in the province. In an industry driven by international commodity market prices, cost control at the production level is all important. And in today's regulatory environment, the environmental impact of mining operations must also figure prominently in production decisions. Placer Dome found a way to combine economics and environmental responsibility, generating substantial profits for shareholders.

A New Process Meant Incremental Revenue and Reduced Costs

Placer Dome management knew that the mine tailings at its 70%-owned Gibraltar Mine site north of William's Lake, British Columbia, contained substantial quantities of copper. However, the concentrations of the mineral in the tailings were as low as 0.15%, making economic recovery difficult. In late 1986, the company decided that the potential economic and environmental gains linked to developing a new recovery process were worth a significant investment in research and development.

Placer Dome began research into the refinement of a temperature sensitive technology for "heap leaching" that had been successfully developed in the south western United States. The process uses a strain of bacteria that "eat" the iron sulphides in rock and liberate copper by oxidation. The bacteria function at their peak under conditions of low acidity and moderate temperature. Central British Columbia's extreme winters posed a challenge for the company to overcome.

To achieve the desired acidity in the dump site, tailings are sprayed with a weak sulphuric acid solution. Placer Dome found that given an appropriate level of sulphuric acid solution per unit area, resulting bacterial activity created a constant temperature within the desired range of 20- 25 degrees Celsius at the dump site, even at atmospheric air temperatures of -30 degrees Celsius.

The copper recovered from the process is Grade 1 electrolytic cathode copper that sells at a premium over basic copper and amounts to more than 10 million pounds per year at the Gibraltar mine. From an environmental perspective, the process minimizes the long-term acid drainage problem at the site.

Environmental Research and Development Pays Dividends

A spokesperson for Placer Dome, Jim Cooney, states that the company is very pleased with its successful adaptation of the system to Canada and with the return on its research and development. A pay-back was generated in two years on its \$12.6 million investment. "The savings to the company could be significant in reduced long term site remediation costs." Add to this the incremental revenue from the 10 million pounds of Grade 1 copper recovered and the benefits to the company are substantial indeed. "This is a good example of economics and the environment coming together in a positive manner," adds Cooney.

Translating the Lessons

Changing waste handling procedures can improve profits

Many firms have discovered that a new approach to "waste" materials can improve both profits and environmental performance. These process by-products can sometimes be marketed to recyclers, more efficiently recovered, or eliminated altogether. As part of an environmental performance review, an examination of waste handling policies is important.

Investments in research and development can pay off

Sometimes research and development spending is one of the best places to start to improve your environmental performance. New products, product modifications and modifications to manufacturing processes all provide opportunities for improving environmental performance, and possibly the bottom line. If you're thinking of making an investment in research and development, contact your local university first. There may be research already underway in your field of interest, or someone interested in collaborating and defraying some of your costs. Government grants and research and development tax credits are also a potential means of reducing costs.

Raintree Restaurant

The Raintree, a successful Vancouver restaurant, demonstrates that even a business as apparently environmentally benign as food service can make a variety of changes to be environmentally responsible. The Raintree puts the environment first when making all its business decisions and stands out in the food service industry as a result.

Small Business Can Introduce Environmental Improvements as Well as Big Business

The Raintree opened its doors in February of 1989. Its founder, Janice Lotzkar, had long been committed to improving the environment. "We've been trying to build a model for the food service industry," says Lotzkar. "I saw an opportunity for us. As a small business, we are in the best position to respond to the needs of society." Lotzkar believes that society needs more environmentally responsible businesses and she may be right. Consumers have responded positively to the Raintree—it is busy and profitable.

The Raintree's commitment to the environment starts with staffing. Lotzkar tries to hire only those who are committed both to the environment and to serving people. She believes the two go hand-in-hand. "If my staff don't care about recycling, they won't care about our customers. They have to go the extra yard and that's what recycling is all about."

The Raintree also separates and recycles all glass, cardboard, plastic, paper and cans. Menus, which change daily, are printed on recycled paper and are themselves recycled at closing time. Excess, unused food is donated to hunger projects. In fact, Lotzkar is now organizing a system to collect excess food from the entire food service industry in an effort to feed the hungry.

Environmental Responsibility Influences Company Policy

The Raintree has implemented green purchasing policies as much as possible. The company purchases recycled paper for almost all its stationery, business cards and promotional paper. It also gives preference to locally produced goods grown in a sustainable way. Milk is purchased in reusable glass bottles from a local dairy and locally grown, organic fruits and vegetables are served whenever possible.

Although the Raintree does not actively promote its environmental activities, its patrons are made aware of the environmental orientation of the restaurant when they visit. At the same time, the Raintree has received significant media attention for its environmental efforts. This has not been lost on consumers.

Translating the Lessons

All hands must develop an "environmental intelligence"

If a company-wide environmental policy is to be implemented effectively, all staff must understand and support the policy. Some firms try to hire only people who are already committed to improving the environment. Others actively reward environmental responsibility and initiative. Whichever approach is taken, it is important that all staff be aware of the firm's commitment to the environment and how it can be supported.

Impartial third parties can market your story

The environment is popular with the media. If you are making a change in your organization, newspaper reporters will be interested in the story. Magazine editors, or the editors of trade journals may also be interested in covering your activities. Attracting the attention of the media is a good, cost effective way to market your story. You can get the message out without spending money, and without altering your marketing campaign.

Large and small actions matter

You don't have to spend tens of thousands of dollars on research and development or rebuild your organization from the ground up to make your firm more environmentally responsible. Improvement is a continuous process and can begin with very small steps. Starting a paper recycling program in your office and switching to porcelain coffee mugs are the first steps for many organizations. Often, the enthusiasm generated by taking the first step is all that is needed to start the wheels in motion to organize a full blown environmental action plan.



Scott Paper

British Columbia-based Scott Paper Limited (Scott Paper) is the largest manufacturer and marketer of sanitary paper products in Canada, employing over 2,500 people. In recent years, the company has found that consumers' heightened awareness of environmental issues has changed the marketplace significantly. Fortunately, Scott Paper has had an environmental program in place for many years, situating the company well to meet consumer demands in the 1990s.

Scott Paper's Environmental Policy Affects All Decision Making

Scott Paper's environmental policy states that: "As a responsible corporation we will remain sensitive to environmental needs because it is a condition of staying in business; mismanaging the environment is bad for business."

The company regularly conducts environmental audits and has an environmental audit committee on the Board of Directors. This ensures that environmental issues are addressed in all decision making processes. The actions the company has taken as a result are numerous.

Scott Paper is the largest recycler in the sanitary paper industry in Canada, recycling a total of 100,000 tonnes of waste paper annually. In its two eastern Canadian mills, virtually every product has at least some recycled content. The company also points out that no elemental chlorine is used at its pulp mill in New Westminster, British Columbia, hence the production process produces neither dioxins nor furans.

Scott Paper has been managing forests with a view to sustainable development since 1948 when it developed a harvest program that focused on cottonwood, a prolific, fast growing "weed" tree (as it was then considered) with little economic value. The firm's forest management approach is complemented by a comprehensive "fibre strategy".

Scott Paper's fibre strategy focuses on three fibres: purchased kraft fibre, high yield mechanical pulp from cottonwood, and recycled fibre. The company uses a mixture of the three to improve the economic efficiency of the production process and reduce its impact on the forest resource. They have a long-term goal of using one third of each to satisfy all production needs. John Philip, Scott Paper's Vice President of Business Development and Environmental Officer, states that each fibre has its own inherent attribute. The kraft pulp is very strong, meaning that less fibre can be used to attain the quality standards demanded by the consumer. The mechanical pulp from cottonwood is produced using an environmentally sensitive process that reinforces the firm's in-house sustainable forest management policy. Finally, the recycled fibre program recognizes the need to minimize tree harvesting and reduce solid waste.

Improving Environmental Performance While Maintaining Quality is a Continuous Process

When it comes to promoting end products, Scott Paper prefers the term "environmentally sound" to "environmentally friendly." "We take a cradle-to-grave view of all of our products. We don't feel that anyone can produce a product in this market that has no environmental impact. Consequently, we back off on the hype, but continue to look for ways to produce quality products while minimizing our impact on the environment," comments Philip.

One way of reducing this impact is to actively pursue the goals of the National Packaging Protocol to reduce packaging by 50% by the year 2000. Scott Paper has been actively working to meet this challenge. Packaging to production ratios have already been improved by increasing the number of sheets in a roll, the number of rolls in a pack, and the number of packs in a case. Further, some Scott Paper institutional products are packaged in nothing but a shipping container that is both recyclable and made from recycled material.

Scott Paper believes that the firm's long term commitment to the environment has helped it achieve the status of a market leader in Canada. Its forest management and fibre strategies have contributed to both market share and net profits. In addition, the company believes that in recent years its move toward more recycled content and unbleached product has resulted in increased store listings and improved sales volume.

Translating the Lessons

Environmental awareness should be a primary mission of the corporation

By making environmental responsibility a part of the corporate mission, you will ensure that environmental factors are considered in all corporate decisions. This is the best way to ensure environmental responsibility in your firm. A patchwork approach to environmental considerations may mean that some parts of your company inadvertently negate the efforts of others.

Be modest about your efforts

Environmentalists scrutinize product claims closely. It is far better to be modest about your efforts than to exaggerate and risk drawing negative attention to your company and its products.

Paying attention to process as well as products is important

It is important to ensure that your manufacturing processes as well as your products are as environmentally sound as possible. This cradle to grave approach is the only way to achieve environmental excellence.



SUNSHINE COAST AQUACULTURE ASSOCIATION

Sunshine Coast Aquaculture Association

Salmon farming is a new and important industry in British Columbia. Comprising some 50 companies, the industry is concentrated on the Sechelt Peninsula and on the north-east coast of Vancouver Island. Although highly competitive, British Columbia's salmon farmers have worked co-operatively to develop marketing plans and markets for farmed salmon for several years. They have also worked together to solve an environmental problem.

A Disposal Problem Becomes a Profitable Small Business

British Columbia's Sechelt Peninsula salmon farmers were faced with a disposal problem in the late 1980s that required an immediate solution. Like any farmer involved in animal husbandry, salmon farmers must dispose of dead stock on a regular basis. In Sechelt, they were relying on local landfills for disposal of dead fish, or "morts." Although the fish are organic and biodegradable, their decomposition produces a strong odour that offended nearby residents. The Sunshine Coast Regional District, under pressure from both the media and the public, delivered an ultimatum to the industry: it had three months to find an alternate location to dispose of the 2,000 to 3,000 tonnes of dead fish and fish offal generated annually. At the end of the three months, morts and offal were to be banned from all local landfills.

Members of the Sunshine Coast Aquaculture Association (SCAA) pulled together to develop a plan. They hired a consultant to canvass the available options and soon began to focus on composting – a process that eliminates the need for disposal and produces a recycled, marketable product.

Technologies and raw materials were researched and chemical tests were conducted on trial runs. Before long, a means of producing high quality fertilizer from the morts, offal and wood chips was developed. The SCAA negotiated with a nearby pulp mill for waste wood chips, securing an inexpensive and reliable source of supply. The Regional District, impressed with the industry's progress, allocated a section of land adjacent to the local landfill for the composting site. The Ministry of Agriculture and Fisheries presented the SCAA with a \$5,000 grant and the project was launched.

In less than one year, the SCAA had solved the industry's disposal problem and had created a money making business: the operation of the composting facility was turned over to a local entrepreneur with the agreement that disposal charges would be invoked to cover operating costs. Profit for the new company, called "Aquapost," would accrue from the sale of fertilizer to local landscapers, nurseries, and homeowners. Aquapost is still in business today.

Salmon farmers on Vancouver Island are working to mimic the success of the SCAA. With the help of the University of British Columbia (UBC) and the provincial government, Vancouver Island salmon farmers and processors are researching the possibility of composting as much as 10,000 tonnes of organic seafood waste annually.

Translating the Lessons

Sometimes competitors make the best allies

Working with your competitors, through an industry association, is often the most effective means of solving an environmental problem that affects the industry as a whole. Industry associations should put the environment on meeting agendas to see if improvements can be made. Improving the environmental reputation of your industry as a whole is good for business.

Don't be afraid to take the initiative and communicate with your competitors

Sometimes your competitors will be experiencing the same problems that are plaguing you. This is especially true if their production processes are similar to your own—disposal and emission problems will also be similar. Don't be afraid to speak with your competitors about problems you may be facing. It is possible that together, a cost effective solution can be found that will benefit all parties.

Co-operation with interest groups is a good strategy

Most environmental issues affect more than just your company. The public, the government, local universities and your competition may also be interested parties. By building links among all these interest groups, a solution can be developed that will satisfy everyone. Maximum co-operation and consultation is often the best route to solving an environmental problem.

TILBURY

Tilbury Cement Ltd.

Tilbury Cement Ltd. (Tilbury) of Delta, with 125 employees is the Pacific Northwest's largest cement manufacturer. The company has a long history in British Columbia as B.C. Cement, Ocean Cement, Genstar Cement, and currently as a member of the CBR Group of companies. In the late 1970s, Tilbury began a program designed to increase its productive capacity, while decreasing the plant's environmental impact on the region. The company has designed and built a modern, state-of-the-art plant at the current location in Delta.

Tilbury is Working to Stay Ahead of the Regulations

From 1912 until 1978, the company's producing plant was located at Bamberton on Vancouver Island. By 1978, the Bamberton facility, a wet process plant, was technically outdated, consumed considerably more fuel per tonne of output than newer dry process plants, and, as a result, had higher emissions than newer plants.

In 1978, the company opened its new dry process plant in Delta. Lower fuel consumption and reduced emissions per unit of production through technical improvements resulted in a much more environmentally friendly plant.

Technical improvements continued through the 1980s. In 1988, a Greater Vancouver Regional District report showed that cement plants were a major contributor to sulphur emissions in the Lower Mainland. A more aggressive program began to maintain emissions well below current and anticipated permit levels.

Tilbury changed its source of shale, a major input to the cement manufacturing process and, for Tilbury, the major contributor to sulphur emissions. While the switch to an alternate shale source with a lower sulphur content raised the price of the input by 10%, it lowered emissions of sulphur oxides by a dramatic 90%.

In concert with the Canadian cement industry, Tilbury has aggressively pursued energy recovery from waste. The company uses a waste fuel source that poses an environmental problem in its own right—used tires. Tilbury invested a few hundred thousand dollars in capital works, staff time, permits, and testing, to design and prove a tire burning system. Shredded tires are now used as fuel in the kiln, along with natural gas and coal. Flame temperatures in the kiln are over 2,000 degrees Celsius, affording complete combustion. Steel from steel cords is converted to constituents of cement, thereby ensuring total disposal of the tires in an environmentally safe and efficient manner.

Tilbury is in the process of instituting additional major changes to its Delta plant, to be completed in late 1991. These changes include, among others, state-of-the-art burners that reduce the emission of nitrous oxides.

Dramatic Results Generate Enthusiasm and More Changes

Tilbury's President, Barry Irvine, is enthusiastic about the results the company has achieved, and plans to continue improvements. "Our results are excellent. All of us in the company recognize the need to reduce our 'environmental profile' and feel good about the progress we have made to date. These are the first steps of many on the road to where we want to be. These early successes will provide momentum for future improvements."

The company is now adding longer term projects to its environmental action plan. Reducing carbon dioxide emissions is next on the list and Tilbury's ten year capital plan includes a significant budget for environmental research and development. The company intends to work with the industry and regulators to keep emissions down to satisfactory levels.

Translating the Lessons

Staying ahead of the regulations can make sense

Taking a proactive stance and improving environmental performance before the government legislates is a strategy that often makes sense. Staying ahead of the regulations can mean you are working cooperatively with legislators to set the agenda, affording you some positive influence over the process.

Continuous improvement is the name of the game

Most companies cannot change their production processes overnight. Improvement is an incremental process and patience is needed. And once a goal has been achieved it is important to remember that the job is probably not finished. Implementing an environmental action plan will take most companies several years.

Conducting a performance review will highlight problems

A methodical, comprehensive review of systems is an excellent way to start thinking about your company's impact on the environment. "Environmental audits" can be performed in-house, or by consulting specialists, and will expose opportunities for improvement.

Conclusion

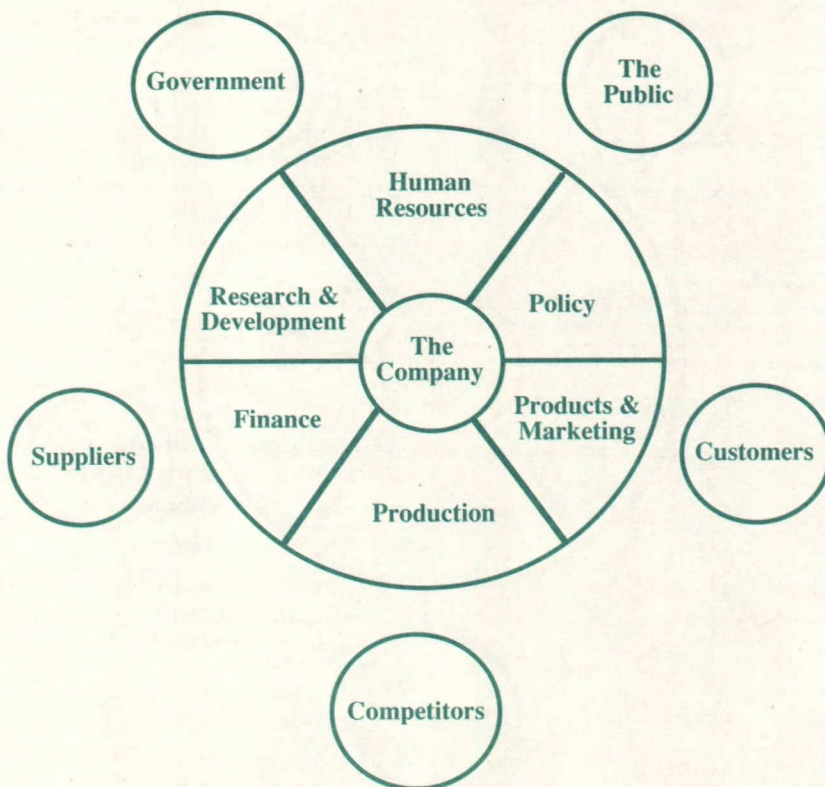
Improving Environmental Performance Requires Involvement From All Parts of Your Firm and the Community

Can other businesses benefit from the experience of these British Columbia firms? How does a company proceed to develop and implement its own corporate environmental action plan?

We learn from our case examples that virtually every aspect of the firm can be involved, as can relationships with outside parties—suppliers, customers, competitors, government and the general public. For this reason, the conceptual model outlined in Exhibit 1 provides a useful framework for reviewing the lessons derived from the case studies, and perhaps for considering how they might apply to your own business.

Exhibit 1

**Internal departments and external relationships affected by
environmental action plans**



The model depicts a firm with its internal functional areas (the inner circle) and the major external groups with which it interacts (the five satellite circles). Each of the companies examined in this study improved its environmental performance by taking some significant action in at least one of these internal or external areas.

Exhibit 2 summarizes, within this framework, the lessons from our case examples. How do they apply to your firm?*

* For a detailed guide to the steps involved in implementing an environmental action plan, you may wish to consult **The Environmental Action Handbook: An Operational Guide for British Columbia Firms**, prepared for Industry, Science and Technology Canada by Peat Marwick Stevenson & Kellogg.

Exhibit 2

Fitting the lessons into the framework

Inside The Firm

Human Resources

- Environmental leadership should be nurtured.
- Senior management attitudes will pervade the company.
- Make necessary staff commitments.
- All hands must develop an environmental "intelligence."
- A voluntary program is the best approach.
- Many small actions by all are the most effective.
- A green workplace may improve productivity.
- Decentralize the authority and responsibility for environmental endeavours.

Policy

- Environmental awareness should be a primary mission.
- Conducting a performance review will highlight problems.
- Do not be satisfied with cosmetic changes.
- Ambitious goals can pay off.
- Continuous improvement is the name of the game.
- Do not make promises.
- Large and small actions matter.

Products and Marketing

- Environmental products can provide comparative advantage.
- With the right environmental strategy, market share will grow.
- Be modest about your efforts.

Production

- Paying attention to process as well as products is important.
- Changing waste handling procedures can improve profits.
- New markets for "waste" products can be found.

Exhibit 2 (continued)

Fitting the lessons into the framework inside the firm

Finance

- Take a long-term view.
- Make necessary budget commitments.

Research and Development

- Investments in R&D can make you an environmental leader.
- Investments in R&D may be a good place to start.

Outside the firm

The Public, Media and Environmental Groups

- Cooperation with interest groups is a good strategy.
- Impartial third parties can market your story.

Customers

- Listening to the marketplace will help.
- Environmental endeavours can breed customer loyalty.

Suppliers

- Be vigilant with your suppliers.
- Your suppliers affect your environmental performance.

Government

- Staying ahead of the regulations can make sense.
- Sometimes government is a customer.

Competitors

- Sometimes competitors make the best allies.
 - Do not be afraid to communicate with your competitors.
-

Possible Changes Within the Functional Areas of Your Firm

Human Resources

The attitudes of all employees, from the lowest to the highest levels of your organization, are important. An environmental leader can emerge at any level in the company—the key is to recognize, nurture and reward initiative. Senior management must provide the rewards.

Companies often find it most effective to appoint one senior executive to take charge of environmental affairs. This action demonstrates commitment to your environmental action plan and can help ensure that employee initiatives are recognized and used to full advantage.

Policy

Your staff member in charge of environmental affairs may have already started your improvement program by developing an environmental policy, or a brief statement of the company's environmental goals and objectives. Such policies usually outline planned activities and provide guidelines for responsible actions by employees. Environmental policies need to be widely communicated within the company, and are provided to external parties by some firms.

Environmental performance reviews or audits are also a useful policy tool. These systematic examinations of company operations highlight the strengths and weaknesses of your environmental performance. The findings can be used to plan new improvements and may reveal strengths you would like to publicize.

Many companies have found that implementing a lot of small changes is the best way to improve environmental performance. Keeping plans private, but announcing results, may be the best strategy.

Products and marketing

Both your products and your marketing plan may be affected by your environmental action program. A product review may reveal that a small formulation change or the development of a new product will allow you to capitalize on customers' environmental concerns. You may also identify positive product or company environmental attributes that could be promoted.

If you do make changes to your products or marketing strategy, be modest and realistic about your efforts when communicating with external parties. Environmentalists will be scrutinizing your actions and will not tolerate exaggeration or cosmetic change.

Production

It is best to take a "cradle to grave" approach when examining your company's environmental performance. This means that process, as well as products, must be examined. When conducting your performance review, be sure to analyze your manufacturing process. Perhaps waste products can be reduced, recycled, or eliminated altogether. Also, many firms have discovered that "waste" can actually be sold.

Finance

You should review your corporate financial plan to ensure that adequate funds have been provided to conduct an environmental audit and implement required change. You may want to decentralize the responsibility for developing budgets to the departmental level to improve commitment among middle managers.

When planning investments, remember that payback periods may be lengthy. However, improved customer loyalty plus increased sales and market share may help balance the equation.

Research and development

For larger corporations, investments in research and development may be a good means of improving your environmental performance, or of capitalizing on market opportunities. Although several years may pass before a return on investment is seen, pay-offs can be substantial. Research and development plans should be reviewed with an eye to making environment-related investments.

Possible Changes in External Relationships

Customers

Whether your customers are governments, other corporations or individual consumers, chances are their environmental awareness has increased in recent years. It is important to communicate with your customers to determine their satisfaction with your environmental performance. Communication with customers may also provide new product ideas and enhance customer loyalty.

The public: media and environmental groups

You may also find that implementing an environmental action plan necessitates new links with the media and environmental groups. The media may tell your story whether you want them to or not, so be sure that information that reaches the public is as straightforward and modest as possible. Remember too that the media may end up marketing your company and product at no expense to you.

Direct communication with environmental groups is often prudent. If these groups are informed about your actions first hand, you are less likely to run into problems with misinformation. In addition, environmentalists sometimes make good, inexpensive consultants.

Competitors

Your environmental review may reveal a problem that you believe your competitors share. A co-operative approach to solving that problem could reduce research expenses for your firm, speed up the development of a solution, and benefit your industry as a whole. Industry association meetings and newsletters are often a good forum for opening the lines of communication.

Suppliers

If you take a genuine cradle-to-grave approach to analyzing your environmental performance, you may find that suppliers' activities are compromising your ability to achieve environmental excellence. Communicating directly with your suppliers and making your expectations clear is a good starting place. Negotiated changes can come next.

Government

The environment is high on the agenda of all levels of government in the 1990s. If you don't take the initiative to improve your environmental performance, chances are legislation will force you to change. By communicating with government policy makers, and by staying in compliance with, or ahead of, regulations, you can improve your relationship with government and your influence over policy decisions.

In addition, business has the responsibility to inform government of market incentives that may preclude regulatory changes. For example, if a "waste" product can be fully recovered and marketed, there may be no need to implement regulations to control the "waste."

Good Environmental Performance is Good Business

For many business leaders, environmental performance is a corporate responsibility and an ethical imperative. They conduct their business accordingly and will continue to do so.

Environmental performance has now become a business imperative as well. It affects corporate image, customer loyalty, and staff morale and productivity. It can directly affect sales of a company's products and services, and can open or close new market opportunities. It can significantly improve operating efficiency and reduce costs. It can determine future access to resources and permission to continue or expand operations. It can influence the decisions of lenders and investors and affect the risk of liability for environmental damage. No business can afford to ignore these consequences.

Concern about the environment is not a passing fad. Expectations and requirements of industry can only increase during the 1990s. Very likely, those companies that set the standards for environmental excellence will enjoy a superior competitive position as we approach the new millennium.

